

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION**  
Washington, DC 20549

**FORM 10-K**

(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
For the fiscal year ended December 31, 2019

OR

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**  
For the transition period from \_\_\_\_\_ to \_\_\_\_\_  
Commission File Number: 001-34674

**Calix, Inc.**

(Exact Name of Registrant as Specified in Its Charter)

Delaware  
(State or Other Jurisdiction of  
Incorporation or Organization)  
  
2777 Orchard Parkway  
San Jose, California  
(Address of Principal Executive Offices)

68-0438710  
(I.R.S. Employer  
Identification No.)

95134  
(Zip Code)

Registrant's telephone number, including area code (408) 514-3000

Securities registered pursuant to Section 12(b) of the Act:

| <u>Title of each class</u>      | <u>Trading symbol</u> | <u>Name of each exchange on which registered</u> |
|---------------------------------|-----------------------|--|
| Common Stock, \$0.025 par value | CALX                  | The New York Stock Exchange                      |

Securities registered pursuant to section 12(g) of the Act:

None  
(Title of class)

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes:  No:

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes:  No:

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes:  No:

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes:  No:

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

|                         |                          |                           |                                     |
|-------------------------|--------------------------|---------------------------|-------------------------------------|
| Large Accelerated Filer | <input type="checkbox"/> | Accelerated Filer         | <input checked="" type="checkbox"/> |
| Non-accelerated filer   | <input type="checkbox"/> | Smaller Reporting Company | <input type="checkbox"/>            |
| Emerging Growth Company | <input type="checkbox"/> |                           |                                     |

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes:  No:

The aggregate market value of the Common Stock held by non-affiliates of the registrant based upon the closing sale price on the New York Stock Exchange on June 28, 2019, the last business day of the Registrant's most recently completed second fiscal quarter, was approximately \$303 million. Shares held by each executive officer, director and by each other person (if any) who owns more than 10% of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 14, 2020, the number of shares of the registrant's common stock outstanding was 56,564,853.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's definitive proxy statement for its 2020 annual meeting of stockholders are incorporated by reference in Items 10, 11, 12, 13 and 14 of Part III.

**Calix, Inc.**  
**Form 10-K**  
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## SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report includes forward-looking statements that involve substantial risks and uncertainties. All statements other than statements of historical facts contained in this report, including statements regarding Calix's future financial position, business strategy and plans, product projections, anticipated market and industry trends and objectives of management for future operations, are forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as "believe," "could," "expect," "may," "estimate," "continue," "anticipate," "intend," "should," "plan," "predict," "will," "would," "project," "potential" or the negative of these terms or other similar expressions. Forward-looking statements include Calix's expectations concerning the outlook for its business, productivity, plans and goals for future operational improvements and capital investments, operational performance, future market conditions or economic performance and developments in the capital and credit markets and expected future financial performance.

Forward-looking statements involve a number of risks, uncertainties and assumptions, and actual results or events may differ materially from those projected or implied in those statements. Important factors that could cause such differences include:

- our ability to predict our revenue and reduce and control costs related to our products or service offerings;
- fluctuations in our gross margin;
- the concentration of our customer base as well as our dependence on a limited number of key customers;
- our ability to ramp sales and achieve market acceptance of our new products and communications service providers', or CSPs', willingness to deploy our new products;
- our ability to manage our relationships with our third-party vendors, including contract manufacturers, or CMs, original design manufacturers, or ODMs, logistics providers, component suppliers and development partners;
- our ability to forecast our manufacturing requirements and manage our inventory;
- our dependence on sole-, single- and limited-source suppliers, including suppliers located primarily or solely in China where there are a number of factors that could negatively impact our supply chain;
- the capital spending patterns of CSPs, and any decrease or delay in capital spending by CSPs due to macro-economic conditions, regulatory uncertainties or other reasons;
- the impact of government-sponsored programs on our customers and the impact to our customers of a U.S. government shutdown;
- intense competition;
- our ability to develop new products or enhancements that support technological advances and meet changing CSP requirements;
- the length and unpredictability of our sales cycles and timing of orders;
- our lack of long-term, committed-volume purchase contracts with our customers;
- our ability to increase our sales to larger CSPs globally;
- our exposure to the credit risks of our customers;
- the interoperability of our products with CSP networks;
- the quality of our products, including any undetected hardware defects or bugs in our software;
- our ability to build and sustain an adequate and secure information technology infrastructure; and
- our ability to estimate future warranty obligations due to product failure rates;
- our products' compliance with industry standards;
- our ability to expand our international operations;
- our ability to protect our intellectual property and the cost of doing so;
- our ability to obtain necessary third-party technology licenses at reasonable costs;
- the regulatory and physical impacts of climate change and other natural events;
- the attraction and retention of qualified employees and key management personnel;
- our ability to maintain proper and effective internal controls.

Calix cautions you against placing undue reliance on forward-looking statements, which reflect our current beliefs and are based on information currently available to us as of the date a forward-looking statement is made. Forward-looking statements set forth in this Annual Report on Form 10-K speak only as of the date of its filing. We undertake no obligation to revise forward-looking statements to reflect future events, changes in circumstances or changes in beliefs. In the event that we do update any forward-looking statements, no inference should be made that we will make additional updates with respect to that statement, related matters or any other forward-looking statements.

## PART I

### ITEM 1. Business

#### Company Overview

Calix, Inc. (together with its subsidiaries, “Calix,” “we,” “our” or “us”) was incorporated in August 1999 and is a Delaware corporation. Calix is a leading global provider of cloud and software platforms, systems and services required to realize the unified access network and the smart, connected premises of tomorrow. Our mission is to connect everyone and everything. Calix platforms empower our customers to build new business models, rapidly deploy new services and make the promise of the smart, connected home and business a reality. Innovative CSPs rely on Calix platforms to help them master and monetize the complex infrastructure between their subscribers and the cloud. Our platforms and services help our customers build next generation networks by embracing a DevOps operating model, optimizing the subscriber experience by leveraging big data analytics and turning the increasing complexity of the subscriber edge into new revenue streams.

We are delivering software platforms that help CSPs meet emerging threats from web-scale players and reinvent how they serve their device-enabled subscribers. Our solutions enable CSPs to launch entirely new business models that capitalize on the opportunities that are being generated by the increase of new applications and devices such as streaming services, smart phones, Internet of Things, or IoT, augmented and virtual reality applications and autonomous technologies. Our customers, who are embracing our strategic platforms, recognize that providing a sensational subscriber experience enables them to compete today and in the future. We also provide cloud analytics designed to help CSPs identify subscriber needs by using network and behavioral data. The insights generated from these analytics enable CSPs to create and market new offerings that monetize their investments in their networks. Finally, we strive to put our customers and their brands first to ensure that they will always have a central place in their subscribers’ lives. Our solution strategy is intended to help our customers build and reinforce their brand presence within their subscribers’ premises. We believe this must be an element of their strategy for sustaining and growing their businesses.

Our current customers include CSPs of almost every size and type. Our solutions may be used by any entity providing communications services to a subscriber. This universe includes local and competitive exchange carriers, cable multiple system operators, or cable MSOs, wireless internet service providers, or WISPs, fiber overbuilders such as municipalities and electric cooperatives and hospitality providers. We market and sell our portfolio to CSPs globally through our direct sales force as well as in partnership with a number of resellers. We have enabled over 1,600 customers to deploy passive optical, Active Ethernet and point-to-point Ethernet fiber access networks. Our premises systems and cloud solutions enable these CSPs to provide industry leading managed Wi-Fi and a growing portfolio of subscriber services to millions of their customers.

#### Industry Background and Trends

CSPs compete in a rapidly changing market to deliver a range of services to their residential and business subscribers. Subscribers purchase an array of services from a variety of CSPs, starting with basic voice and data through advanced broadband services such as high-speed Internet, Internet protocol television, or IPTV, mobile broadband, high-definition, ultra-high-definition and over-the-top video and online gaming. Consumers are also rapidly adding devices that require high bandwidth, low latency services such as virtual and augmented reality as well as IoT devices that bring significant complexity to the premises network. It is likely that adoption of autonomous technologies such as self-driving cars will dramatically increase demand and complexity. Leading CSPs are deploying new capabilities and offerings such as mobile applications, network security, parental controls and Quality of Service, or QoS, that help subscribers master the complexity introduced by new devices, applications and services. We believe that the CSP is uniquely positioned to manage these capabilities and offerings on behalf of subscribers, and this position presents the greatest potential source of differentiable value for CSPs.

The rapid growth in new technologies is generating increased network traffic and putting pressure on CSPs to cost effectively upgrade and enhance their networks to meet demand. For example, Cisco Systems, Inc. estimates that global Internet Protocol, or IP, traffic on a monthly basis will increase from 122 exabytes in 2017 to 396 exabytes in 2022, representing a compound annual growth rate of 26%. In addition, Cisco Systems, Inc. estimates by 2022, the number of devices connected to IP networks will be more than three times the global population. As the corresponding smart home applications become more sophisticated, they will shift from being useful to essential. This proliferation of new devices (and usage patterns) creates a tremendous opportunity and increases the pressure on CSPs to offer new services and create revenue streams by mastering the complexity of the smart, connected home and business for their subscribers.

#### *Web-Scale Players Have Become a Competitive Force*

The level of competition among CSPs - wireline and wireless service providers, cable MSOs and other CSPs - has increased over the last decade as traditional service boundaries have fallen. All providers are now competing for the same residential and

business subscribers using similar types of IP-based services. The expansion of new technologies in the subscriber premises creates significant new opportunities for all CSPs. Technology innovators of all types and sizes are moving aggressively to seize that opportunity, and we are now seeing web-scale players aggressively enter subscribers' homes and businesses via interactive smart home hubs and devices. These entrants, such as Amazon.com, Inc., or Amazon, Alphabet Inc., or Google and Microsoft Corporation, are extending their current platforms (e.g., data driven search, e-commerce) into subscriber premises with new devices and services that are helping to reshape the home environment. The simplicity of operating these devices, as well as their use of easily accessible data, enables these web-scale players to rapidly deploy new services and command a central place in the subscriber's daily life. The level of insight that they generate by mining user data, coupled with their DevOps business model, positions them to offer and deploy services to subscribers at a pace that traditional CSP operating and business models cannot match.

IoT, virtual reality and other connected devices have become mainstream, and they will continue to become more and more prevalent in subscriber homes in 2020. According to Statista, household penetration of smart devices is 32.4% and is expected to hit 52.4% by 2024. Mordor Intelligence has estimated the smart home market at \$64.60 billion in 2019, and it is expected to reach \$246.42 billion by 2025 (a compounded annual growth rate of 25%). Companies such as Amazon, Google and Apple Inc. have recognized this business opportunity, and they have created and acquired significant new smart premises offerings.

To address this challenge and establish control of the device-enabled subscriber, we believe CSPs must respond by leveraging analytical tools that utilize network data and subscriber behavioral data to tailor services that meet the individual subscribers' needs. These services include high-bandwidth packages, managed and whole home Wi-Fi as well as advanced applications such as security and parental controls. We believe these new services represent the CSP's greatest opportunity to create new revenue streams and higher average revenue per user, or ARPU, while reducing subscriber churn. CSPs must also leverage network and subscriber data to streamline and automate subscriber facing functions such as customer service. These data-driven approaches can significantly reduce service costs, improve profitability and support investment in new services and technologies. Increasingly, companies in the communications space will embrace strategies that apply machine learning and artificial intelligence technologies that promise to dramatically improve the subscriber experience, build subscriber intimacy and loyalty, while increasing ARPU. By leveraging data to build a tighter bond with their subscribers and deliver high-value services, CSPs can more effectively meet the challenge presented by web-scale players.

### ***The Experience Economy***

In the 2020 Data-Driven Marketing & Advertising Outlook Study, over 80% of marketers said delivering a consistent customer experience is extremely or very important to their companies. Customer experience has become the most important means for many brands to differentiate themselves in today's data-driven marketplace. Using data and insights to identify the customer's unique path to purchase the optimal experience, companies are able to customize and personalize their interactions, removing friction, and improve effectiveness. This is driving the need for tools that continually and automatically refine segments based on changing behaviors.

Leading CSPs recognize that high operating margins rely on the experiences that connectivity enables. High performing Wi-Fi is the starting point, enabling the modern applications that subscribers expect, whether it is a low-latency gaming session or a video call with smooth frame rate. Thousands of networked products and services make our lives more convenient, entertain us or keep us safe.

Delivering a market leading, connected experience requires more than a high-bandwidth service. When subscribers complain that 'the internet isn't working,' they often mean the Wi-Fi is not working and blame their CSP. On one level, owning the subscriber "experience" means ensuring that high speed data connections are not undermined by underpowered Wi-Fi hardware and that CSPs have the tools they need to manage and service subscribers cost-effectively.

At the next level, it is about creating new revenue and margin opportunities for new applications. CSPs are moving beyond commodity hardware and adding meaningful value to everyday connected experiences - whether it is providing necessities like network security and parental controls or enabling progressive services like voice controls or cloud gaming. Subscribers want a simple, safe and functional connected experience, and CSPs are perfectly positioned to lead in the experience economy.

### ***The Shift to a DevOps Business Model***

Access networks are the "life blood" of delivering the connected experience by directly and physically connecting the residential or business subscriber to the CSP's data center, central office or similar facility, creating the on-ramp to the Internet. The access network is critical for service delivery as it governs the bandwidth capacity, service quality available to subscribers and ultimately the services and experience CSPs can provide to subscribers. Providing differentiated, high-quality, high-speed connectivity has become increasingly critical for CSPs to retain and expand their subscriber base, launch new revenue-generating services and deliver a value-added experience. To meet the demands of device-enabled subscribers, CSPs have already begun to deploy access technologies that are software defined and leverage next generation Passive Optical Network,

or PON, architectures such as NG-PON2, XGS-PON and 10G EPON. In doing so, they are addressing many of limitations of legacy access systems:

- Limited capacity of outdated access architectures – Network architectures have physical limitations in their ability to scale bandwidth, avoid latency issues and deliver the advanced broadband services subscribers demand today and are expected to increasingly demand in the future.
- Inflexible networks that constrain subscriber offerings – Networks were designed to support a narrow range of services, and as a result, they limit the ability of CSPs to deploy the advanced broadband services increasingly demanded by their subscribers.
- Expensive to deploy and operate – With a wide variety of equipment installed, networks require significant downtime and labor for maintenance and upgrades, thereby placing a significant and recurring capital and operating expense burden on CSPs.
- Back-office systems that inhibit deployment of new services – Traditional methods for operationalizing new products and services often require significant testing and lengthy back-office integration activities. This often places CSPs at a competitive disadvantage relative to emerging service providers that are leveraging agile management practices.

By replacing traditional hardware functions with software defined access, or SDA, as well as software defined networking, or SDN, CSPs can overcome these operational challenges and bring new products and services to market faster. Many CSPs are embracing SDA and SDN to help accelerate innovation, deploy automation, bring agility to their networks and significantly reduce service disruptions. By embracing standards-based, modular software platforms that abstract software functions from hardware, CSPs can free themselves from a dependence on specific hardware technologies and upgrade their access network to enable a DevOps business model. The winning service providers of the future will embrace SDA platforms and transform their access networks into a competitive advantage. Ultimately, this new model will enable CSPs to manage a range of access systems across every deployment scenario (e.g., central office, head-end, cabinet or mounted on a pole) in a consistent manner. With this shift they will introduce services at a pace that can then match the speed of the web-scale players.

### ***The Imperative to Develop Lean Operating Models***

We believe CSPs face a dual challenge in the coming years – mounting competitive pressure and the requirement to increase their investments in technologies that can deliver the new services that their subscribers demand. Most will need to make shifts in their operating models to thrive in the coming decade. They must implement a lean operating model that reduces the overall operating cost to run the network and deliver services to subscribers at an accelerated pace as well as at a significantly lowered cost. The adoption of new technologies that provide automation and intelligence, such as SDA, will help service providers adopt agile operating models and reduce the burden of network and back-office operations.

### ***10 Gigabit Services Gain Momentum***

The adoption of data-intensive applications like cloud gaming and remote worker high-definition video conferencing are driving the demand for 10 gigabit, or Gb, services. Many industry experts claim that CSPs are already facing ever-increasing bandwidth demand from their subscribers, and upcoming applications such as cloud-based gaming and streaming platforms are going to increase demand further. They also highlight that the move to 10 Gb services will come at a cost and one size will not fit every subscriber scenario. CSPs must have visibility and analytics to monitor and meet the evolving behaviors and usage patterns of their subscribers. As a result, we are seeing CSPs of all sizes looking to identify subscribers who would benefit from multi-gigabit services and deploy the PON technologies of their choice on a single system or network to meet subscriber demand. In fact, Ovum estimates that purchases of 10 Gb capable access systems may surpass GPON system purchases by 2021. Ideally, CSPs will embrace a network built for all PON technology such as GPON, XGS-PON, 10G EPON and NG-PON2, so they are not limited to choosing a specific PON technology to deliver 10 Gb services. We believe leading CSPs are planning to future-proof their fiber networks and deploy the right technology at the right time to optimize their capital investments.

### ***The Rapid Emergence of Wi-Fi 6***

Consumer dependence on Wi-Fi continues to increase, with 75% of people in the U.S. reporting that Wi-Fi is their primary method of connecting to the Internet, according to Parks Associates. By 2022, it is expected that most households will have as many as 50 Wi-Fi connected devices, more than double the 2017 average, according to Cisco VNI. The trends are clear: more wireless devices, higher bandwidth applications and a greater dependence on a reliable, wall-to-wall Wi-Fi.

However, this is a challenge for many CSPs that have concentrated their investment on bringing faster speeds to the home, but not connectivity inside the home. According to a 2019 Calix sponsored report by John Kendall, Associate Director, Research & Analysis at IHS Markit, consumers may have fast speeds to the house but do not find these access speeds available wirelessly

around the home. As a result, the Wi-Fi 6 standard (also known as IEEE 802.11ax) is fast becoming the new wireless foundation for a whole host of CSP-managed subscriber experiences: trouble-free wireless connectivity, content filtering and parental control, network security, smart home automation and more.

Altogether, the Wi-Fi 6 standard defines more than 50 features beyond the Wi-Fi 5 standard. One of the largest trends from the 2020 Consumer Electronics Show, or CES, was the emergence of Wi-Fi 6 routers and devices. Consumer brand companies such as Netgear, TPLink, D-Link and Asus have announced new products, each claiming to offer some combination of the highest Wi-Fi 6 throughput, lowest latency or greatest coverage. Similarly, other manufacturers at CES announced a number of Wi-Fi 6 enabled devices to capture the consumers' imaginations.

### ***The Deployment of 5th Generation, or 5G, Networks***

As subscribers adopt next generation mobile applications and technologies, the demand for higher bandwidth, lower latency and dramatically higher device densities is accelerating. Because existing LTE mobile networks are increasingly challenged to meet these demands, many CSPs are announcing and moving to deploy 5G mobile networks that promise dramatically greater performance and capabilities for mobile and fixed broadband services. 5G is significantly different from previous generations in the mobile evolution, because it delivers higher bandwidth (10 Gbps per radio), lower latency (less than 1 msec) and supports a dramatically greater number of connections (1 million devices per km<sup>2</sup>). By leveraging higher frequency spectrum and more efficient data encoding, 5G offers CSPs a path to differentiate their services and shift the competitive landscape. CSPs are pursuing two major strategies to deploy 5G capabilities across their networks:

- **Upgrading existing LTE infrastructure** – By upgrading their existing LTE wireless networks with 5G radios, CSPs will realize 10 to 20% higher bandwidth for 5G mobile devices. This approach will offer a quick path to 5G services for some CSPs and may differentiate their mobile broadband services. However, this incremental strategy offers relatively limited improvements in wireless capacity.
- **Leveraging millimeter wavelength technology** – Leading CSPs will deploy thousands of millimeter wave 5G small cells to realize a 5- to 10-fold increase in capacity across their mobile and fixed broadband networks. This approach will enable CSPs to support virtually any next generation mobile, augmented or virtual reality, IoT or autonomous vehicle or device application. This will open up tremendous new business opportunities for early adopters. Due to the inherent range limitations of millimeter wave technology, 5G small cells must be deployed in very close proximity to subscriber devices. This will require the deployment of thousands of 5G small cells throughout a CSPs network to deliver services to subscribers.

With the adoption of 5G millimeter wavelength technology, CSPs will require transport that is both very capable and economically efficient. CSP cell networks will ultimately come to resemble high-density broadband access networks that leverage high-bandwidth, reliable fiber transport. To make the economics work, CSPs will ultimately need to embrace fiber efficient point-to-multi-point capabilities offered by NG-PON2 that include:

- Aggregated 10 Gb services delivered over a single wavelength;
- Channel bonding to increase capacity delivered for a single service; and
- Multiple wave lengths over a single PON to provide unmatched resiliency and low latency operations.

While 5G networks will be significantly more capable, the deployment of thousands of radio stations will introduce significant operational complexity for CSPs. As a result, 5G will accelerate the imperative for CSPs to adopt SDA technologies that simplify network operations and architectures. CSPs will also need to embrace advanced premises systems that exploit the capabilities delivered by 5G fixed wireless access networks to deliver an exceptional subscriber experience.

### ***The Role of Governments in Supporting Technology Investment***

As CSPs face increasing competitive pressure, they must accelerate their investments to upgrade their access networks and deploy new subscriber facing technologies. Governments around the world recognize the importance of expanding broadband networks and delivering advanced broadband services to more people and businesses. As a result, many governments have established stimulus programs or other incentives for broadband investment.

In the United States, programs like the Connect America Fund, or CAF, E-Rate and ReConnect provide billions of dollars each year to CSPs in the form of capital investment incentives and grants and loans to encourage broadband network investment in unserved or underserved communities. For example, in 2015, the CAF program was authorized to distribute \$2.0 billion per year through the end of 2020 to offset the costs of installing and operating CSP operated broadband and voice networks for large service providers in the United States. Between 2016 and 2018, this program was extended to smaller service providers to distribute over \$1.5 billion annually over the next 10 years to offset the costs of installing and operating CSP operated broadband and voice networks. In order to promote greater accountability, in 2019 the Federal Communications Commission,

or FCC, established a uniform framework for measuring the speed and latency performance for recipients of CAF. CSPs who wish to continue leveraging this program must seek new solutions that enable them to report and demonstrate their ability to meet the requirements established by this new framework. In addition, the E-Rate program was authorized to offer \$1.5 billion in grants to build gigabit capable network connections to schools. The E-Rate program is funded at its current level indefinitely. Finally, in 2018, the U.S. Department of Agriculture announced a new broadband loan and grant pilot program, now called the ReConnect Program providing \$1.15 billion to facilitate high speed broadband to the farms, which will allow them to increase productivity.

Dedicated to its long-term goal to close the digital divide, the FCC approved a new rural broadband fund called the Rural Digital Opportunity Fund, or RDOF, in January 2020. RDOF auctions will award over \$20 billion for new broadband network and service development. The deployment of these funds will be spread across a ten-year period starting in 2021. Given the competitive nature of the reverse auction, we anticipate that many greenfield service providers will compete and likely take a portion of these funds from the larger traditional service providers, which have typically received them in the past.

### **Strategy Overview**

We believe that many CSPs can and will evolve to provide the most relevant services and experience to their subscribers. Today, many CSPs command a privileged and strategic position in their subscribers' premises. They provide a service that is becoming a necessity for most subscribers. With significant new technologies coming into the marketplace, the opportunities to differentiate based on the subscriber experience and generate new revenue streams are manifold. However, the journey from connectivity provider to essential provider of high bandwidth Wi-Fi and experiences for the smart, connected home and business will require significant transformation for most CSPs. Our strategy is to position Calix as the essential provider of platforms and services that enable this transformation. The principal elements of our strategy are:

**Focus on Our Strategic Platforms and Solutions** – Our strategy centers on increasing the market adoption of our three strategic platforms - Calix Cloud<sup>®</sup>, EXOS<sup>®</sup> (Experience eXtensible Operating System) and AXOS<sup>®</sup> (Access eXtensible Operating System).

- Calix Cloud is a role-based analytics platform that leverages network data and subscriber behavioral data to deliver analytics and intelligence to communications professionals via role-specific dashboards. Calix Cloud provides the subscriber analytics that enable a CSP to deliver targeted marketing, services and experiences to build customer intimacy and loyalty. Calix Cloud currently includes Calix Marketing Cloud for CSP marketing teams and Calix Support Cloud for CSP customer support teams.
- EXOS is a carrier class smart home and business operating system that supports residential, business and mobile subscribers. EXOS, coupled with our market leading GigaSpire<sup>®</sup> premises systems, provides a unique “service enablement platform” that is designed for mastering and monetizing the complexity of the subscriber edge. EXOS enables CSPs to elevate every aspect of their business by deploying smart home and business services and generate new revenue streams.
- AXOS is an operating system for access networks that allows a service provider to deliver all services on a single, elastic, converged access network that is always on, simple to operate and quick to deploy. AXOS, coupled with our E-Series systems, provides a unique platform for the SDA network that enables CSPs to transform their business processes and deliver new services at DevOps speed. Armed with AXOS, CSPs can simplify their network operations, their network architectures and their business models.

**Extend Portfolio of Calix Services** – Our services team helps CSPs define their transformation strategy, build new skills, implement new technologies and deploy new subscriber services. Calix Services address a CSP's entire network and service delivery lifecycle. Our service offerings include managed services for Remote Network Monitoring, or RMS, as well as deployment enablement services to help CSPs accelerate and streamline network and premises implementation projects. We also offer customer success and professional services that are critical for driving adoption of our strategic platforms. These services allow CSPs to benefit directly from our experience working with over a thousand service providers to optimize their operations and leverage our advanced analytics to improve the operational efficiency of their teams.

**Engage Directly with Customers** – Calix continues to invest in our direct sales capabilities to ensure that we engage deeply with our customers to help them understand the differentiable value that our platforms provide. As an innovator and a market leader, it is important that our sales and solution engineering resources continually drive the adoption of our strategic platforms. As we deploy new solutions, we are building the expertise of our team by adding specialized resources with deep expertise in areas such as marketing, cloud platforms and network operations. Our direct model is complemented with selective programs for Calix channel partners who have established local market expertise, demonstrated the ability to generate new market opportunities and support sales of cutting-edge technologies.



**Expand Customer Footprint Across Our Expanded Total Addressable Market** – In 2019, we added over 100 new customers spanning CSPs of all types. Our diverse and growing customer footprint is a critical source of our growth as we expand our portfolio and sell additional platforms to both new and existing customers. Our platforms are dramatically expanding our total addressable market, and as such, we intend to continue to engage emerging providers that are creating entirely new customer segments, including fiber overbuilders, utilities and municipalities. We will also build on our recent momentum in penetrating service provider segments where our current share is relatively low such as cable MSOs, large CSPs and international markets.

**Pursue Strategic Relationships** – We expect to continue to pursue strategic technology and distribution relationships, alliances and acquisitions that help us align with CSPs' strategic priorities. We continue to invest to ensure interoperability across the ecosystems that support our customers' most critical business processes through our partner programs. We continue to work with current ecosystem partners while exploring a range of new partnerships to expand the services available on our platforms. By adding new solutions to our platform ecosystem, Calix is significantly enhancing the value that our platforms deliver to CSPs and their subscribers.

### **Portfolio Overview**

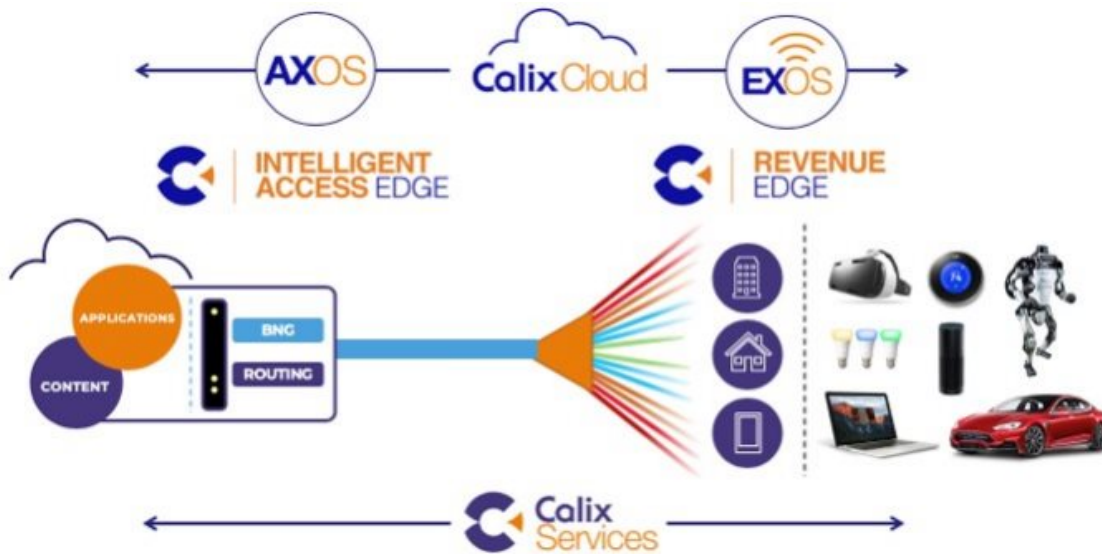
By embracing open, modular, standards-based strategies, we provide intelligence and flexibility across a CSP's entire network – from their data centers to their subscribers' connected devices. Calix platforms are designed to provide our customers the agility that they need to offer the managed services that their subscribers demand. While we continue to support our non-AXOS and non-EXOS systems and our traditional cloud and software products, we are focused on driving the evolution and market penetration of our strategic platforms and services.

In 2019 we introduced two strategic solutions to make it easier for CSPs to quickly adopt the Calix platforms, systems and services:

- **The Revenue EDGE** is a subscriber experience solution designed to transform CSP business models. The Revenue EDGE builds on the powerful EXOS platform and GigaSpire family by integrating real-time subscriber insights via Calix Cloud to enable CSPs to deploy new revenue-generating services and applications.
- **The Intelligent Access EDGE** is an SDA solution that consolidates edge routing, subscriber management, aggregation, and Optical Line Terminal, or OLT, functionality, dramatically simplifying network architectures and operations. By incorporating AXOS, CSPs can future proof their fiber networks and deploy the right technology at the right time to optimize their capital investments.

The Calix portfolio allows for a broad range of subscriber services to be provisioned and delivered over a single unified network. These systems can deliver voice and data services, advanced broadband services, mobile broadband as well as high-definition video and online gaming. Our goal is to help CSPs simplify their network operations, network architectures and business operations while enabling them to offer new services. Our premises systems allow CSPs to master the complexity of the smart, connected home and offer new services to differentiate through the delivery of an amazing subscriber experience. Furthermore, our goal is to help CSPs elevate every aspect of their business – their brand, their service quality, their subscriber experience and their revenue streams.

Representation of how Calix platforms and services support a CSP's entire network:



**The Revenue EDGE**

Calix understands that CSPs need to create and maintain a unique brand image and generate revenue streams that build on their strategic position as the preferred home connectivity provider. The growing complexity at the “subscriber edge” represents a significant opportunity for CSPs to create new revenue streams. The Revenue EDGE is an end-to-end solution that encompasses the capabilities that a CSP needs to offer new services that monetize the complexity of the subscriber edge. Successful CSPs recognize that subscribers are not all the same and leverage data-driven insights to match services with specific subscriber needs. Because CSPs can deliver and manage every Revenue EDGE service and application for the subscriber, they can eliminate the complexity and performance issues that typically impact services such as Wi-Fi, network security, parental controls and home automation. In short, with the Revenue EDGE, CSPs can now offer a value proposition that “over-the-top” players and consumer solutions simply cannot match.

Representation that depicts the components of the Revenue EDGE Solution (Foundation and Suites):



**Revenue EDGE Insights**

We believe that the company with the best data and insights will win in their market. Calix Support Cloud and Calix Marketing Cloud deliver real-time analytics and insights to enable CSPs to provide a seamless experience tailored to the ever evolving needs of their subscribers. The ability to deliver these experiences is increasingly a critical success factor for CSPs.

**Calix Support Cloud** – Calix Support Cloud provides customer support/care teams with data and analytics that take the guess work out of the broadband and Wi-Fi performance troubleshooting process. With Calix Support Cloud, customer support professionals can analyze a subscriber’s in-home experience to identify broadband and Wi-Fi issues and address many issues without requiring field technician intervention. With Calix Support Cloud, leading CSPs are leveraging machine learning and predictive analytics to proactively address issues before they impact the subscriber experience and reduce support call volumes, call times, “truck rolls” and operational costs.

**Calix Marketing Cloud** – Calix Marketing Cloud is designed for service provider marketing teams who want to leverage real-time data and analytics to be more effective and efficient in their marketing efforts. Calix Marketing Cloud includes role-based dashboards and analytics that provide insights that help marketing teams understand and target subscribers based on their needs and behaviors. CSPs who leverage Calix Marketing Cloud have experienced dramatic improvements in marketing return on investment, or ROI, and revenue growth.

**EXOS Platform and Revenue EDGE Systems**

**EXOS Platform** – EXOS is a carrier class premises operating system and software platform that supports residential, business and mobile subscribers. EXOS is the first premises operating system that is designed to help CSPs elevate every aspect of their business by rapidly deploying new services for the smart, connected home and business. All GigaSpire and GigaMesh® systems are powered by EXOS. EXOS incorporates a software model that is standards-based, fully abstracted from the hardware and always-on. Thanks to the unique architecture of EXOS, CSPs can offer new subscriber services and master the complexity of the subscriber edge. Armed with EXOS, CSPs can select and rapidly deploy services such as cloud-enabled voice services, network security and parental controls. When combined with these capabilities, EXOS offers a unique and powerful services enablement platform.

Representation that summarizes the primary benefits delivered by EXOS:



EXOS is architected to abstract software functionality from the underlying system-on-chip in premises gateways. This architecture simplifies software updates and streamlines operational processes. The EXOS abstraction layer also ensures the delivery of a consistent subscriber experience regardless of the specific hardware deployed to subscribers. EXOS leverages Linux containers that provide flexibility to CSPs when they deploy application packages to create new revenue streams. This “containerized” architecture also ensures that new applications may be deployed without the requirement to regression test the entire applications portfolio running on the system. This approach accelerates time to market for new services.

The EXOS management plane is decoupled and centralized, enabling CSPs to manage all applications simultaneously, even if applications are installed independently. The EXOS architecture ensures that subscribers receive an “always on” service and benefit from application updates without the need to “re-boot” their premises systems or schedule service visits. The

Microservices Aggregation Platform that supports EXOS captures data from every system or activity across a subscriber base. As CSPs deploy EXOS they can leverage this data for performance analytics, subscriber experience insights, marketing, maintenance and the application of artificial intelligence for predictive modeling.

### Revenue EDGE Systems

**GigaSpire BLAST Systems** – GigaSpire BLAST systems are powered by EXOS and provide industry leading Wi-Fi coverage and enable industry leading application scalability. With GigaSpire BLAST systems, CSPs can elevate their brand and offer new revenue generating experiences. The Calix GigaSpire BLAST systems offer:

- Industry leading Wi-Fi performance and coverage with the latest Wi-Fi 6 technology
- Always-on operation, that reduces service disruptions
- Advanced instrumentation and analytics to enable optimal performance for all connected devices

GigaSpire BLAST systems are available in a range of models that provide optimal performance across a range of subscriber use-cases. CSPs can choose from multiple Wi-Fi antenna configurations and form factors that offer cost and performance profiles that address differences in home size and subscriber device usage. Calix will continue to evolve this portfolio to ensure that CSPs can meet changing subscriber requirements.

**GigaMesh** – The Calix GigaMesh is a high-performance Wi-Fi satellite that enables ubiquitous Wi-Fi in every part of the home. The GigaMesh is powered by EXOS and optimized for interoperability with GigaSpire BLAST Systems.

Representation of the GigaSpire BLAST systems:



### EDGE Services

Every Revenue EDGE system provides foundational services that elevate the subscriber experience. Foundational managed services and applications include managed Wi-Fi, Alexa Voice Services, Broadband Performance Testing and Marketing Campaign Delivery. The intuitive CommandIQ™ mobile application puts control of the home experience directly in the hands of subscribers.

**CommandIQ** – CommandIQ is a mobile application that provides the subscriber with a comprehensive view of all smart devices installed in their network. CommandIQ features a menu of useful options that enable the end subscriber to manage and tune their home experience by running speed tests, enabling guest Wi-Fi, adjusting parental controls and enabling network security. CSPs can also elevate their brand by skinning the application with their brand colors and logo.

**Alexa Voice Services** – The GigaSpire family includes Alexa-enabled systems that enable the use of any standard Alexa skill as well as Calix custom skills that provide information on network speed, device count, bandwidth-intensive devices, device performance and recently connected devices.

**Advanced Managed Wi-Fi** – CSPs can move ahead of their competition by being first to their market with Wi-Fi 6. More importantly, they can ensure the delivery of an amazing experience by leveraging Calix Cloud to manage and optimize the experience of every subscriber.

**Broadband Performance Testing** – CSPs can ensure that their network is delivering advertised performance levels with the Calix Broadband Performance testing solution that is delivered via EXOS-powered GigaSpire and Calix Support Cloud. CSPs can also leverage these capabilities to ensure compliance with FCC testing requirements.

**Marketing Campaign Delivery** – CSPs can utilize the marketing campaign delivery capability included with Calix Marketing Cloud to deliver targeted messages directly to the CommandIQ mobile application. This capability opens up an entirely new channel for communicating with subscribers regarding new services, customer service updates and special promotions.

### **Revenue EDGE Enablement**

Revenue EDGE Enablement resources are designed to ensure that CSP teams are fully enabled to deploy, manage and monetize the services that they provide to subscribers. EDGE Enablement resources help CSPs minimize time to market and maximize ROI. These resources include marketing content, training programs, success services and professional services. Each component of the EDGE Enablement resources addresses an aspect of CSP readiness to deliver an exceptional subscriber experience.

### **Revenue EDGE Suites**

ProtectIQ™ and ExperienceIQ™ are the first two application suites developed specifically for the Revenue EDGE Solution. The EXOS scalable architecture allows for applications to be independently developed, tested and released. This approach gives CSPs a simple way to introduce new services to subscribers and a consistent, repeatable approach to deploy and manage these applications. These solutions enable CSPs to build their brand, generate new revenue and manage and secure the smart, connected home. More importantly, the Revenue EDGE Solution enables a CSP to offer new services that they can actively manage for the subscriber. By offering capabilities such as parental controls and home network security as a managed service, the CSPs can reduce the complexity of the subscriber experience and expand the value that they are delivering to the subscriber.

**ProtectIQ** – ProtectIQ allows CSPs to protect and manage subscriber networks from a host of threats such as viruses, malware, intrusion and phishing, hijacking, spyware, adware and malware websites and to alert subscribers when unwanted visitors try to enter the home network. As viruses and malware become increasingly sophisticated, home networks require an equally innovative security solution. ProtectIQ enables the CSP to not only deploy the latest security software but actively manage it on behalf of a subscriber.

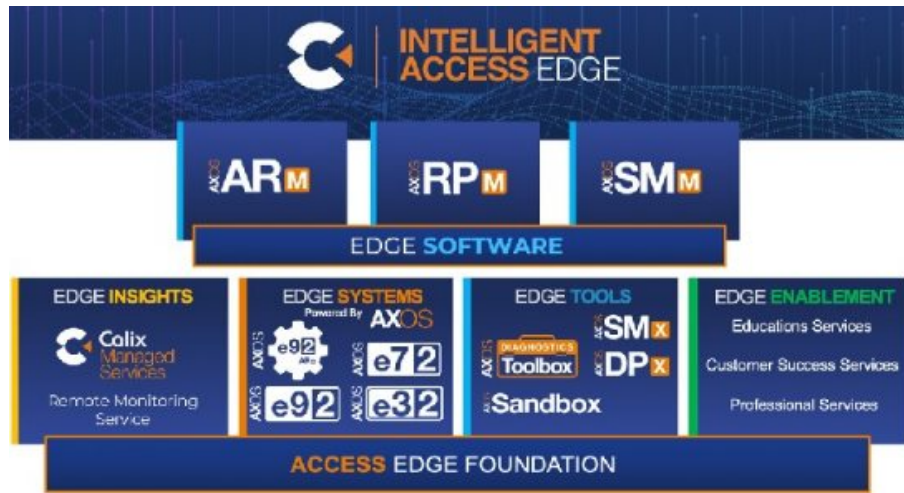
**ExperienceIQ** – ExperienceIQ provides industry leading parental controls, allowing subscribers to manage screen time, content and access from the CommandIQ application. As new applications and devices proliferate, many subscribers demand deeper control over who can access the content delivered to the people who are accessing their home networks. ExperienceIQ enables the CSP to guide the subscriber and ensure that the control settings are optimized to meet the subscriber's objectives.

### **The Intelligent Access EDGE**

The Intelligent Access EDGE solution redefines the access edge of the network by simplifying its architecture and operations. By collapsing multiple network elements into a single system in the access network and using specialized software modules to add and remove functionality, the solution dramatically reduces the total cost of ownership, or TCO, and the time to market for new services.

From a single point in the network, the Intelligent Access EDGE solution enables CSPs to maintain all of their services and manage their entire network with one common service model, while reducing network operational expenses by as much as 40%. Enhanced platform analytics and automation help to optimize network planning, automate critical tasks and accommodate future capabilities and services. The Intelligent Access EDGE solution is built on the award-winning Calix AXOS software platform.

Representation of the Intelligent Access EDGE solution:



### *Access EDGE Insights*

The Intelligent Access EDGE Insights enable CSPs to more effectively monitor network performance and more efficiently address performance issues. Access EDGE Insights are delivered through the Calix Remote Monitoring Service, which is a cloud-based managed service offering that provides CSPs with better visibility and analytics to rapidly solve network problems that can impact subscriber experience. This cloud-based platform automatically associates and correlates disparate alarms, reducing the number of incidents that an operations team needs to analyze. The service provides continuous network alarm monitoring using the Calix Intelligent Remote Monitoring Platform and enables rapid isolation and repair through automated analysis and notification with triage and root cause of incidents affecting subscribers.

### *AXOS Platform and Access EDGE Systems*

**AXOS Platform** – AXOS is a software platform built for the specific needs of the access network. The AXOS platform is an architecture built to leverage the best of data center software design and network virtualization across the challenging and variable environment of the access network. With an always-on architecture and consistent provisioning services, a CSP can leverage AXOS to deliver all services on a single, elastic, converged access network that is always on. AXOS is the only access platform with a portfolio of systems that will power networks built on all PON technologies - GPON, XGS-PON, 10G EPON and NG-PON2. With our everyPON strategy, service providers are not limited to choosing a specific PON technology to deliver the services that run on their networks. With AXOS, they can future proof their fiber networks and deploy the right technology at the right time to optimize their capital investments. Over 250 Calix customers are already deploying AXOS to simplify their operations, network and business models.

Representation that summarizes the primary benefits delivered by AXOS:



We believe AXOS offers a revolutionary way for CSPs to operate their access networks and accelerate their business transformation. AXOS achieves this because it is architected with discrete software modules that operate on top of a unique hardware abstraction layer that preserves software independence from the underlying hardware. This architecture simplifies upgrades to non-events, supports stateful, self-healing operation and facilitates virtualization of processes and services. All components within AXOS utilize standards-based YANG data models to represent the operational functions and the NETCONF protocol that enable AXOS-powered systems to fit into any open SDN orchestration and control framework. Open, published APIs also allow customers to directly program unique network applications and services.

The AXOS platform removes the complexity of network deployments by reducing the need to utilize middleware to integrate costly hardware and software. AXOS offers CSPs a path to the simplified, intelligent, unified access network that can accelerate time-to-revenue, increase service velocity, eliminate service disruptions and reduce total cost of ownership. As a result, CSPs can simplify their business models and focus investment and resources on revenue generating services and functions.

**Access EDGE Systems** – AXOS is implemented in our E-Series family of modular, non-blocking systems including the E9-2™, E7-2®, E3-2®, E3-16F® and E5-16F®. By offering AXOS on the entire E-Series family of systems, Calix enables our customers to meet a wide variety of deployment scenarios. The Calix Access system portfolio is designed for high availability and purpose-built for the demands of access network deployments. Our access systems are built and tested to meet or exceed network equipment-building system standards, which are a set of safety, spatial and environmental design guidelines for communications equipment. Our products are highly compatible and designed to be easily integrated into the existing operational and management infrastructure of CSP access networks.

AXOS E-Series systems are capable of supporting both centralized and decentralized network architectures that range from the data center edge, central office or headend to the remote cabinet or multiple dwelling unit.

Representation of the Intelligent Access EDGE Systems:



### Access EDGE Tools

The AXOS Access EDGE tools are a set of foundational capabilities that enable a network operations team to continuously evolve and efficiently manage their network. AXOS Sandbox, Services Management Connector, or SMx, DOCSIS Provisioning Connector, or DPx, and the AXOS Diagnostic Toolbox provide all of the core functionality that an operations team requires to add new services, improve operational efficiency and assess network performance. Armed with this tools set, an operations team can manage the full life cycle of their network services.

**AXOS Sandbox** – AXOS Sandbox is a virtual testing environment that improves service introduction by eliminating the need for physical lab systems. Service providers can accelerate service delivery by reducing the time needed for lab testing, Business Support System, or BSS, and Operations Support System, or OSS, integration and software certification by deploying virtual instances of AXOS systems. AXOS Sandbox runs the actual production software release of each AXOS system.

**Services Management Connector** – The SMx connector is a network services domain manager that provides subscriber and services provisioning via a GUI interface. SMx provides REST/JSON northbound interface with integrated tools like SWAGGER for rapid back-office integration.

**DOCSIS Provisioning Connector** – The DPx connector is a virtualized DOCSIS Connector for PON networks that enables seamless SDN transition. DPx implements a microservices architecture designed to automate service delivery and management on anyPON and anyPHY into DOCSIS back office systems. DPx eliminates the need for custom OSS integration.

**AXOS Diagnostics Toolbox** – The AXOS Diagnostic Toolbox is an integrated set of network diagnostic tools such as Wireshark, TCP Dump and Video Channel Analyzer that enables remote management and troubleshooting of the access network. These tools help to reduce or eliminate costly truck rolls and enable network operations teams to ensure or restore high-quality services as quickly as possible.

### Access EDGE Enablement

Access EDGE Enablement services are designed to ensure CSP teams are fully enabled to deploy and manage next generation networks. Calix offers a range of training courses and success and professional services to assist CSPs in every domain of network management from strategy to deployment and management.

### Access EDGE Software

The AXOS modular architecture allows service providers to choose from a traditional Layer 2 network architecture or to build simplified layer 3 network architectures by consolidating key subscriber-related functions into a single solution with optional AXOS modules:

**AXOS Routing Protocol Module (RPM)** – RPM is designed for CSPs who are seeking to bring Layer 3 intelligence to their access network, but already have an MPLS solution or do not need an MPLS solution. RPM provides the benefits of a routed network including the security and ability to move caching and other edge compute closer to the subscriber without impacting



other functions in the network. CSPs can reduce provisioning overhead costs, failure groups, transport costs and simplify service and subscriber turn up.

**AXOS Advanced Routing Module (ARm)** – ARm is designed for CSPs seeking to bring to bring Layer 3 intelligence to their access network including MPLS capabilities. ARm provides the benefits of a routed network including the security and ability to move caching and other edge compute closer to the subscriber without impacting other functions in the network. CSPs can reduce provisioning overhead costs, failure groups, transport costs and simplify service and subscriber turn up.

**AXOS Subscriber Management Module (SMm)** – SMm is a software module that brings subscriber management capabilities to the access network such as authentication, authorization, accounting of subscriber sessions, address assignment, policy management and Lawful Intercept, which is short for Lawfully Authorized Electronic Surveillance for Internet Access and Services. With SMm, CSPs get unprecedented visibility into the traffic entering the network, enabling subscriber management and the use of policy and filters to prevent network attacks.

#### **Traditional Products**

Calix continues to support and sell our portfolio of non-AXOS and non-EXOS systems as well as traditional software and Compass® Cloud products that are widely deployed in customer networks. For many CSPs, the process of operationalizing new systems and transitioning to new products can be lengthy. We expect that these products will continue to be utilized in our customers' networks for many years to come. These products include:

**Calix GigaFamily** – The Calix GigaFamily includes our first generation of carrier-class Wi-Fi gateways. It includes the Calix GigaCenter® and 804 mesh systems. These systems provide 802.11ac Wi-Fi and whole home Wi-Fi services. When deployed in conjunction with the Calix Cloud, the GigaFamily systems provide the capabilities required for a managed Wi-Fi offering that delivers optimized Wi-Fi services to subscribers.

**Non-AXOS E-Series Access Systems and Nodes** – E-Series access systems and access nodes that are designed to support an array of advanced IP-based service and run our EXA operating system. These systems are not supported by AXOS.

**Calix C-Series Multiservice Access Systems** – Designed to support a wide array of basic voice and data services offered by CSPs while also supporting advanced, high-speed, packet-based services such as Gigabit Ethernet, GPON, digital subscriber line, or DSL (including very high-speed DSL 2, or VDSL2) and advanced applications.

**Calix B-Series Access Nodes** – Consist of chassis-based nodes that are designed to support an array of advanced IP-based services offered by CSPs, including Ethernet transport and aggregation, as well as voice, data and video services over both fiber- and copper-based network architectures.

**P-Series Optical Network Terminals and Residential Gateways** – A broad range of non-EXOS customer premises solutions, including optical network terminals, or ONTs, and residential gateways for residential and business use in conjunction with our E-Series, C-Series and B-Series systems.

#### **Calix Services**

The Calix Services team helps CSPs define their strategy, implement new solutions and manage their networks. CSPs choose Calix platforms because of their ability to simplify network management and support an agile service delivery model. Calix Services spans the entirety of the network and service delivery lifecycle. Our expertise, developed over many years of building cutting-edge software platforms and providing critical services to our customers, positions us to be the vendor of choice. Today, the Calix Services team delivers services to CSPs of every size and every type. We are continually expanding our portfolio of service offerings to ensure that our customers realize the full potential of our platforms.

**Calix Professional Services** – Calix offers defined service packages to accelerate network design and deployment, optimize performance and scalability and apply field-proven best practices, processes and tools. Use cases for Calix Professional Services include the collapse of multiple network silos into a single software defined access architecture, the seamless migration to next-generation PON architectures, the deployment of managed whole home Wi-Fi services and smart home services and facilitated OSS/BSS integration services. These offerings optimize CSP end-to-end processes from operations to technology deployment to service lifecycle management.

**Calix Managed Services** – Our managed services feature a cloud-based remote monitoring service that monitors a CSP's end-to-end access network (24 hours a day, 7 days a week) to ensure issues are automatically identified and assessed. This service leverages machine learning technology developed through thousands of Calix Support Services engagements with CSPs to correlate alarms, filter extraneous events and identify critical issues. The service provides incident notifications to CSP team members that include the nature, location and severity of events to help reduce mean time-to-repair.

**Calix Support Services** – Calix offers three tiers of support services – Standard, Essential and Vantage - that ensure software updates, the agility of operational workflows, service uptime and customer experience. Calix support tiers are designed to

provide optimal support to our customers who are adopting our strategic platforms - Calix Cloud, EXOS, and AXOS. Our highest support tier, Vantage, includes our Remote Monitoring service and support from a Calix service director who partners with customers to implement strategies that ensure delivery of an exceptional subscriber experience.

**Calix Education Services** – Calix offers an array of self-service and instructor-led, remote and onsite learning and certifications solutions to help CSPs build the skills required to successfully execute deployments and effectively run next generation networks. Calix offers specific learning paths that are designed to help CSPs enhance the skills of their teams and maximize the value that they derive when they deploy our strategic platforms.

**Calix Success Services** – To ensure that our customers maximize the return on their investments in our software solutions, we offer Calix Success Services. The primary focus of the Success Services engagements is the use of the data and analytics delivered through our Calix Cloud Platform to transform our customers’ business processes. Our Success Services team members leverage their domain expertise in marketing, customer support and operations to help our customers achieve their business objectives. These engagements are typically multi-year (aligned to our cloud subscription terms).

Representation of the Calix Services portfolio:



## Customers

We operate a differentiated customer engagement model that focuses on direct alignment with our customers through sales, service and support. In order to allocate our product development and sales efforts efficiently, we believe that it is critical to target markets, customers and applications deliberately. We have traditionally targeted CSPs, which own, build and upgrade their own access networks and value strong relationships with their systems and software suppliers.

We classify CSPs into large, medium and small based on the number of their broadband subscribers. Large CSPs are those with wide geographic footprints and broadband subscribers of 2.5 million or more. Medium CSPs also operate typically within a wide geographic footprint but are smaller in scale with broadband subscribers that range from 250,000 to 2.5 million. Small CSPs consist primarily of over 1,000 predominantly local independent operating companies, or IOCs, typically focused on a single community or a cluster of communities. They include a growing number of municipalities, electric cooperatives, fiber overbuilders and wireless ISPs. These entities range in size from a few hundred to 250,000 broadband subscribers.

To date, we have focused primarily on CSPs in the North American market. Our existing customers’ networks serve over 100 million subscriber lines. Our customers span all sizes of broadband subscriber count from a few hundred to more than six million. A small sample of our customers includes Allo Communications; CenturyLink, Inc., or CenturyLink; CityFibre Holdings Limited; Cox Communications; Frontier Communications Corporation, or Frontier; Forked Deer Connect, LLC; Gibson Connect, LLC; Sky Cable Corporation; TDS Telecommunications LLC; Windstream Holdings, Inc., or Windstream; and Verizon Communications, Inc.

We have a few large customers who have represented a significant portion of our sales in any given period. CenturyLink accounted for 15% of total revenue in 2019, 18% in 2018 and 31% in 2017. No other customer represented more than 10% of total revenue in 2019, 2018 and 2017. In addition, our large customers represented 22% of total revenue in 2019 while our medium and small customers represented 8% and 70%, respectively.

Sales to customers outside the United States represented approximately 14% of our total revenue in 2019, 12% in 2018 and 11% in 2017. Historically, our sales outside the United States were predominantly to customers in the Middle East, Canada, Europe and Caribbean.

### **Customer Engagement Model**

We design, market and sell our Calix Cloud and software platforms, systems and Calix Services predominantly through our direct sales force, supported by marketing and product management personnel. We have expanded this model to include a small number of select channel partners in North America and dozens of international channel partners, who are part of our Fiber Forward™ Partner Program. Our sales effort is organized either by named accounts or regional responsibilities. Account teams comprise sales managers, supported by solution engineers and account managers, who work to target and sell to existing and prospective CSPs. The sales process includes analyzing CSPs' existing networks and identifying how they can utilize our products and services within their networks. Even in circumstances where a channel partner is involved, our sales and marketing personnel are often selling side-by-side with the channel partner. We believe that our direct customer engagement approach provides us with significant differentiation in the customer sales process by aligning us more closely with our customers' changing needs.

### **Research and Development**

Continued investment in research and development is critical to our business. Our research and development team is composed of engineers with expertise in software and cloud platforms, optics, wireless and hardware. Increasingly, our engineers are focused on enhancements to our platforms. Our teams of engineers are located in our San Jose and Petaluma facilities located in California; our Minneapolis, Minnesota facility and our Nanjing, China facility. We also outsource a portion of our software development to domestic and international third parties. Our research and development efforts are also extended by our co-development partnerships with third-party developers such as Infosys whereby we are able to utilize their substantially larger product development teams to bring cutting edge, software-based products to market while creating new revenue opportunities for both parties. Our research and development team is responsible for designing, developing and enhancing our Cloud and software platforms and systems, performing product and quality assurance testing and ensuring the compatibility of our products with third-party hardware and software products. We have made significant investments in the Calix portfolio. We intend to continue to dedicate significant resources to research and development to develop, enhance and deliver new platform features and capabilities, including investment in innovative technologies that support our business strategy.

### **Manufacturing**

We rely substantially on CMs, ODMs and other third-party partners for the supply and distribution of our products. We work closely with these third parties to provide hardware system design, source and procure materials, manufacture and deliver our products. Our manufacturing organization consists primarily of supply chain managers, new product introduction personnel and test engineers. We tightly integrate our supply chain management and new product introduction activities with the activities outsourced to these third parties. We have made significant changes to our supply chain to align to our platform strategy and through 2019 the changes were accelerated by the imposition by the U.S. government of tariffs on goods imported from China. Such changes include the transition of manufacturing previously conducted in China to three different manufacturing partners outside China, increased leveraging of ODM partners for hardware systems design and management of raw materials used for manufacture and transition of global supply chain operations and activities to geographies outside of China, including Taiwan and Vietnam, to mitigate the impact of the U.S. tariffs. Our relationships with our CMs and ODMs allow us to decrease new product introduction time, conserve working capital, reduce product costs and minimize delivery lead times while maintaining high product quality. Order fulfillment is performed by Pegasus Logistics Group, Inc. located in Texas. We also qualify and utilize other vendors for various portions of our supply chain from time to time, including order fulfillment of our circuit boards, optics and cabinets. This model allows us to operate with lower inventory levels while maintaining the ability to scale quickly to handle increased order volume.

Product reliability is essential for our customers, who place a premium on continuity of service for their subscribers. We perform rigorous quality control testing to help ensure the reliability of our systems. Our internal manufacturing organization designs, develops and implements complex test processes to help ensure the quality and reliability of our products.

### **Seasonality**

Fluctuations in our revenue occur due to many factors, including the varying budget cycles and seasonal buying patterns of our customers. More specifically, our customers tend to spend less in the first fiscal quarter as they are finalizing their annual capital spending budgets, and in certain regions, customers are also challenged by winter weather conditions that inhibit outside fiber deployment.

## Intellectual Property

Our success depends upon our ability to protect our core technology and intellectual property. To accomplish this, we rely on a combination of intellectual property rights, including patents, trade secrets, copyrights and trademarks as well as customary contractual protections. In addition, we generally control access to and the use of our proprietary technology and other confidential information. This protection is accomplished through a combination of internal and external controls, including contractual protections with employees, contractors, customers and partners, and through a combination of U.S. and international intellectual property laws.

As of December 31, 2019, we held 125 U.S. patents and had three pending U.S. patent applications. One of the U.S. patents is also covered by granted international patents in three countries. As of December 31, 2019, we had no pending international patent applications. U.S. patents generally have a term of twenty years from filing. We have added to our patent portfolio since our inception. The remaining terms on the individual patents vary from five months to 17 years.

We rely on intellectual property laws as well as nondisclosure agreements, licensing arrangements and confidentiality provisions to establish and protect our proprietary rights. U.S. patent, copyright and trade secret laws afford us only limited protection, and the laws of some foreign countries do not protect proprietary rights to the same extent. Our pending patent applications may not result in issued patents, and the issued patents may not be enforceable. Any infringement of proprietary rights could result in significant litigation costs. Further, any failure by us to adequately protect our proprietary rights could result in competitors offering similar products, resulting in the loss of our competitive advantage and decreased sales.

We believe that the frequency of assertions of patent infringement continues to increase in our industry. In particular, patent holders, including entities and organizations that purchase or hold patents to monetize such rights, assert patent infringement claims as a competitive tactic as well as a source of revenue. Any claim of infringement from a third party, even claims without merit, could cause us to incur substantial costs defending against such claims and could distract our management from operating our business. Furthermore, a party making such a claim, if successful, could secure a judgment that requires us to pay substantial damages. A judgment could also include an injunction or other court order that could prevent us from selling our products. In addition, we might be required to seek a license for the use of such intellectual property, which may not be available on commercially reasonable terms or at all. Alternatively, we may be required to develop non-infringing technology, which would require significant effort and expense and may ultimately not be successful.

## Competition

The communications equipment market is highly competitive. Competition in this market is based on any one or a combination of the following factors:

- functionality;
- price;
- existing business and customer relationships;
- the ability of products and services, including turnkey professional services capabilities, to meet customers' immediate and future network requirements;
- product quality;
- installation capability;
- service and support;
- scalability; and
- manufacturing capability.

We compete with a number of companies within markets that we serve, and we anticipate that competition will intensify. Suppliers with which we compete include ADTRAN, Inc., or ADTRAN; Amazon; Casa Systems; Ciena Corporation; Cisco Systems Inc.; CommScope Inc.; DASAN Zhong Solutions, Inc.; Huawei Technologies Co. Ltd.; Juniper Networks Inc.; Nokia Corporation; Plume Design, Inc. and ZTE Corporation. There are also a number of smaller companies with which we compete in various geographic or vertical markets. While most of these smaller competitors lack broad national scale and product portfolios, they can offer strong competition on a deal-by-deal basis. As we expand into adjacent markets, we expect to encounter new competitors. Many of our competitors have substantially greater name recognition, manufacturing capacity and technical, financial and marketing resources as well as better established relationships with CSPs than we do. Many of our competitors have greater resources to develop products or pursue acquisitions and more experience in developing or acquiring new products and technologies and in creating market awareness for their products and technologies. In addition, a number of

our competitors have the financial resources to offer competitive products at below market pricing levels that could prevent us from competing effectively.

## **Employees**

As of December 31, 2019, we employed a total of 763 employees, of which 557 employees were located in the United States. Our employees are not represented by a labor union with respect to their employment with us, except for our French employee who is subject to a collective bargaining arrangement. We have not experienced any work stoppages, and we consider our relations with our employees to be good.

## **Corporate Information**

Calix, Inc., a Delaware corporation, was founded in August 1999. Our principal executive offices are located at 2777 Orchard Parkway, San Jose, California 95134, and our telephone number is (408) 514-3000. Our website address is [www.calix.com](http://www.calix.com). We do not incorporate the information on or accessible through our website into this Annual Report on Form 10-K, and you should not consider any information on, or that can be accessed through, our website as part of this Annual Report on Form 10-K. Calix®, the Calix logo design, AXOS®, Calix Cloud®, CommandIQ™, Compass®, Consumer Connect®, E3®, E5®, E7®, E9™, EXOS®, ExperienceIQ™, Fiber Forward®, GigaCenter®, GigaMesh®, GigaSpire®, ProtectIQ™ and other trademarks or service marks of Calix appearing in this Annual Report on Form 10-K are the property of Calix. Trade names, trademarks and service marks of other companies appearing in this Annual Report on Form 10-K are the property of the respective holders. The SEC maintains a website at [www.sec.gov](http://www.sec.gov) that contains reports, proxy statements and other information regarding issuers that file electronically with the SEC. We post on the Investor Relations page of our website, [www.calix.com](http://www.calix.com), a link to our filings with the SEC free of charge, as soon as reasonably practical after they are filed electronically with the SEC.

## **ITEM 1A. Risk Factors**

*We have identified the following additional risks and uncertainties that may affect our business, financial condition and/or results of operations. Investors should carefully consider the risks described below, together with the other information set forth in this Annual Report on Form 10-K, before making any investment decision. The risks described below are not the only ones we face. Additional risks not currently known to us or that we currently believe are immaterial may also significantly impair our business operations. Our business could be harmed by any of these risks. The trading price of our common stock could decline due to any of these risks, and investors may lose all or part of their investment.*

### ***Risks Related to Our Business and Industry***

***Adverse global economic conditions, geopolitical issues and other conditions that impact our increasingly global operations, including uncertainty around global trade policies and outbreaks of pandemic diseases, could have a negative effect on our business, results of operations and financial condition and liquidity.***

As a global company, our performance is affected by global economic conditions as well as geopolitical issues and other conditions with global reach. In recent years concerns about the global economic outlook have adversely affected market and business conditions in general. Macroeconomic weakness and uncertainty also make it more difficult for us to accurately forecast revenue, gross margin and expenses. Geopolitical issues, such as tariffs and trade policy changes imposed by both the United States and China beginning in late 2018 and further tariffs and other international trade policy changes have resulted in increasing tensions among China, the United States, Canada and other countries and create uncertainty for global commerce. In particular, the United States has referenced the potential imposition of tariffs on imports from other countries where we produce some of our products, such as the recent imposition of tariffs on steel imported from Vietnam. We have incurred substantial costs and diversion of resources as a result of these tariff and trade policy changes. Recently, the uncertainty over the novel coronavirus outbreak in China, which has resulted in government-imposed travel restrictions across a number of countries and closures of numerous business operations in China, may disrupt and delay our and our suppliers' operations in China. Sustained uncertainty about, or worsening of, global economic conditions, geopolitical issues and other conditions with global impact may increase our cost of doing business or disrupt our supply chain operations and may cause our customers to reduce or delay spending and could intensify pricing pressures. Any or all of these factors could negatively affect demand for our products and our business, financial condition and result of operations. Additional risks associated with the impact of the U.S. tariffs on our business and result of operations are described in the below risk factor captioned "If we fail to manage our supply chain effectively, or if the federal government increases the imposition of tariffs to goods imported from countries where we do business, our ability to conduct our business will be materially impaired, which would adversely impact our gross margins and results of operations." Additional risks associated with disruptions to our supply chain are described in the below risk factors captioned "Our business and results of operations may be negatively affected by the coronavirus outbreak that has severely impacted Wuhan, China, which is a primary producer of materials and components for the telecommunications industry" and "Our use of and reliance upon development resources in China may expose us to unanticipated costs or liabilities."

***Our business and results of operations may be negatively affected by the coronavirus outbreak that has severely impacted Wuhan, China, which is a primary producer of materials and components for the telecommunications industry.***

Certain materials and components for the telecommunications industry, such as fiber optics and optical-electronic components, are produced primarily in Wuhan, China, which has been the center of the recent novel coronavirus outbreak reported to have infected more than 68,000 people with more than 1,600 deaths largely in Wuhan and the surrounding Hubei province. Wuhan and the Hubei province have been subject to containment measures implemented by local authorities, including travel restrictions, mandatory quarantine, shutdown of business activities and other measures that have impacted their economy and productivity. Furthermore, restrictions and shutdown of business activities throughout other parts of China, including of factories upon which we rely for materials and components, have been implemented in attempts to contain the transmission of the coronavirus. The continued impact of the novel coronavirus, including as to when these containment measures may be lifted, remains uncertain.

The manufacture of our products requires optical-electronic components and materials sourced from suppliers in China. Although we have limited dependencies on suppliers in Wuhan, the containment measures that began in Wuhan have been expanded to other parts of China and have included factory shutdowns at some of our suppliers. If these containment measures continue for a prolonged period, we may experience a global shortage of such components and materials. Any such shortages may negatively impact our ability to supply products to meet customer requirements, which could materially adversely affect our business and results of operations. Shortages of fiber optics and other materials due to the decreased productivity in Wuhan may delay planned fiber network buildouts by CSPs, which in turn could delay or lower demand for our products.

***We have a history of losses, and we may not be able to generate positive operating income and positive cash flows in the future.***

We have experienced net losses in each year of our existence. We incurred net losses of \$17.7 million in 2019, \$19.3 million in 2018 and \$83.0 million in 2017. As of December 31, 2019, we had an accumulated deficit of \$702.6 million.

We expect to continue to incur significant expenses and cash outlays for research and development associated with our platforms and systems, including our cloud and services operations, investments in innovative technologies, expansion of our product portfolio, sales and marketing, customer support and general and administrative functions as we expand our business and operations and target new customer opportunities, including larger CSPs and cable MSOs as well as additional types of regional and local providers. Given our anticipated growth and the intense competitive pressures we face, we may be unable to adequately control our operating costs or generate positive operating income.

We cannot guarantee that we will achieve profitability in the future. We will have to generate and sustain significant and consistent increased revenue, while continuing to control our expenses, in order to achieve and then maintain profitability. We may also incur significant losses in the future for a number of reasons, including the risks discussed in this “Risk Factors” section and other factors that we cannot anticipate. If we are unable to generate positive operating income and positive cash flows from operations, our liquidity, results of operations and financial condition will be adversely affected. If we are unable to generate cash flows to support our operational needs, we may need to seek other sources of liquidity, including additional borrowings, to support our working capital needs. In addition, we may choose to seek other sources of liquidity even if we believe we have generated sufficient cash flows to support our operational needs. There is no assurance that any other sources of liquidity may be available to us on acceptable terms or at all. If we are unable to generate sufficient cash flows or obtain other sources of liquidity, we will be forced to limit our development activities, reduce our investment in growth initiatives and institute cost-cutting measures, all of which would adversely impact our business and growth.

***Our quarterly and annual operating results may fluctuate significantly, which may make it difficult to predict our future performance and could cause the market price of our stock to decline.***

A number of factors, many of which are outside of our control, may cause or contribute to significant fluctuations in our quarterly and annual operating results. These fluctuations may make financial planning and forecasting difficult. Comparing our operating results on a period-to-period basis may not be meaningful, and you should not rely on our past results as an indication of our future performance. If our revenue or operating results fall below the expectations of investors or securities analysts, or below any guidance we may provide to the market, the market price of our stock would likely decline.

In addition to the other risk factors listed in this “Risk Factors” section, factors that have in the past and may continue to contribute to the variability of our operating results include:

- our ability to predict our revenue and reduce and control our costs;
- our ability to predict product functions and features desired by our customers;
- the impact of global economic conditions;

- our ability to effectively manage our global supply chain operations to mitigate the impact of U.S. tariffs and other trade policies;
- our ability to manage our relationships with our third-party vendors, including CMs, ODMs, logistics providers, component suppliers and development partners;
- our ability to forecast our manufacturing and product supply requirements and manage our inventory;
- our dependence on sole-, single- and limited-source suppliers and supply chain partners, including suppliers located primarily or solely in China where there are a number of factors that could negatively impact our supply chain;
- the capital spending patterns of CSPs and any decrease or delay in capital spending by CSPs due to macro-economic conditions, regulatory uncertainties or other reasons;
- the impact of government-sponsored programs on our customers and the impact to our customers of U.S. federal government disruptions, such as government shutdowns, on such programs;
- intense competition, including market entrants whose products may be substitutes to ours;
- our ability to develop new products or enhancements that support technological advances and meet changing CSP requirements;
- our ability to ramp sales and achieve market acceptance of our new products and CSPs' willingness to adopt and deploy our new products;
- the concentration of our customer base as well as our dependence on a limited number of key customers;
- the length and unpredictability of our sales cycles and timing of orders;
- our lack of long-term, committed-volume purchase contracts with our customers;
- our ability to increase our sales globally and to increase our customer base;
- our exposure to the credit risks of our customers;
- fluctuations in our gross margin;
- the interoperability of our products with CSP networks;
- our products' compliance with industry standards and regulatory requirements that apply to our products and services;
- our ability to expand our international operations;
- our ability to protect our intellectual property and the cost of doing so;
- the quality of our products, including any undetected hardware defects or bugs in our software;
- our ability to manage data security risks as we grow our cloud and software portfolio;
- our ability to estimate future warranty and service obligations;
- our ability to obtain necessary third-party technology licenses at reasonable costs;
- the regulatory and physical impacts of climate change and other natural events;
- the attraction and retention of qualified employees and key management personnel; and
- our ability to maintain proper and effective internal controls.

***Our gross margin may fluctuate over time, and our current level of gross margin may not be sustainable.***

Our current level of gross margin may not be sustainable and may be adversely affected by numerous factors, including:

- changes in customer, geographic or product mix, including the mix of configurations within each product group;
- the pursuit or addition of new large customers;
- increased price competition, including the impact of customer discounts and rebates;
- our ability to effectively manage the transition of our global supply chain operations to mitigate the impact of U.S. tariffs;
- our ability to reduce and control product costs;

- an increase in revenue mix toward services, which typically have lower margins;
- changes in component pricing;
- changes in pricing with our third-party manufacturing partners;
- charges incurred due to inventory holding periods if parts ordering does not correctly anticipate product demand;
- introduction of new products and new technologies, which may involve higher component costs;
- our ability to scale our services business in order to gain desired efficiencies;
- changes in shipment volume;
- changes in or increased reliance on distribution channels;
- potential liabilities associated with increased reliance on third-party vendors;
- increased expansion efforts into new or emerging markets;
- increased warranty costs;
- excess and obsolete inventory and inventory holding charges;
- expediting costs incurred to meet customer delivery requirements; and
- potential costs associated with contractual obligations.

***Our customer base is concentrated, and there are a limited number of potential customers for our products. The loss of any of our key customers, a decrease in purchases by our key customers, pricing pressures or our inability to grow our customer base would adversely impact our revenue and results of operations and any delays in payment by a key customer could negatively impact our cash flows and working capital.***

Historically, a large portion of our sales has been to a limited number of customers. For example, one customer accounted for 15% of total revenue in 2019, 18% of total revenue in 2018 and 31% of total revenue in 2017. However, we cannot anticipate the same level of purchases in the future by these or other customers who have historically comprised a larger percentage of our revenue. Although these customers now comprise a smaller percentage of our revenue, we expect that changes in the CSP market, such as financial difficulties, spending cuts or corporate consolidations that impact purchasing decisions by these customers may continue to adversely impact our revenue, and as a result, revenue from such customers may remain flat or continue to decline. For example, CenturyLink completed a large acquisition at the end of 2017, which disrupted its historical levels of purchases with us and we have continued to experience significantly reduced levels of purchases by CenturyLink compared to historical levels. There is no assurance that purchasing levels by CenturyLink will increase from current levels or return to historical levels, and we expect continued uncertainty as it continues to complete its transition activities and corporate strategies. We have experienced and expect to continue to experience delays or declines in purchases by certain CSPs due to deterioration and weakness in their financial condition. For example, Windstream, another one of our larger customers, filed a voluntary petition for relief under Chapter 11 of the U.S. Bankruptcy Code in February 2019 after it was found in default of certain debt instruments. Another customer, Frontier, recently disclosed that it was exploring alternatives that may include a filing for bankruptcy relief. Any decrease or delay in purchases and/or capital expenditure plans of any of our key customers, particularly if prolonged or sustained, or our inability to grow our sales with existing customers, may have a material negative impact on our revenue and results of operations.

We anticipate that a large portion of our revenue will continue to depend on sales to a limited number of customers. In addition, some larger customers may demand discounts and rebates or desire to purchase their access systems and software from multiple providers. As a result of these factors, our future revenue opportunities may be limited, and we may face pricing pressures, which in turn could adversely impact our margins and our profitability. The loss of, reduction in or pricing discounts associated with, orders from any key customer would significantly reduce our revenue and harm our business. Furthermore, delays in payment and/or extended payment terms from any of our key or larger customers could have a material negative impact on our cash flows and working capital to support our business operations.

Furthermore, over the years the CSP market has undergone substantial consolidation. Industry consolidation generally has negative implications for equipment suppliers, including a reduction in the number of potential customers, a decrease in aggregate capital spending and greater pricing leverage on the part of CSPs over equipment suppliers. Continued consolidation of the CSP industry and among independent local exchange carriers and IOC customers, who represent a large part of our business, could make it more difficult for us to grow our customer base, increase sales of our products and maintain adequate gross margin.



***Our new products are early in their life cycles and subject to uncertain market demand. If our customers are unwilling to adopt our platforms, install our new products or deploy our new services, or we are unable to achieve market acceptance of our new products, our business and financial results will be harmed.***

Our new products are early in their life cycles and subject to uncertain market demand. They also may face obstacles in manufacturing, deployment and competitive response. Adoption of our new products, such as our smart home and business systems, is dependent on the success of our customers in investing, deploying and selling advanced services to their subscribers. Our products support a variety of advanced broadband services, such as high-speed Internet, managed Wi-Fi, connected home, IPTV, mobile broadband, high-definition video and online gaming. If we are unable to ramp sales of our new products, or if subscriber demand for our services does not grow as expected or declines, or our customers are unable or unwilling to invest in our platforms to deploy and market these services, demand for our products may decrease or fail to grow at rates we anticipate.

***If we fail to manage our supply chain effectively, or if the federal government increases the imposition of tariffs to goods imported from countries where we do business, our ability to conduct our business will be materially impaired, which would adversely impact our gross margins and results of operations.***

Until recently, substantially all of our products were manufactured in China. We recently completed activities to realign our supply chain operations to move substantially all of our product manufacturing to locations outside of China. The transition of global supply chain operations is complex, requires significant resources and unanticipated costs, involves significant third-party dependencies and carries numerous risks of disruptions to the manufacture and supply of our products, including exacerbation of the risks associated with our reliance upon third-party manufacturing and supply partners. In particular, in the first quarter of 2019, we experienced product shortages due to production delays associated with the transition of our global supply chain operations that impaired our ability to fulfill customer orders and resulted in revenue below our plan. The manufacture of our products requires components and materials sourced from suppliers in China, including optical-electronic components and materials manufactured in China. We continue to face increasing competition for components and resources from third-party manufacturing and supply partners as more companies seek to transition manufacturing operations out of China due to the ongoing uncertainty of the escalating tariff wars. We may experience further disruptions, product unavailability, delays or unanticipated costs associated with the supply of our products which would adversely affect the demand for our products and have a material adverse effect on our business, gross margins and results of operations if we are unable to manage our supply chain effectively, secure our desired rates for the manufacture and supply of our products with new supply chain partners or if the federal government increases the imposition of tariffs to goods imported from additional countries where we produce some of our products. Additional risks associated with our reliance upon third-party manufacturing and supply partners are described in the below risk factors captioned “*We utilize domestic and international third-party vendors to assist in the design, development and manufacture of certain of our products, and to provide logistics services in the distribution of our products. If these vendors fail to provide these services, we could incur additional costs and delays or lose revenue.*” and “*If we fail to forecast our manufacturing requirements accurately or fail to properly manage our inventory with our contract manufacturers, we could incur additional costs, experience manufacturing delays and lose revenue.*”

***Our business and results of operations may be negatively affected by the coronavirus outbreak that has severely impacted Wuhan, China, which is a primary producer of materials and components for the telecommunications industry.***

Certain materials and components for the telecommunications industry, such as fiber optics and optical-electronic components, are produced primarily in Wuhan, China, which has been the center of the recent novel coronavirus outbreak reported to have infected more than 73,000 people with more than 1,800 deaths largely in Wuhan and the surrounding Hubei province. Wuhan and the Hubei province have been subject to containment measures implemented by local authorities, including travel restrictions, mandatory quarantine, shutdown of business activities and other measures that have impacted their economy and productivity. Furthermore, restrictions and shutdown of business activities throughout China, including of factories upon which we rely for materials and components, have been implemented in attempts to contain the transmission of the coronavirus. The continued impact of the novel coronavirus, including as to when these containment measures may be lifted, remains uncertain.

Although we have limited dependencies on suppliers in Wuhan, the containment measures that began in Wuhan have been expanded throughout China and have included factory shutdowns at some of our suppliers. If these containment measures continue for a prolonged period, we may experience a global shortage of such components and materials. Any such shortages may negatively impact our ability to supply products to meet customer requirements, which could materially adversely affect our business and results of operations. Shortages of fiber optics and other materials due to the decreased productivity in Wuhan may delay planned fiber network buildouts by CSPs, which in turn could delay or lower demand for our products.

***We depend on sole-source, single-source and limited-source suppliers for some key components. If we and our business partners are unable to source these components on a timely or cost-effective basis, we will not be able to deliver our products to our customers.***

We depend on sole-source, single-source and limited-source suppliers for some key components of our products. For example, certain of our application-specific integrated circuit processors and resistor networks are purchased from sole-source suppliers, including certain components sourced solely through suppliers located in China.

Any of the sole-source, single-source and limited-source suppliers upon whom we or our business partners rely could stop producing our components, be subject to tariffs, epidemics or other conditions that disrupt their operations, cease operations or enter into exclusive arrangements with our competitors. For example, we have encountered disruptions in our supply of certain components sourced from China as a result of the recent novel coronavirus outbreak and the continued uncertainty around trade and tariff policies between the U.S. and China. Disruptions of manufacturing activities in China business activities, particularly if prolonged, may adversely affect our ability to obtain components and materials needed to manufacture our products at acceptable prices or at all, which would in turn harm our business and results of operations. We may also experience shortages or delay of critical components as a result of growing demand in the industry or other sectors. For example, growth in electronic and IoT devices, wireless products, automotive electronics and artificial intelligence all drive increased demand for certain components, such as chipsets and memory products, which may result in lower availability and increased prices for such components. The cost of components may also be impacted by regulatory requirements.

In addition, purchase volumes of such components may be too low for Calix to be considered a priority customer by these suppliers, and we may not be able to negotiate commercially reasonable terms for our business needs. As a result, these suppliers could stop selling to us and our business partners at commercially reasonable prices, or at all. Any such interruption or delay may force us and our business partners to seek similar components from alternative sources, which may not be available, or result in higher than anticipated prices for such components. Switching suppliers could also require that we redesign our products to accommodate new components and could require us to re-qualify our products with our customers, which would be costly and time consuming. Any interruption in the supply of sole-source, single-source or limited-source components for our products would adversely affect our ability to meet scheduled product deliveries to our customers, could result in lost revenue or higher expenses and would harm our business.

***We do not have manufacturing capabilities, and therefore we depend solely upon a small number of third-party manufacturing partners to manufacture and supply our products. Consequently, our operations are highly dependent upon our third-party manufacturing partners and our business could be disrupted if we encounter problems with any of these partners.***

We do not have internal manufacturing capabilities and rely upon a small number of third-party manufacturing partners such as CMs and ODMs to supply our products to meet customer needs. Our reliance on a small number of manufacturing partners makes us vulnerable to possible supply and capacity constraints and reduced control over component availability, delivery schedules, quality, manufacturing yields and costs. Our business operations and ability to supply our products are highly dependent upon our manufacturing partners. Accordingly, if we encounter problems or other disruptions in our business with any of these manufacturing partners, our business could be disrupted.

In some cases, we do not have supply contracts with our manufacturing partners and these manufacturers are not contractually obligated to supply products to us for any specific period, in any specific quantity or at any certain price. In addition, we are dependent upon our manufacturing partners' quality systems and controls and the adherence of such systems and controls to applicable standards. If our manufacturing partners fail to maintain levels of quality manufacture suitable for us or our customers, we may incur higher costs and our relationships with our customers may be harmed.

The revenue that our manufacturing partners generate from our orders represent a relatively small percentage of their overall revenue. As a result, fulfilling our orders may not be considered a priority if such manufacturers are constrained in their ability to fulfill all of their customer obligations in a timely manner. In addition, a substantial part of our manufacturing is done in our manufacturers' facilities that are located outside of the United States. We believe that the location of these facilities outside of the United States increases supply risk, including the risk of supply interruptions or reductions in manufacturing quality or controls. Moreover, regulatory changes or government actions relating to export or import regulations, economic sanctions or related legislation, or the possibility of such changes or actions, may create uncertainty or result in changes to or disruption in our operations with our manufacturers.

Additional risks associated with our supply chain operations are described in the above risk factor captioned "*If we fail to manage our supply chain effectively, or if the federal government increases the imposition of tariffs to goods imported from other countries where we do business, our ability to conduct our business will be materially impaired, which would adversely impact our gross margins and results of operations.*"

If any of our manufacturing partners were unable or unwilling to continue manufacturing our products in required volumes and at high quality levels, we would have to identify, qualify and select acceptable alternative manufacturers which could disrupt our ability to maintain continuous supply of product to meet customer requirements. An alternative manufacturer may not be available to us when needed or may not be in a position to satisfy our production requirements at commercially reasonable prices and quality. Any significant interruption in manufacturing, including labor shortages or competition for components,

would require us to reduce our supply of products to our customers, which in turn would reduce our revenue and harm our relationships with our customers.

***We utilize domestic and international third-party vendors to assist in the design, development and manufacture of certain of our products, and to provide logistics services in the distribution of our products. If these vendors fail to provide these services, we could incur additional costs and delays or lose revenue.***

From time to time we enter into agreements for the design, development and/or manufacture of certain of our products in order to enable us to offer products on an accelerated basis. We also rely upon limited third-party vendors for logistics services to distribute our products. If any of these third-party vendors stop providing their services, for any reason, we would have to obtain similar services from alternative sources, which may not be available on commercially reasonable terms, if at all. We also have limited control over disruptions that may occur at the facilities of these third-party partners, such as supply interruptions, labor shortages or design and manufacturing quality failures, quality control issues, and strikes or systems failures that may interrupt transportation and logistics services. In addition, switching development firms or manufacturers could require us to extend our development timeline and/or re-qualify our products with our customers, which would also be costly and time-consuming.

Any interruption in the development, supply or distribution of our products would adversely affect our ability to meet scheduled product deliveries to our customers, or exacerbate delays in customer order fulfillment that have already resulted from recent product unavailability related to the supply chain transition efforts described above, and could result in lost revenue or higher costs, which would negatively impact our margins and operating results and harm our business.

***If we fail to forecast our manufacturing requirements accurately or fail to properly manage our inventory with our third-party manufacturers, we could incur additional costs, experience manufacturing delays and lose revenue.***

We bear inventory risk under our third-party manufacturing arrangements. Lead times for the materials and components that we order through our manufacturers vary significantly and depend on numerous factors, including the specific supplier and market demand for a component at a given time. Lead times for certain key materials and components incorporated into our products are currently lengthy, requiring our manufacturers to order materials and components several months in advance of manufacture, which impacts the lead time for our products.

If we overestimate our production requirements, our manufacturers may purchase excess components and build excess inventory, and we could be required to pay for these excess parts or products and their storage costs. We have in the past had to reimburse our primary CM for certain inventory purchases that have been rendered excess or obsolete. Examples of when inventory may be rendered excess or obsolete include manufacturing and engineering change orders resulting from design changes or in cases where inventory levels greatly exceed projected demand. If we incur payments to our manufacturers associated with excess or obsolete inventory, this may have an adverse effect on our gross margins, financial condition and results of operations.

We have experienced unanticipated increases in demand from customers, which resulted in delayed shipments and variable shipping patterns. If we underestimate our product requirements, our manufacturers may have inadequate component inventory, which could interrupt manufacturing of our products, increase our cost of product revenue associated with expedite fees and air freight and/or result in delays or cancellation of sales.

Furthermore, while we have largely transitioned our global supply chain operations to mitigate the impact of U.S. tariffs imposed on goods imported from China, we have experienced and may continue to experience production interruptions from our manufacturers. Additional risks associated with the transition of our supply chain operations to mitigate the impact of substantial tariffs are described in the above risk factor captioned “*While we have substantially realigned our supply chain operations and transitioned manufacturing out of China to mitigate the impact of the federal government’s imposition of tariffs on goods imported from China, if we fail to manage these changes to our supply chain effectively, or if the federal government increases the imposition of tariffs to goods imported from other countries where we do business, our ability to conduct our business will be materially impaired, which would adversely impact our gross margins and results of operations.*”

***Our business is dependent on the capital spending patterns of CSPs, and any decrease or delay in capital spending by CSPs in response to economic conditions, seasonality, uncertainties associated with the implementation of regulatory reform or otherwise would reduce our revenue and harm our business.***

Demand for our products depends on the magnitude and timing of capital spending by CSPs as they construct, expand, upgrade and maintain their access networks. Any future economic downturn may cause a slowdown in telecommunications industry spending, including in the specific geographies and markets in which we operate. In response to reduced consumer spending, challenging capital markets or declining liquidity trends, capital spending for network infrastructure projects of CSPs could be delayed or canceled. In addition, capital spending is cyclical in our industry, sporadic among individual CSPs and can change on short notice. As a result, we may not have visibility into changes in spending behavior until nearly the end of a given quarter.

CSP spending on network construction, maintenance, expansion and upgrades is also affected by reductions in their budgets, delays in their purchasing cycles, access to external capital (such as government grants and loan programs or the capital markets) and seasonality and delays in capital allocation decisions. For example, our CSP customers tend to spend less in the first quarter as they are still finalizing their annual budgets and in certain regions customers are also challenged by winter weather conditions that inhibit outside fiber deployment, resulting in weaker demand for our products in the first quarter of our fiscal year. Also, softness in demand across any of our customer markets, including due to macro-economic conditions beyond our control or uncertainties associated with the implementation of regulatory reform, has in the past and could in the future lead to unexpected slowdown in capital expenditures by service providers.

Many factors affecting our results of operations are beyond our control, particularly in the case of large CSP orders and network infrastructure deployments involving multiple vendors and technologies where the achievement of certain thresholds for acceptance is subject to the readiness and performance of the CSP or other providers and changes in CSP requirements or installation plans. Further, CSPs may not pursue investment for our new platforms or infrastructure upgrades that require our access systems and software. Infrastructure improvements may be delayed or prevented by a variety of factors including cost, regulatory obstacles (including uncertainties associated with the implementation of regulatory reforms), mergers, lack of consumer demand for advanced communications services and alternative approaches to service delivery. Reductions in capital expenditures by CSPs, particularly CSPs that are significant customers, may have a material negative impact on our revenue and results of operations and slow our rate of revenue growth. As a consequence, our results for a particular period may be difficult to predict, and our prior results are not necessarily indicative of results in future periods.

***Our markets are rapidly changing, which makes it difficult to predict our future revenue and plan our expenses appropriately.***

We compete in markets characterized by rapid technological change, changing needs of CSPs, evolving industry standards and frequent introductions of new products and services. We invest significant amounts to pursue innovative technologies that we believe will be adopted by CSPs. For example, we have invested and continue to invest resources and funds in our cloud and software platforms. In addition, on an ongoing basis we expect to reposition our product and service offerings and introduce new products and services as we encounter rapidly changing CSP requirements and increasing competitive pressures. If we cannot increase sales of our new products and services, keep pace with rapid technological developments to meet our customers' needs and compete with evolving industry standards or if the technologies we choose to invest in fail to meet customer needs or are not adopted by customers in the timeframes that we expect, it would be difficult to forecast our future revenue and plan our operating expenses.

***Government-sponsored programs and U.S. federal government shutdowns could impact the timing and buying patterns of CSPs, which may cause fluctuations in our operating results.***

We sell to CSPs, which include U.S.-based IOCs, which have revenue that is particularly dependent upon interstate and intrastate access charges and federal and state subsidies. The FCC and some states may consider changes to such payments and subsidies, and these changes could reduce IOC revenue. Furthermore, many IOCs use or expect to use government-supported loan programs or grants, such as Rural Utility Service loans and grants, to finance capital spending. These government-supported loan programs and grants generally include conditions such as deployment criteria, domestic preference provisions and other requirements that apply to the project and selected equipment as conditions for funding. Changes to the terms or administration of these programs, including uncertainty from government and administrative change, potential funding limitations that impact our ability to meet program requirements or funding delays due to U.S. federal government shutdowns could reduce the ability of IOCs to access capital or secure funding under government-funded programs to purchase our products and services and thus reduce our revenue opportunities.

Many of our customers were awarded grants or loans under government stimulus programs or funds distributed under the FCC's CAF program, and have purchased and will continue to purchase products from us or other suppliers while such programs and funding are available. However, customers may substantially curtail purchases as funding winds down or as planned purchases are completed.

In addition to the impact of U.S. federal government shutdowns, any changes in government regulations and subsidies could also cause our customers to change their purchasing decisions, which could have an adverse effect on our operating results and financial condition.

***We face intense competition that could reduce our revenue and adversely affect our financial results.***

The market for our products is highly competitive, and we expect competition from both established and new companies to increase. Our competitors include companies such as ADTRAN, Inc.; Amazon; Casa Systems; Ciena Corporation; Cisco Systems Inc.; CommScope Inc.; DASAN Zhong Solutions, Inc.; Huawei Technologies Co. Ltd.; Juniper Networks Inc.; Nokia Corporation; Plume Design, Inc. and ZTE Corporation, among others.

Our ability to compete successfully depends on a number of factors, including:

- the successful development of new products;
- our ability to anticipate CSP and market requirements and changes in technology and industry standards;
- our ability to differentiate our products from our competitors' offerings based on performance, cost-effectiveness or other factors;
- our ability to meet increased customer demand for services and support for their network requirements;
- our ability to gain customer acceptance of our products; and
- our ability to market and sell our products.

The broadband access equipment market has undergone and continues to undergo consolidation, as participants have merged, made acquisitions or entered into partnerships or other strategic relationships with one another to offer more comprehensive solutions than they individually had offered. Examples include Arris Group's acquisition of Pace plc in January 2016; Nokia's acquisition of Alcatel-Lucent in January 2016; the merger of DASAN Zhone Solutions with DASAN Network Solutions in September 2016; and CommScope's acquisition of Arris in April 2019. We expect this trend to continue as companies attempt to strengthen or maintain their market positions in an evolving industry.

Many of our current or potential competitors have longer operating histories, greater name recognition, larger customer bases and significantly greater financial, technical, sales, marketing and other resources than we do and are better positioned to acquire and offer complementary products and services. Many of our competitors have broader product lines and can offer bundled solutions, which may appeal to certain customers. Our competitors may also invest additional resources in developing more compelling product offerings. Potential customers may also prefer to purchase from their existing suppliers rather than a new supplier, regardless of product performance or features, because the products that we and our competitors offer require a substantial investment of time and funds to qualify and install.

Some of our competitors may offer substantial discounts or rebates to win new customers or to retain existing customers. If we are forced to reduce prices in order to secure customers, we may be unable to sustain gross margin at desired levels or achieve profitability. Competitive pressures could result in increased pricing pressure, reduced profit margin, increased sales and marketing expenses and failure to increase, or the loss of, market share, any of which could reduce our revenue and adversely affect our financial results.

***Product development is costly, and if we fail to develop new products or enhancements that meet changing CSP requirements, we could experience lower sales.***

Our industry is characterized by rapid technological advances, frequent new product introductions, evolving industry standards and unanticipated changes in subscriber requirements. Our future success will depend significantly on our ability to anticipate and adapt to such changes, and to offer, on a timely and cost-effective basis, products and features that meet changing CSP demands and industry standards. We intend to continue to invest in developing new products and enhancing the functionality of our platforms, including to reach a broader set of customers. Developing our products is expensive and complex and involves uncertainties, including pricing risks from sourcing sufficient quantities of custom components from limited suppliers on terms which may not be commercially acceptable for us. We may not have sufficient resources to successfully manage lengthy product development cycles. Our research and development expenses were \$81.2 million, or 19% of total revenue, in 2019, \$90.0 million, or 20% of total revenue, in 2018 and \$127.5 million, or 25% of total revenue, in 2017. We believe that we must continue to dedicate a significant amount of resources to our research and development efforts, including increased reliance on third-party partners to maintain our competitive position. As we continue to invest in third-party partners to develop additional features to our product and service platforms, we may experience increased challenges in design, integration and support of such third-party features in our product and service offerings. These investments may take several years to generate positive returns, if ever. Furthermore, certain of our engineering services arrangements impose future payment obligations, in the form of minimum revenue-share payments on the sale of the developed products, that are set based on our expectations of future customer demand associated with the developed products, and require us to make minimum payments whether or not we achieve the desired customer demand. If our forecasts for the developed products fall short of expectations, we may have an asset impairment related to said products, which could adversely affect our financial results. In addition, we may experience design, manufacturing, software development quality, support, marketing and other difficulties that could delay or prevent the development, introduction or marketing of new products and enhancements. If we fail to meet our development targets, demand for our products will decline.

In addition, the introduction of new or enhanced products also requires that we manage the transition from older products to these new or enhanced products in order to minimize disruption in customer ordering patterns, fulfill ongoing customer commitments and ensure that adequate supplies of new products are available for delivery to meet anticipated customer demand. If we fail to maintain compatibility with other software or equipment found in our customers' existing and planned networks, or if our products cannot be effectively deployed in our customer networks to provide desired services, we may face

substantially reduced demand for our products, which would reduce our revenue opportunities and market share. Moreover, as customers complete infrastructure deployments, they may require greater levels of service and support than we have provided in the past. We may not be able to provide products, services and support to compete effectively for these market opportunities. If we are unable to anticipate and develop new products or enhancements to our existing products on a timely and cost-effective basis, our products may become technologically obsolete more rapidly than anticipated over time, resulting in lower sales which would harm our business.

***Our sales cycles can be long and unpredictable, and our sales efforts require considerable time and expense. As a result, our sales are difficult to predict and may vary substantially from quarter to quarter, which may cause our operating results to fluctuate significantly.***

The timing of our revenue is difficult to predict. Our sales efforts often involve educating CSPs about the use and benefits of our products. CSPs typically undertake a significant evaluation process, which frequently involves not only our products but also those of our competitors and results in a lengthy sales cycle. Sales cycles for larger customers are relatively longer and require considerably more time and expense. We spend substantial time, effort and money in our sales efforts without any assurance that our efforts will produce sales. In addition, product purchases are frequently subject to budget constraints, multiple approvals and unplanned administrative, processing and other delays. The timing of revenue related to sales of products and services that have installation requirements may be difficult to predict due to interdependencies that may be beyond our control, such as CSP testing and turn-up protocols or other vendors' products, services or installations of equipment upon which our products and services rely. Such delays may result in fluctuations in our quarterly revenue. If sales expected from a specific customer for a particular quarter are not realized in that quarter or at all, we may not achieve our revenue forecasts and our financial results would be adversely affected.

***Our focus on CSPs with relatively small networks limits our revenue from sales to any one customer and makes our future operating results difficult to predict.***

A large portion of our sales efforts continue to be focused on CSPs with relatively small networks, cable MSOs and selected international CSPs. Our current and potential customers generally operate small networks with limited capital expenditure budgets. Accordingly, we believe the potential revenue from the sale of our products to any one of these customers is limited. As a result, we must identify and sell products to new customers each quarter to continue to increase our sales. In addition, the spending patterns of many of our customers are characterized by small and sporadic purchases. As a consequence, we have limited backlog and will likely continue to have limited visibility into future operating results.

***We do not have long-term, committed-volume purchase contracts with our customers, and therefore have no guarantee of future revenue from any customer.***

We typically have not entered into long-term, committed-volume purchase contracts with our customers, including our key customers which account for a material portion of our revenue. As a result, any of our customers may cease to purchase our products at any time. In addition, our customers may attempt to renegotiate terms of sale, including price and quantity. If any of our key customers stop purchasing our access platforms, systems and software for any reason, our business and results of operations would be harmed.

***Our efforts to increase our sales to CSPs globally, including cable MSOs, may be unsuccessful.***

Our sales and marketing efforts have been focused on CSPs in North America. Part of our long-term strategy is to increase sales to CSPs globally, including cable MSOs. We have devoted and continue to devote substantial technical, marketing and sales resources to these larger CSPs, who have lengthy equipment qualification and sales cycles, without any assurance of generating sales. In particular, sales to these larger CSPs may require us to upgrade our products to meet more stringent performance criteria and interoperability requirements, develop new customer-specific features or adapt our products to meet international standards. Implementing these requirements and features is costly and could negatively impact our operating results, financial condition and cash flows. Moreover, if we are unable to obtain materials at favorable costs, our margins and profitability could be adversely impacted. For example, we work with large CSPs in testing and laboratory trials for our NG-PON2 technology and cable MSO applications. We have invested and expect to continue to invest considerable time, effort and expenditures, including investment in product research and development, related to these opportunities without any assurance that our efforts will produce orders or revenue. If we are unable to successfully increase our sales to larger CSPs, our operating results, financial condition, cash flows and long-term growth may be negatively impacted.

***We are exposed to the credit risks of our customers; if we have inadequately assessed their creditworthiness, we may have more exposure to accounts receivable risk than we anticipate. Failure to collect our accounts receivable in amounts that we anticipate could adversely affect our operating results and financial condition.***

In the course of our sales to customers, we may encounter difficulty collecting accounts receivable and could be exposed to risks associated with uncollectible accounts receivable. We maintain an allowance for doubtful accounts for estimated losses

resulting from the inability or unwillingness of our customers to make required payments. However, these allowances are based on our judgment and a variety of factors and assumptions.

We perform credit evaluations of our customers' financial condition. However, our evaluation of the creditworthiness of customers may not be accurate if they do not provide us with timely and accurate financial information, or if their situations change after we evaluate their credit. Furthermore, some of our international customers operate in countries with developing economies, which from time to time, experience financial crises and become unable to make payments in U.S. dollars. While we attempt to monitor these situations carefully, adjust our allowances for doubtful accounts as appropriate and take measures to collect accounts receivable balances, we have written down accounts receivable and written off doubtful accounts in prior periods and may be unable to avoid additional write-downs or write-offs of doubtful accounts in the future. Such write-downs or write-offs could negatively affect our operating results for the period in which they occur and could harm our cash flow or our financial condition.

***Our products must interoperate with many software applications and hardware products found in our customers' networks. If we are unable to ensure that our products interoperate properly, our business will be harmed.***

Our products must interoperate with our customers' existing and planned networks, which often have varied and complex specifications, utilize multiple protocol standards, include software applications and customizations and products from multiple vendors and contain multiple generations of products that have been added over time. As a result, we must continually ensure that our products interoperate properly with these existing and planned networks. To meet these requirements, we must undertake development efforts, including test protocols, that require substantial capital investment and employee resources. We may not accomplish these development goals quickly or cost-effectively, if at all. If we fail to maintain compatibility with other software or equipment found in our customers' existing and planned networks, we may face substantially reduced demand for our products, which would reduce our revenue opportunities and market share.

We have entered into interoperability arrangements with a number of equipment and software vendors for the use or integration of their technology with our products. These arrangements give us access to and enable interoperability with various products that we do not otherwise offer. If these relationships fail, we may have to devote substantially more resources to the development of alternative products and processes and our efforts may not be as effective as the combined solutions under our current arrangements. In some cases, these other vendors are either companies that we compete with directly or companies that have extensive relationships with our existing and potential customers and may have influence over the purchasing decisions of those customers. Some of our competitors have stronger relationships with some of our existing and other potential interoperability partners, and as a result, our ability to have successful interoperability arrangements with these companies may be harmed. Our failure to establish or maintain key relationships with third-party equipment and software vendors may harm our ability to successfully sell and market our products.

***The quality of our support and services offerings is important to our customers, and if we fail to continue to offer high quality support and services, we could lose customers, which would harm our business.***

Once our products are deployed within our customers' networks, they depend on our support organization to resolve any issues relating to those products. A high level of support is critical for the successful marketing and sale of our products. Furthermore, our services to customers have increasingly broadened to include network optimization, integration and development services and remote monitoring to help our customers deploy our products within their networks. If we do not effectively assist our customers in deploying our products, succeed in helping them quickly resolve post-deployment issues or provide effective ongoing support, it could adversely affect our ability to sell our products to existing customers and harm our reputation with potential new customers. As a result, our failure to maintain high quality support and services could result in the loss of customers, which would harm our business.

***An increase in revenue mix towards deployment services may adversely affect our gross margin.***

In response to greater customer demand for certain professional and support services for our products, we continue to invest and grow our services business while de-prioritizing lower gross margin deployment services. Our services include deployment services, product warranty and support services, customer success services, customer enablement services, managed services to help our customers manage and optimize their networks and education and certification services. Deployment services typically have a lower gross margin than product purchases or other service offerings. We also rely upon third-party subcontractors to assist with some of our professional and support services projects, which generally result in higher costs and increased risk of cost overruns, which can negatively impact our gross margin. Moreover, if we are unable to achieve desired efficiencies and scale as we ramp and develop our services business, we may incur higher than expected costs, which can further adversely impact our gross margin.

***Our products are highly technical and may contain undetected hardware defects or software bugs, which could harm our reputation and adversely affect our business.***

Our products, including our smart home and business systems and our cloud and software platforms, are highly technical and, when deployed, are critical to the operation of many networks. Our products have contained and may contain undetected defects, bugs or security vulnerabilities, which risks may be exacerbated as we continue to expand our cloud and software portfolio. Some defects in our products may only be discovered after a product has been installed and used by customers and may in some cases only be detected under certain circumstances or after extended use. Any errors, bugs, defects or security vulnerabilities discovered in our products after commercial release could result in loss of revenue or delay in revenue recognition, loss of customers and increased service and warranty and retrofit costs, any of which could adversely affect our business, operating results and financial condition. In addition, we could face claims for security and data breach, product liability, tort or breach of warranty. Our contracts with customers contain provisions relating to warranty disclaimers and liability limitations, which may not be upheld. Defending a lawsuit, regardless of its merit, is costly and may divert management's attention and adversely affect the market's perception of us and our products. In addition, if our business liability insurance coverage proves inadequate or future coverage is unavailable on acceptable terms or at all, our business, operating results and financial condition could be adversely impacted.

***Increasing data privacy regulations could impact our business and expose us to increased liability.***

Government and regulatory authorities in the United States and around the world have implemented and are continuing to implement broader and more stringent laws and regulations concerning data protection. For example, in July 2016, the European Commission adopted the EU-U.S. Privacy Shield to replace Safe Harbor as a compliance mechanism for the transfer of personal data from the European Union to the United States. In addition, the General Data Protection Regulation, or GDPR, adopted by the European Parliament became effective in May 2018 to harmonize data privacy laws across Europe. Among other requirements, the GDPR imposes specific duties and requirements upon companies that collect, process or control personal data of European Union residents. Although we currently do not have material operations or business in the European Union, the GDPR regulations could cause us to incur substantial costs in order to expand our business or deliver certain services in the European Union. Furthermore, the GDPR imposes penalties for noncompliance of up to the greater of €20 million or 4% of a company's worldwide revenue; accordingly, any non-compliance with the GDPR could result in a material adverse effect on our business, financial condition and results of operations. In addition, the United Kingdom's pending exit from the European Union creates uncertainty with respect to whether the United Kingdom will enact data protection laws or regulations designed to be consistent with the GDPR. Moreover, the California Consumer Privacy Act became effective in California in January 2020 and provides new data privacy rights for consumers and new operational requirements for companies. The interpretation and application of these data protection laws and regulations are often uncertain and in flux, and it is possible that they may be interpreted and applied in a manner that is inconsistent with our data practices. Complying with emerging and changing laws could cause us to incur substantial costs or require us to change our business practices in a manner adverse to our business.

Concerns about or regulatory actions involving our practices with regard to the collection, storage, processing, use or disclosure of customer information or other privacy related matters, even if unfounded, could damage our reputation and adversely affect operating results. While we strive to provide transparency about our collection, use, disclosure and security over any personal data and to comply with all applicable data protection laws and regulations, the failure or perceived failure to comply may result in inquiries and other proceedings or actions against us by government entities or others, or could cause us to lose customers, which could potentially have an adverse effect on our business.

***Security breaches and data loss may expose us to liability, harm our reputation and adversely affect our business.***

As part of our business operations, we collect, store, process, use and/or disclose sensitive data relating to our business, including in connection with the provision of our cloud services and in our information systems and data centers (including third-party data centers). In some cases, we use third-party service providers for services that may include the collection, handling, processing and/or storage of personal data on our behalf. In addition, we host our customers' subscriber data in third-party data centers in the course of providing services and solutions to our customers through our cloud and smart home and business subscriptions. While we and our service providers apply multiple layers of security to control access to data and use encryption and authentication technologies to secure data from unauthorized access, use, alteration and disclosure, these security measures may be compromised. Malicious hackers may attempt to gain access to our network or data centers; steal proprietary information related to our business, products, employees, and customers; or interrupt our systems and services or those of our customers or others. Although we monitor our networks and continue to enhance our security protections, hackers are increasingly more sophisticated and aggressive, and our efforts may be inadequate to prevent all incidents of data breach or theft. The theft, loss, or misuse of personal data collected, stored or processed by us or our service providers to run our business could result in significantly increased security and remediation costs or costs related to defending legal claims. If we or our service providers do not allocate and effectively implement and manage the resources necessary to maintain adequate security measures, we could be subjected to data loss, unauthorized data disclosure or a compromise or breach of our systems or those of our third-party data centers. As we continue to grow our cloud and software portfolio, risks arising from or related to security breaches or data loss are likely to increase. Any loss of data or compromise of our systems or data centers could result



in a loss of confidence in the security of our offerings, damage our reputation, cause the loss of current or potential customers or partners, lead to legal and regulatory liability and adversely affect our business, financial condition, operating results and cash flows.

***If we experience protracted disruption in functionality or processing capabilities of our newly migrated enterprise resource planning, or ERP, system, we may not be able to effectively transact our business or produce our financial statements on a timely basis and without incurrance of additional costs, which would adversely affect our business, results of operations and cash flows.***

We recently migrated our Oracle ERP system to Oracle's cloud platform. This migration involved significant complexity, requiring us to move and reconfigure all of our current system processes, transactions, data and controls to a new Oracle platform. We have also experienced substantial delays and higher than planned resource needs in our migration efforts due in part to the complexity, volume and scope of changes involved in the migration. Although we conducted design validations and user testing, we currently are and may continue to experience difficulties and delays in transacting our business due to system challenges, limitations in functionality, inadequate change management or process deficiencies in the production use of the system. We are highly dependent upon our ERP system for critical business functions, including order processing and management, supply chain and procurement operations, financial planning and accounting; accordingly, protracted disruption in functionality or processing capabilities of the ERP system could materially impair our ability to conduct our business, process transactions timely or to produce accurate financial statements on a timely basis. If our ability to conduct our business, process transactions or to produce accurate financial statements on a timely basis remains impaired, our business, results of operations and cash flows would be adversely affected.

***Our estimates regarding future warranty or product obligations may change due to product failure rates, shipment volumes, field service obligations and rework costs incurred in correcting product failures. If our estimates change, the liability for warranty or product obligations may be increased, impacting future cost of revenue.***

Our products are highly complex, and our product development, manufacturing and integration testing may not be adequate to detect all defects, errors, failures and quality issues. Quality or performance problems for products covered under warranty could adversely impact our reputation and negatively affect our operating results and financial position. The development and production of new products with high complexity often involves problems with software, components and manufacturing methods. If significant warranty or other product obligations arise due to reliability or quality issues arising from defects in software, faulty components or improper manufacturing methods, our operating results and financial position could be negatively impacted by:

- cost associated with fixing software or hardware defects;
- high service and warranty expenses;
- high inventory obsolescence expense;
- delays in collecting accounts receivable;
- payment of liquidated damages for performance failures; and
- declining sales to existing customers.

***As the market for our products evolves, changing customer requirements may adversely affect the valuation of our inventory.***

Customer demand for our products can change rapidly in response to market and technology developments. Demand can be affected not only by customer- or market-specific issues, but also by broader economic and/or geopolitical factors. We may, from time to time, adjust inventory valuations downward in response to our assessment of demand from our customers for specific products or product lines. The related excess inventory charges may have an adverse effect on our gross margin, financial condition and results of operations.

***If we fail to comply with evolving industry standards, sales of our existing and future products would be adversely affected.***

The markets for our products are characterized by a significant number of standards, both domestic and international, which are evolving as new technologies are developed and deployed. As we expand into adjacent markets and increase our international footprint, we are likely to encounter additional standards. Our products must comply with these standards in order to be widely marketable. In some cases, we are compelled to obtain certifications or authorizations before our products can be introduced, marketed or sold in new markets or to customers that we have not historically served. For example, our ability to maintain Operations System Modification for Intelligent Network Elements certification for our products will affect our ongoing ability to continue to sell our products to Tier 1 CSPs.

In addition, our ability to expand our international operations and create international market demand for our products may be limited by regulations or standards adopted by other countries that may require us to redesign our existing products or develop new products suitable for sale in those countries. Although we believe our products are currently in compliance with domestic and international standards and regulations in countries in which we currently sell, we may not be able to design our products to comply with evolving standards and regulations in the future. This ongoing evolution of standards and differing foreign regulations may directly affect our ability to market or sell our products, particularly with regards to our cloud and software platforms in international markets. Further, the cost of complying with the evolving standards and regulations or the failure to obtain timely domestic or foreign regulatory approvals or certification could prevent us from selling our products where these standards or regulations apply, which would result in lower revenue and lost market share.

***We may be unable to successfully expand our international operations. In addition, we may be subject to a variety of international risks that could harm our business.***

We currently generate most of our sales from customers in North America and have more limited experience marketing, selling and supporting our products and services outside North America or managing the administrative aspects of a worldwide operation. Our ability to expand our international operations is dependent on our ability to create or maintain international market demand for our products. In addition, as we expand our operations internationally, our support organization will face additional challenges including those associated with delivering support, training and documentation in languages other than English. If we invest substantial time and resources to expand our international operations and are unable to do so successfully and in a timely manner, our business, financial condition and results of operations may suffer.

In the course of expanding our international operations and operating overseas, we will be subject to a variety of risks, including:

- differing regulatory requirements, including tax laws, trade laws, data privacy laws, labor regulations, tariffs, export quotas, custom duties or other trade restrictions;
- liability or damage to our reputation resulting from corruption or unethical business practices in some countries;
- exposure to effects of fluctuations in currency exchange rates if, over time, international customer contracts are increasingly denominated in local currencies;
- longer collection periods and difficulties in collecting accounts receivable;
- greater difficulty supporting and localizing our products;
- added costs of supporting cloud infrastructure outside of the United States;
- different or unique competitive pressures as a result of, among other things, the presence of local equipment suppliers;
- challenges inherent in efficiently managing an increased number of employees over large geographic distances, including the need to implement appropriate systems, policies and compensation, benefits and compliance programs;
- limited or unfavorable intellectual property protection;
- risk of change in international political or economic conditions, terrorist attacks or acts of war; and
- restrictions on the repatriation of earnings.

***We engage resellers to promote, sell, install and support our products to some customers in North America and internationally. Their failure to do so or our inability to recruit or retain appropriate resellers may reduce our sales and thus harm our business.***

We engage some value-added resellers, or VARs, who provide sales and support services for our products. We compete with other telecommunications systems providers for our VARs' business and many of our VARs are free to market competing products. Our use of VARs and other third-party support partners and the associated risks of doing so are likely to increase as we expand sales outside of North America. If a VAR promotes a competitor's products to the detriment of our products or otherwise fails to market our products and services effectively, we could lose market share. In addition, the loss of a key VAR or the failure of VARs to provide adequate customer service could have a negative effect on customer satisfaction and could cause harm to our business. If we do not properly recruit and train VARs to sell, install and service our products, our business, financial condition and results of operations may suffer.

***We may have difficulty evolving and scaling our business and operations to meet customer and market demand, which could result in lower profitability or cause us to fail to execute on our business strategies.***

In order to grow our business, we will need to continually evolve and scale our business and operations to meet customer and market demand. Evolving and scaling our business and operations places increased demands on our management as well as our financial and operational resources to effectively:

- manage organizational change;
- manage a larger organization;
- accelerate and/or refocus research and development activities;
- expand our manufacturing, supply chain and distribution capacity;
- increase our sales and marketing efforts;
- broaden our customer-support and services capabilities;
- maintain or increase operational efficiencies;
- scale support operations in a cost-effective manner;
- implement appropriate operational and financial systems; and
- maintain effective financial disclosure controls and procedures.

If we cannot evolve and scale our business and operations effectively, we may not be able to execute our business strategies in a cost-effective manner and our business, financial condition, profitability and results of operations could be adversely affected.

***We may not be able to protect our intellectual property, which could impair our ability to compete effectively.***

We depend on certain proprietary technology for our success and ability to compete. We rely on intellectual property laws as well as nondisclosure agreements, licensing arrangements and confidentiality provisions to establish and protect our proprietary rights. U.S. patent, copyright and trade secret laws afford us only limited protection, and the laws of some foreign countries do not protect proprietary rights to the same extent. Our pending patent applications may not result in issued patents, and our issued patents may not be enforceable. Any infringement of our proprietary rights could result in significant litigation costs. Further, any failure by us to adequately protect our proprietary rights could result in our competitors offering similar products, resulting in the loss of our competitive advantage and decreased sales.

It may become more difficult to adequately protect our intellectual property as we expand our reliance on third parties for the design, development and/or manufacture of our products. While our contracts with such third parties contain provisions relating to intellectual property rights, indemnification and liability, they may not be adequately enforced. Our third-party providers may also be subject to unauthorized third-party copying or use of our proprietary rights.

Despite our efforts to protect our proprietary rights, attempts may be made to copy or reverse engineer aspects of our products or to obtain and use information that we regard as proprietary. Accordingly, we may be unable to protect our proprietary rights against unauthorized third-party copying or use. Furthermore, policing the unauthorized use of our intellectual property is difficult and costly. Litigation may be necessary in the future to enforce our intellectual property rights, to protect our trade secrets or to determine the validity and scope of the proprietary rights of others. Litigation could result in substantial costs, diversion of resources and harm to our business.

***We could become subject to litigation regarding intellectual property rights that could harm our business.***

We may be subject to intellectual property infringement claims that are costly to defend and could limit our ability to use some technologies in the future. The risk of such claims could increase as we expand our product portfolio and increasingly rely on more technologies. Third parties may assert patent, copyright, trademark or other intellectual property rights to technologies or rights that are important to our business. Such claims may originate from non-practicing entities, patent holding companies or other adverse patent owners who have no relevant product revenue, and therefore, our own issued and pending patents may provide little or no deterrence to suit from these entities.

We have received in the past and expect that in the future we may receive communications from competitors and other companies alleging that we may be infringing their patents, trade secrets or other intellectual property rights; offering licenses to such intellectual property; threatening litigation or requiring us to act as a third-party witness in litigation. In addition, we have agreed, and may in the future agree, to indemnify our customers for expenses or liabilities resulting from certain claimed infringements of patents, trademarks or copyrights of third parties. Such indemnification may require us to be financially responsible for claims made against our customers, including costs of litigation and damages awarded, which could negatively impact our results of operations. Any claims asserting that our products infringe the proprietary rights of third parties, with or without merit, could be time-consuming, result in costly litigation and divert the efforts of our engineering teams and management. These claims could also result in product shipment delays or require us to modify our products or enter into

royalty or licensing agreements. Such royalty or licensing agreements, if required, may not be available to us on acceptable terms, if at all.

***Our use of open source software could impose limitations on our ability to commercialize our products.***

We incorporate open source software into our products. Although we closely monitor our use of open source software, the terms of many open source software licenses have not been interpreted by the courts, and there is a risk that such licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to sell our products. In such event, we could be required to make our proprietary software generally available to third parties, including competitors, at no cost, to seek licenses from third parties in order to continue offering our products, to re-engineer our products or to discontinue the sale of our products in the event re-engineering cannot be accomplished on a timely basis or at all, any of which could adversely affect our revenue and operating expenses.

***If we are unable to obtain necessary third-party technology licenses, our ability to develop new products or product enhancements may be impaired.***

While our current licenses of third-party technology generally relate to commercially available off-the-shelf technology, we may from time to time be required to license additional technology from third parties to develop new products or product enhancements either directly or through an ODM partner. These third-party licenses may be unavailable to us or our ODMs on commercially reasonable terms, if at all. The inability to obtain necessary third-party licenses may force us to accept substitute technology of lower quality or performance standards or at greater cost or may increase the time-to-market of our products or product enhancements, any of which could harm the competitiveness of our products and result in lost revenue.

***Our ability to incur debt and the use of our funds could be limited by borrowing base restrictions and restrictive covenants in our loan and security agreement for our revolving credit facility.***

In January 2020 we entered into a Loan and Security Agreement with Bank of America, N.A., or the BofA Loan Agreement, which provides for a revolving credit facility up to a principal amount of \$35.0 million, with the availability of borrowings subject to certain conditions and requirements, including the maintenance of Availability (as defined in the BofA Loan Agreement) of at least \$5.0 million. We are dependent on our existing cash, cash equivalents and borrowings available under our BofA Loan Agreement to provide adequate funds for ongoing operations, planned capital expenditures and working capital requirements for at least the next twelve months. If our financial position deteriorates, our borrowing capacity under the credit facility may be reduced, which would adversely impact our business and growth. In addition, the BofA Loan Agreement includes covenants that place certain restrictions on our ability to, among other things, borrow secured debt or unsecured debt beyond a certain amount, create or suffer to exist any liens, sell or transfer any assets, make distributions, liquidate, dissolve, merge, amalgamate, combine or consolidate, or become a party to certain agreements restricting our ability to incur or repay debt, grant liens, make distributions or modify loan agreements, in each case subject to certain exceptions. Failure to maintain these covenants can limit the amount of borrowings that are available to us, increase the cost of borrowings under the facility, and/or require us to make immediate payments to reduce borrowings.

Given our current financial position and history of operating losses, it is possible that we may fail to meet the minimum levels required by the financial covenants, which would constitute an event of default under the BofA Loan Agreement. Events beyond our control could have a material adverse impact on our results of operations, financial condition or liquidity, in which case we may not be able to meet our financial covenants. For example, prior to the BofA Loan Agreement, we were party to a loan agreement with Silicon Valley Bank, or the SVB Loan Agreement, that provided us a revolving credit facility based on a customary accounts receivable borrowing base, subject to certain exceptions and conclusions. During the term of the SVB Loan Agreement, we were not able to meet the financial covenants in several of the quarters due to variability in our results of operations and financial position and had to request waivers and amendments to the SVB Loan Agreement to avoid an event of default. The BofA Loan Agreement covenants may also affect our ability to obtain future financing and to pursue attractive business opportunities and our flexibility in planning for, and reacting to, changes in business conditions. These covenants could place us at a disadvantage compared to some of our competitors, who may have fewer restrictive covenants and may not be required to operate under these restrictions.

***The United Kingdom's withdrawal from the European Union may have a negative effect on global economic conditions, financial markets and our business.***

On January 31, 2020, the United Kingdom formally withdrew from the European Union as a result of a national referendum passed by a majority of voters in the United Kingdom in June 2016. The withdrawal creates significant uncertainty about the future relationship between the United Kingdom and the European Union, including with respect to the laws and regulations that will apply as the United Kingdom determines which European Union laws to replace or replicate. These developments have had and may continue to have a material adverse effect on global economic conditions and the stability of global financial markets and may significantly reduce global market liquidity and restrict the ability of key market participants to operate in certain financial markets. Any of these factors could depress economic activity and restrict our access to capital, or the access

to capital of our customers or partners, which could have a material adverse effect on our operations in the United Kingdom, and generally on our business, financial condition and results of operations and reduce the price of our securities.

***Our failure or the failure of our manufacturers to comply with environmental and other legal regulations could adversely impact our results of operations.***

The manufacture, assembly and testing of our products may require the use of hazardous materials that are subject to environmental, health and safety regulations, or materials subject to laws restricting the use of conflict minerals. Our failure or the failure of our third-party manufacturers to comply with any of these requirements could result in regulatory penalties, legal claims or disruption of production. In addition, our failure or the failure of our manufacturers to properly manage the use, transportation, emission, discharge, storage, recycling or disposal of hazardous materials could subject us to increased costs or liabilities. Existing and future environmental regulations and other legal requirements may restrict our use of certain materials to manufacture, assemble and test products. Any of these consequences could adversely impact our results of operations by increasing our expenses and/or requiring us to alter our manufacturing processes.

***Regulatory and physical impacts of climate change and other natural events may affect our customers and our contract manufacturers, resulting in adverse effects on our operating results.***

As emissions of greenhouse gases continue to alter the composition of the atmosphere, affecting large-scale weather patterns and the global climate, any new regulation of greenhouse gas emissions may result in additional costs to our customers and our contract manufacturers. In addition, the physical impacts of climate change and other natural events, including changes in weather patterns, drought, rising ocean and temperature levels, earthquakes and tsunamis may impact our customers, suppliers and contract manufacturers, and our operations. These potential physical effects may adversely affect our revenue, costs, production and delivery schedules, and cause harm to our results of operations and financial condition.

***We have in the past pursued, and may in the future continue to pursue, acquisitions which involve a number of risks and uncertainties. If we are unable to address and resolve these risks and uncertainties successfully, such acquisitions could disrupt our business and result in higher costs than we anticipate.***

We may in the future acquire businesses, products or technologies to expand our product offerings and capabilities, customer base and business. We have evaluated and expect to continue to evaluate a wide array of potential strategic transactions. We have limited experience making such acquisitions or integrating these businesses after such acquisitions. Any anticipated and unanticipated costs to us related to future transactions could exceed amounts that are covered by insurance and could have a material adverse impact on our financial condition and results of operations. In addition, the anticipated benefit of any acquisitions may never materialize or the process of integrating acquired businesses, products or technologies may create unforeseen operating difficulties and expenditures.

Some of the areas where we have experienced and may in the future experience acquisition-related risks include:

- expenses and distractions, including diversion of management time related to litigation;
- expenses and distractions related to potential claims resulting from any possible future acquisitions, whether or not they are completed;
- retaining and integrating employees from acquired businesses;
- issuance of dilutive equity securities or incurrence of debt;
- integrating various accounting, management, information, human resource and other systems to permit effective management;
- incurring possible write-offs, impairment charges, contingent liabilities, amortization expense of intangible assets or impairment of goodwill and intangible assets with finite useful lives;
- difficulties integrating and supporting acquired products or technologies;
- unexpected capital expenditure requirements;
- insufficient revenue to offset increased expenses associated with acquisitions; and
- opportunity costs associated with committing capital to such acquisitions.

If our goodwill becomes impaired, we may be required to record a significant charge to our results of operations. We review our goodwill for impairment annually or when events or changes in circumstances indicate the carrying value may not be recoverable, such as a sustained or significant decline in stock price and market capitalization. If the carrying value of goodwill was deemed to be impaired, an impairment loss equal to the amount by which the carrying amount exceeds the estimated fair value would be recognized. Any such impairment could materially and adversely affect our financial condition and results of operations.

Foreign acquisitions would involve risks in addition to those mentioned above, including those related to integration of operations across different cultures and languages, currency risks and the particular economic, political and regulatory risks associated with specific countries. We may not be able to address these risks and uncertainties successfully, or at all, without incurring significant costs, delays or other operating problems.

Our inability to address or anticipate any of these risks and uncertainties could disrupt our business and could have a material impact on our financial condition and results of operations.

***Our use of and reliance upon development resources in China may expose us to unanticipated costs or liabilities.***

We operate a wholly foreign owned enterprise in Nanjing, China, where a dedicated team of engineers performs product development, quality assurance, cost reduction and other engineering work. Our reliance upon development resources in China may not enable us to achieve meaningful product cost reductions or greater resource efficiency. Further, our development efforts and other operations in China involve significant risks, including:

- difficulty hiring and retaining appropriate engineering resources due to intense competition for such resources and resulting wage inflation;
- the knowledge transfer related to our technology and exposure to misappropriation of intellectual property or confidential information, including information that is proprietary to us, our customers and third parties;
- heightened exposure to changes in the economic, security, political and pandemic conditions that may arise in China;
- fluctuation in currency exchange rates and tax risks associated with international operations;
- development efforts that do not meet our requirements because of language, cultural or other differences associated with international operations, resulting in errors or delays; and
- uncertainty with respect to tariffs imposed by the federal government on products imported from China and future actions the federal government may take with respect to international trade agreements and U.S. tax provisions related to international commerce that could adversely affect our international operations.

Difficulties resulting from the factors above and other risks related to our operations in China could expose us to increased expense, impair our development efforts, harm our competitive position and damage our reputation. For example, in December 2019, an outbreak of a novel strain of coronavirus was reported in Wuhan, China, which has impacted our research and development operations in Nanjing and may continue to impact our operations, including our ability to meet our desired development timelines. The uncertainty over the coronavirus outbreak has resulted in government-imposed travel restrictions and closures of certain business operations in China, which may also disrupt and delay the supply of component parts sourced from China and our supply chain and our suppliers' operations in and outside of China for the foreseeable future.

***Our customers are subject to government regulation, and changes in current or future laws or regulations that negatively impact our customers could harm our business.***

The FCC has jurisdiction over all of our U.S. customers. FCC regulatory policies that create disincentives for investment in access network infrastructure or impact the competitive environment in which our customers operate may harm our business. For example, future FCC regulation affecting providers of broadband Internet access services could impede the penetration of our customers into certain markets or affect the prices they may charge in such markets. Similarly, changes to regulatory tariff requirements or other regulations relating to pricing or terms of carriage on communication networks could slow the development or expansion of network infrastructures. Consequently, such changes could adversely affect the sale of our products and services. Furthermore, many of our customers are subject to FCC rate regulation of interstate telecommunications services and are recipients of CAF capital incentive payments, which are intended to subsidize broadband and telecommunications services in areas that are expensive to serve. Changes to these programs, rules and regulations that could affect the ability of IOCs to access capital, and which could in turn reduce our revenue opportunities, remain possible.

In addition, many of our customers are subject to state regulation of intrastate telecommunications services, including rates for such services, and may also receive funding from state universal service funds. Changes in rate regulations or universal service funding rules, either at the U.S. federal or state level, could adversely affect our customers' revenue and capital spending plans. Moreover, various international regulatory bodies have jurisdiction over certain of our non-U.S. customers. Changes in these domestic and international standards, laws and regulations, or judgments in favor of plaintiffs in lawsuits against CSPs based on changed standards, laws and regulations could adversely affect the development of broadband networks and services. This, in turn, could directly or indirectly adversely impact the communications industry in which our customers operate.

Many jurisdictions, including international governments and regulators, are also evaluating, implementing and enforcing regulations relating to cyber security, privacy and data protection, which can affect the market and requirements for networking

and communications equipment. To the extent our customers are adversely affected by laws or regulations regarding their business, products or service offerings, our business, financial condition and results of operations would suffer.

***We are subject to governmental export and import controls that could subject us to liability or impair our ability to compete in additional international markets.***

Our products are subject to U.S. export and trade controls and restrictions. International shipments of certain of our products may require export licenses or are subject to additional requirements for export. In addition, the import laws of other countries may limit our ability to distribute our products, or our customers' ability to buy and use our products, in those countries. Changes in our products or changes in export and import regulations or duties may create delays in the introduction of our products in international markets, prevent our customers with international operations from deploying our products or, in some cases, prevent the export or import of our products to certain countries altogether. Any change in export or import regulations, duties or related legislation, shift in approach to the enforcement or scope of existing regulations, or change in the countries, persons or technologies targeted by such regulations, could negatively impact our ability to sell, profitably or at all, our products to existing or potential international customers.

***If we lose any of our key personnel, or are unable to attract, train and retain qualified personnel, our ability to manage our business and continue our growth would be negatively impacted.***

Our success depends, in large part, on the continued contributions of our key personnel, many of whom are highly skilled and would be difficult to replace. None of our key personnel are bound by a written employment contract to remain with us for a specified period. In addition, we do not currently maintain key person life insurance covering our key personnel. If we lose the services of any key personnel, our business, financial condition and results of operations may suffer.

Competition for skilled personnel is intense. We cannot be certain that we will be successful in attracting and retaining qualified personnel, or that newly hired personnel will function effectively, both individually and as a group. If we are unable to effectively recruit, hire and utilize new employees to align with our company objectives, execution of our business strategy and our ability to react to changing market conditions may be impeded, and our business, financial condition and results of operations may suffer.

Volatility or lack of performance in our stock price may also affect our ability to attract and retain our key personnel. Our executive officers and employees hold a substantial number of shares of our common stock and vested stock options. Employees may be more likely to leave us if the shares they own or the shares underlying their equity awards decline in value, or if the exercise prices of stock options that they hold are significantly above the market price of our common stock. If we are unable to retain our employees, our business, operating results and financial condition will be harmed.

***If we fail to maintain proper and effective internal controls, our ability to produce accurate financial statements on a timely basis could be impaired, which would adversely affect our operating results, our ability to operate our business and our stock price.***

Ensuring that we have adequate internal financial and accounting controls and procedures in place to produce accurate financial statements on a timely basis is a costly and time-consuming effort that needs to be re-evaluated frequently. We have in the past discovered, and may in the future discover, areas of our internal financial and accounting controls and procedures that need improvement. The complexity and changes related to our ERP migration described above in the risk factor entitled "*If we fail in our implementation of our new Enterprise Resource Planning, or ERP, system platform, we may not be able to effectively transact our business or produce our financial statements on a timely basis and without incurring additional costs, which would adversely affect our business, results of operations and cash flows*" could exacerbate the risk of deficiencies in process and controls upon which we rely to produce accurate and timely financial statements.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. Our management does not expect that our internal control over financial reporting will prevent or detect all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within our company will have been detected.

We are required to comply with Section 404 of the Sarbanes-Oxley Act, or SOX, which requires us to expend significant resources in developing the required documentation and testing procedures. We cannot be certain that the actions we have taken and are taking to improve our internal controls over financial reporting will be sufficient to maintain effective internal controls over financial reporting in subsequent reporting periods or that we will be able to implement our planned processes and procedures in a timely manner. In addition, new and revised accounting standards and financial reporting requirements may occur in the future and implementing changes required by new standards, requirements or laws may require a significant

expenditure of our management's time, attention and resources which may adversely affect our reported financial results. If we are unable to produce accurate financial statements on a timely basis, investors could lose confidence in the reliability of our financial statements, which could cause the market price of our common stock to decline and make it more difficult for us to finance our operations and growth.

***We incur significant costs as a result of operating as a public company, which may adversely affect our operating results and financial condition.***

As a public company, we incur significant accounting, legal and other expenses, including costs associated with our public company reporting requirements. We also anticipate that we will continue to incur costs associated with corporate governance requirements, including requirements and rules under SOX and the Dodd-Frank Wall Street Reform and Consumer Protection Act, or Dodd-Frank, among other rules and regulations implemented by the SEC, as well as listing requirements of the New York Stock Exchange, or NYSE. Furthermore, these laws and regulations could make it difficult or costly for us to obtain certain types of insurance, including director and officer liability insurance, and we may be forced to accept reduced policy limits and coverage or incur substantially higher costs to obtain the same or similar coverage. The impact of these requirements could also make it difficult for us to attract and retain qualified persons to serve on our Board of Directors, our board committees or as executive officers.

New laws and regulations as well as changes to existing laws and regulations affecting public companies, including the provisions of SOX and the Dodd-Frank Act and rules adopted by the SEC and the NYSE, would likely result in increased costs to us as we respond to their requirements. We continue to invest resources to comply with evolving laws and regulations, and this investment may result in increased general and administrative expense.

#### ***Risks Related to Ownership of Our Common Stock***

***Our stock price may continue to be volatile, and the value of an investment in our common stock may decline.***

The trading price of our common stock has been, and is likely to continue to be, volatile, which means that it could decline substantially within a short period of time and could fluctuate widely in response to various factors, some of which are beyond our control. These factors include those discussed above under "*Risks Related to Our Business and Industry*" and others such as:

- quarterly variations in our results of operations or those of our competitors;
- failure to meet any guidance that we have previously provided regarding our anticipated results;
- changes in earnings estimates or recommendations by securities analysts;
- failure to meet securities analysts' estimates;
- announcements by us or our competitors of new products, significant contracts, commercial relationships, acquisitions or capital commitments;
- developments with respect to intellectual property rights;
- our ability to develop and market new and enhanced products on a timely basis;
- our commencement of, or involvement in, litigation and developments relating to such litigation;
- changes in governmental regulations; and
- a slowdown in the communications industry or the general economy.

In recent years, the stock market in general, and the market for technology companies in particular, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry factors may seriously affect the market price of our common stock, regardless of our actual operating performance. In addition, in the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. This litigation, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources.

***If securities or industry analysts do not publish research or reports about our business or if they issue an adverse or misleading opinion regarding our stock, our stock price and trading volume could decline.***

The trading market for our common stock will be influenced by the research and reports that industry or securities analysts publish about us or our business. If any of the analysts who cover us issue an adverse or misleading opinion regarding our stock, our stock price would likely decline. If several of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.



***Provisions in our charter documents and under Delaware law could discourage a takeover that stockholders may consider favorable and may lead to entrenchment of our management and Board of Directors.***

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could have the effect of delaying or preventing changes in control or changes in our management or our Board of Directors. These provisions include:

- a classified Board of Directors with three-year staggered terms, which may delay the ability of stockholders to change the membership of a majority of our Board of Directors;
- no cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- the exclusive right of our Board of Directors to elect a director to fill a vacancy created by the expansion of the Board of Directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our Board of Directors;
- the ability of our Board of Directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairman of the Board of Directors, the chief executive officer or the Board of Directors, which may delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors; and
- advance notice procedures that stockholders must comply with in order to nominate candidates to our Board of Directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

We are also subject to certain anti-takeover provisions under Delaware law. Under Delaware law, a corporation may not, in general, engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other things, the Board of Directors has approved the transaction.

***We may need additional capital in the future to finance our business.***

We may need to raise additional capital to fund operations in the future. Our working capital needs and cash use have continued to increase to support our growth initiatives, and we may need additional capital if our current plans and assumptions change. While we have transitioned our supply chain operations to mitigate the impact of U.S. tariffs on goods imported from China, failure to effectively manage the transition or unanticipated further expenditures associated with mitigation efforts could negatively impact our cash flows and result of operations. Failure to maintain certain restrictive covenants and requirements under the BofA Loan Agreement could result in limiting the amount of borrowings that are available to us, increase the cost of borrowings under the credit facility, and/or cause us to make immediate payments to reduce borrowings or result in an event of default. If future financings involve the issuance of equity securities, our then-existing stockholders would suffer dilution. If we raise additional debt financing, we may be subject to restrictive covenants that limit our ability to conduct our business. If we are unable to generate positive operating income and positive cash flows from operations, our liquidity, results of operations and financial condition will be adversely affected. Furthermore, if we are unable to generate sufficient cash flows to support our operational needs, we may need to seek additional sources of liquidity, including borrowings, to support our working capital needs. In addition, we may choose to seek other sources of liquidity even if we believe we have generated sufficient cash flows to support our operational needs. There is no assurance that any other sources of liquidity may be available to us on acceptable terms or at all. If we are unable to generate sufficient cash flows or obtain other sources of liquidity, we will be forced to limit our development activities, reduce our investment in growth initiatives and institute cost-cutting measures, all of which would adversely impact our business and growth.

***We do not currently intend to pay dividends on our common stock and, consequently, our stockholders' ability to achieve a return on their investment will depend on appreciation in the price of our common stock.***

We do not currently intend to pay any cash dividends on our common stock for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Additionally, the terms of our credit facility restrict our ability to pay dividends under certain circumstances. Therefore, our stockholders are not likely to receive any dividends on our common stock for the foreseeable future.

**ITEM 1B. Unresolved Staff Comments**

None.

**ITEM 2. Properties**

We currently lease our corporate headquarters in San Jose, California. In addition to our headquarters site, we lease additional office space in the United States and China.

We believe that our facilities are in good condition and are generally suitable to meet our needs for the foreseeable future. We believe that prior to expiration of our current office space leases that we can renew or obtain suitable lease space on commercially reasonable terms for our business needs. In addition, we may continue to seek additional space as needed, and we believe this space will be available on commercially reasonable terms.

**ITEM 3. Legal Proceedings**

From time to time, we are involved in various legal proceedings arising from the normal course of business. We are not currently a party to any legal proceedings that, if determined adversely to us, in our opinion, are currently expected to individually or in the aggregate have a material adverse effect on our business, operating results or financial condition taken as a whole.

**ITEM 4. Mine Safety Disclosures**

Not applicable.

**PART II**

**ITEM 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities**

**Comparative Stock Prices**

Our common stock has been trading on the New York Stock Exchange, under the trading symbol “CALX” since our initial public offering on March 24, 2010. Prior to this time, there was no public market for our common stock.

**Number of Common Stockholders**

As of February 14, 2020, the approximate number of holders of our common stock was 459 (not including beneficial owners of stock held in street name).

**Dividends**

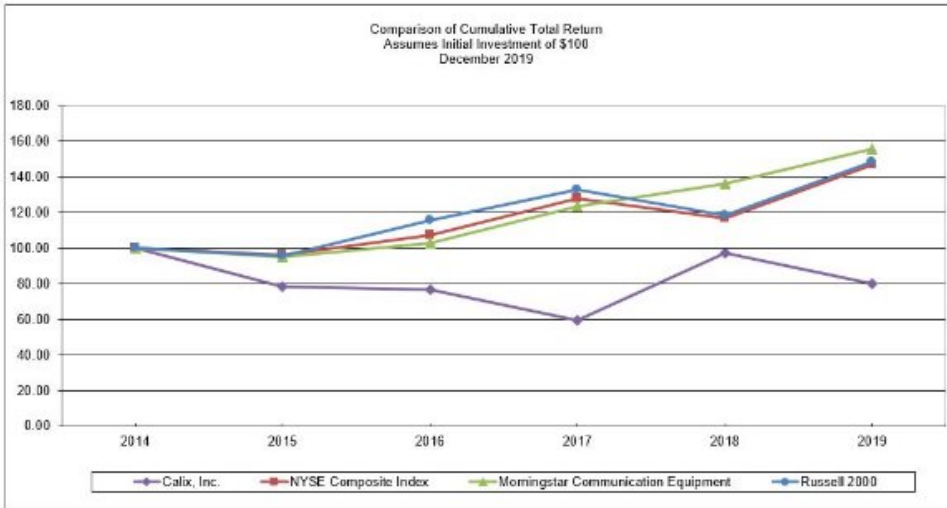
We have never declared or paid any cash dividends on our common stock, and we do not currently intend to pay any cash dividends on our common stock in the foreseeable future. In addition, our BofA Loan Agreement requires BofA’s consent before dividends can be declared. See Note 5 “*Credit Agreements*” of Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

**Recent Sales of Unregistered Securities**

None.

**Performance Graph**

The following graph shows a comparison of the cumulative total stockholder return on our common stock with the cumulative total returns of the Russell 2000 Index and the Morningstar Communication Equipment Index. The graph tracks the performance of a \$100 investment in our common stock and in each of the indexes during the last five fiscal years ended December 31, 2019. Data for the Russell 2000 Index and the Morningstar Communication Equipment Index assume reinvestment of dividends. Stockholder returns over the indicated period are based on historical data and should not be considered indicative of future stockholder returns.



This performance graph shall not be deemed “soliciting material” or to be “filed” with the SEC for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of Calix, Inc. under the Securities Act of 1933, as amended.

**ITEM 6. Selected Financial Data**

The following selected consolidated financial data should be read in conjunction with our consolidated financial statements and the related notes thereto, of this Annual Report on Form 10-K, the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the other financial information and data appearing elsewhere in this Annual Report on Form 10-K. The selected financial data included in this section is not intended to replace and is not a substitute for, the consolidated financial statements and related notes in this Annual Report on Form 10-K.

We derived the statements of operations data for the years ended December 31, 2019, 2018 and 2017 and the balance sheet data as of December 31, 2019 and 2018 from our audited consolidated financial statements and related notes thereto of this Annual Report on Form 10-K. We derived the statements of operations data for the years ended December 31, 2016 and 2015 and the balance sheet data as of December 31, 2017, 2016 and 2015 from our audited consolidated financial statements and related notes which are not included in this Annual Report on Form 10-K. Historical results for any prior period are not necessarily indicative of future results for any period.

|  | Years Ended December 31, |             |             |             |             |
|--|--------------------------|-------------|-------------|-------------|-------------|
|  | 2019                     | 2018        | 2017        | 2016        | 2015        |
| (In thousands, except per share data)  |                          |             |             |             |             |
| <b>Statement of Operations Data:</b>   |                          |             |             |             |             |
| Revenue  | \$ 424,330               | \$ 441,320  | \$ 510,367  | \$ 458,787  | \$ 407,163  |
| Cost of revenue <sup>(1)</sup>   | 236,405                  | 243,938     | 337,477     | 257,569     | 217,034     |
| Gross profit   | 187,925                  | 197,382     | 172,890     | 201,218     | 190,129     |
| Operating expenses:  |                          |             |             |             |             |
| Research and development <sup>(1)</sup>                                      | 81,184                   | 89,963      | 127,541     | 106,869     | 89,714      |
| Sales and marketing <sup>(1)</sup>   | 82,553                   | 86,432      | 82,781      | 83,675      | 78,563      |
| General and administrative <sup>(1)</sup>                                    | 37,115                   | 40,500      | 39,875      | 41,592      | 38,454      |
| Loss on asset retirement   | 2,474                    | —           | —           | —           | —           |
| Restructuring charges  | —                        | 5,705       | 4,249       | —           | —           |
| Gain on sale of product line   | —                        | (6,704)     | —           | —           | —           |
| Amortization of intangible assets  | —                        | —           | —           | 1,701       | 10,208      |
| Litigation settlement gain   | —                        | —           | —           | (4,500)     | —           |
| Total operating expenses   | 203,326                  | 215,896     | 254,446     | 229,337     | 216,939     |
| Loss from operations   | (15,401)                 | (18,514)    | (81,556)    | (28,119)    | (26,810)    |
| Interest and other income (expense), net                                     | (1,131)                  | (254)       | (233)       | 1,064       | 712         |
| Loss before provision for income taxes                                       | (16,532)                 | (18,768)    | (81,789)    | (27,055)    | (26,098)    |
| Provision for income taxes   | 1,162                    | 530         | 1,243       | 347         | 535         |
| Net loss   | \$ (17,694)              | \$ (19,298) | \$ (83,032) | \$ (27,402) | \$ (26,633) |
| Net loss per common share:   |                          |             |             |             |             |
| Basic and diluted  | \$ (0.32)                | \$ (0.37)   | \$ (1.66)   | \$ (0.56)   | \$ (0.52)   |
| Weighted-average number of shares used to compute net loss per common share: |                          |             |             |             |             |
| Basic and diluted  | 54,993                   | 52,609      | 50,155      | 48,730      | 51,489      |
| <sup>(1)</sup> Includes stock-based compensation as follows:                 |                          |             |             |             |             |
| Cost of revenue  | \$ 896                   | \$ 1,248    | \$ 749      | \$ 672      | \$ 709      |
| Research and development   | 3,913                    | 5,969       | 4,869       | 5,125       | 4,797       |
| Sales and marketing  | 3,415                    | 5,787       | 3,433       | 4,586       | 4,712       |
| General and administrative   | 2,957                    | 4,469       | 3,317       | 3,902       | 3,587       |
|  | \$ 11,181                | \$ 17,473   | \$ 12,368   | \$ 14,285   | \$ 13,805   |

|   | December 31,   |           |           |           |           |
|---|----------------|-----------|-----------|-----------|-----------|
|   | 2019           | 2018      | 2017      | 2016      | 2015      |
|   | (In thousands) |           |           |           |           |
| <b>Balance Sheet Data:</b>  |                |           |           |           |           |
| Cash, cash equivalents, restricted cash and marketable securities | \$ 47,457      | \$ 50,274 | \$ 39,775 | \$ 78,107 | \$ 73,590 |
| Working capital   | 28,324         | 31,079    | 34,123    | 97,926    | 115,561   |
| Total assets  | 316,823        | 317,080   | 295,070   | 355,475   | 323,886   |
| Common stock and additional paid-in capital                       | 897,444        | 877,555   | 852,475   | 837,931   | 820,080   |
| Total stockholders' equity  | 154,028        | 151,934   | 144,963   | 212,964   | 235,785   |

## ITEM 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

*The Management's Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements regarding future events and our future results that are subject to the safe harbors created under the Securities Act of 1933 (the "Securities Act") and the Securities Exchange Act of 1934 (the "Exchange Act"). All statements other than statements of historical facts are statements that could be deemed forward-looking statements. These statements are based on current expectations, estimates, forecasts and projections about the industry in which we operate and the beliefs and assumptions of our management. In some cases, forward-looking statements can be identified by the use of words such as "believe," "could," "expect," "may," "estimate," "continue," "anticipate," "intend," "should," "plan," "predict," "will," "would," "project," "potential," or the negative thereof or other comparable terminology. In addition, any statements that refer to projections of our future financial performance, our anticipated growth and trends in our business and industry and other characterizations of future events or circumstances are forward-looking statements. Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are difficult to predict, including those identified in the Risk Factors discussed in Item 1A, in the discussion below, as well as in other sections of this Annual Report on Form 10-K. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. All forward-looking statements and reasons why results may differ included in this report are made as of the date hereof, and we assume no obligation to update these forward-looking statements or reasons why actual results might differ.*

### Overview

We are a leading global provider of cloud and software platforms, systems and services for fiber- and copper-based network architectures and a pioneer in software defined access and cloud products focused on access networks and the subscriber. Our portfolio allows for a broad range of subscriber services to be provisioned and delivered over a single unified network. Our access systems can deliver voice and data services, advanced broadband services, mobile broadband, as well as high-definition video and online gaming. Our most recent generation of premises systems enable CSPs to address the complexity of the smart home and business and offer new services to their device enabled subscribers. We have designed all of our current platforms and related systems so that they can be monitored, analyzed, managed and supported by Calix Cloud.

We market our cloud and software platforms, systems and services to CSPs globally through our direct sales force as well as select resellers. Our customers range from smaller, regional CSPs to some of the world's largest CSPs. We have enabled approximately 1,600 customers to deploy passive optical, Active Ethernet and point-to-point Ethernet fiber access networks.

In the third quarter of 2018, the United States enacted 10% tariffs on certain goods manufactured in China and increased these tariffs to 25% in May 2019. In September 2019, the United States imposed a new 15% tariff covering a broader list of products manufactured in China. As a result of these tariffs, we incurred U.S. tariff and tariff-related costs of \$3.2 million in 2018 and \$6.2 million in 2019. In order to mitigate the impact of the tariffs enacted by the United States, we undertook a broad plan to realign our global supply chain by moving substantially all of our production outside of China in addition to other supply chain improvements in the first half of 2019. As a result of the tariffs imposed in September 2019 covering a broader list of products, we have expanded the scope of our global supply chain realignment plan, which is expected to take until mid-2020 to complete.

Our revenue decreased to \$424.3 million in 2019 from \$441.3 million in 2018 and \$510.4 million in 2017. The decrease in revenue from 2018 to 2019 was primarily due to lower revenue from our legacy incumbent local exchange carrier, or ILEC, customers as well as CenturyLink as they continued to reduce capital investments in response to broadband subscriber losses. Our revenue and potential revenue growth will depend on our ability to sell and license our cloud and software platforms, systems and services to strategically aligned customers, including from market segments such as cable MSOs, WISPs, fiber overbuilders, municipalities and electric cooperatives, in the United States and internationally.

Revenue fluctuations result from many factors, including, but not limited to: increases or decreases in customer orders for our products and services, market, financial or other factors that may delay or materially impact customer purchasing decisions,

non-availability of products due to supply chain challenges, including disruptions from the recent coronavirus outbreak in China, contractual terms with customers that result in delayed revenue recognition and varying budget cycles and seasonal buying patterns of our customers. More specifically, our customers tend to spend less in the first quarter as they are finalizing their annual budgets, and in certain regions, customers are challenged by winter weather conditions that inhibit fiber deployment in outside infrastructure. Our revenue is also dependent upon our customers' timing of purchases, capital expenditure plans and decisions to upgrade their network or adopt new technologies, including adoption of our software and cloud platform solutions, as well as our ability to grow our customer base.

Cost of revenue is strongly correlated to revenue and tends to fluctuate due to all of the above factors that may cause revenue fluctuations. Factors that impacted our cost of revenue for the year ended December 31, 2019, and that we expect will impact cost of revenue in future periods, also include: changes in the mix of products delivered, customer location and regional mix, changes in product warranty and incurrence of retrofit costs, changes in the cost of our inventory, including higher costs due to materials shortages including components, supply constraints or unfavorable changes in trade policies, investments to support expansion of cloud and customer support offerings, tariffs and associated costs to mitigate the impact of tariffs, amortization of intangibles, asset write-offs, silicon support fees and inventory write-downs. Cost of revenue also includes fixed expenses related to our internal operations, which could increase our cost of revenue as a percentage of revenue if there are declines in revenue.

Our gross profit and gross margin fluctuate based on timing of factors such as new product introductions or upgrades to existing products, changes in customer mix and changes in the mix of products demanded and sold (and any related write-downs of existing inventory) and have in the past been negatively impacted by increases in mix of revenue towards professional services, increases in mix of revenue from channel sales rather than direct sales or other unfavorable customer or product mix, shipment volumes and any related volume discounts, changes in our product and services costs, pricing decreases or discounts, customer rebates and incentive programs due to competitive pressure or materials shortages, supply constraints, investments to support expansion of cloud and customer support offerings, tariffs or unfavorable changes in trade policies.

Our operating expenses fluctuate based on the following factors among others: changes in headcount and personnel costs, which comprise a significant portion of our operating expenses; variable compensation due to fluctuations in shipment volumes or level of achievement against performance targets; timing of research and development expenses, including investments in innovative solutions and new customer segments, prototype builds and outsourced development resources; asset write-offs; investments in our business and information technology infrastructure; and fluctuations in stock-based compensation expenses due to timing of equity grants or other factors affecting vesting. For the year ended December 31, 2019 as compared to 2018, our total operating expenses for research and development, sales and marketing and general and administrative decreased by \$16.0 million, largely due to restructuring actions we took in 2017 and early 2018. These restructuring actions were completed in the second quarter of 2018.

Our net loss was \$17.7 million in 2019, \$19.3 million in 2018 and \$83.0 million in 2017. Since our inception, we have incurred significant losses, and as of December 31, 2019, we had an accumulated deficit of \$702.6 million. Further, as a result of factors contributing to the fluctuations described above among other factors, many of which are outside our control, our operating results fluctuate from period to period. Comparing our operating results on a period-to-period basis may not be meaningful, and you should not rely on our past results as an indication of our future performance.

### **Critical Accounting Policies and Estimates**

Our financial statements are prepared in accordance with U.S. GAAP. These accounting principles require us to make certain estimates and judgments that can affect the reported amounts of assets and liabilities as of the date of the financial statements, as well as the reported amounts of revenue and expenses during the periods presented. We base our estimates, assumptions and judgments on historical experience and on various other factors that are believed to be reasonable under the circumstances. To the extent there are material differences between these estimates and actual results, our financial statements may be affected. We evaluate our estimates, assumptions and judgments on an ongoing basis.

We believe the following critical accounting policies affect our significant judgments and estimates used in the preparation of our financial statements.

#### ***Revenue Recognition***

We derive revenue from contracts with customers primarily from the following and categorize our revenue as follows:

- Systems include revenue from the sale of access and premises systems, software platform licenses and cloud-based software subscriptions.
- Services include revenue from professional services, customer support, software- and cloud-based maintenance, extended warranty subscriptions, training and managed services.

Revenue is recognized when a performance obligation is satisfied, which occurs when control of the promised goods or services is transferred to the customer, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services. Specifically, revenue from software platform licenses, which provides the customer with a right to use the software as it exists, is generally recognized upfront when made available to the customer. Revenue from cloud-based software subscriptions, customer support, maintenance, extended warranty subscriptions and managed services is generally recognized ratably over the contract term. Revenue from professional services and training is recognized as the services are completed.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. Our hardware products contain both software and non-software components that function together to deliver the products' essential functionality and therefore constitutes a single performance obligation as the promise to transfer the individual software and non-software components is not separately identifiable and, therefore, not distinct. Our contracts may include multiple performance obligations. For such arrangements, we allocate the contract's transaction price to each performance obligation using the relative stand-alone selling price of each distinct good or service in the contract. We generally determine stand-alone selling prices based on the prices charged to customers or our best estimate of stand-alone selling price. Our estimate of stand-alone selling price is established considering multiple factors including, but not limited to, geographies, market conditions, competitive landscape, internal costs, gross margin objectives, characteristics of targeted customers and pricing practices. The determination of estimated stand-alone selling price is made through consultation with and formal approval by management, taking into consideration the go-to-market strategy.

For certain revenue arrangements involving delivery of both systems and professional services, each is considered a distinct performance obligation. Systems revenue is recognized at a point in time when management has determined that control over systems has transferred to the customer, which is generally when legal title has transferred to the customer. For the same revenue arrangements, management believes that the output of the associated professional services is transferred to the customer over time. As such, professional services revenue is recognized over the period in which the services are provided using a cost input measure. We recognize revenue when control of the systems and services has been transferred to the customer, which may be earlier than system installation or customer acceptance, in accordance with the agreed-upon specifications in the contract.

#### ***Inventory Valuation***

Inventory, which primarily consists of finished goods purchased from CMs or ODMs, is stated at the lower of cost (determined by the first-in, first-out method) and net realizable value. Inbound shipping costs and tariffs are included in the cost of inventory. In addition, we, from time to time, procure component inventory primarily as a result of manufacturing discontinuation of critical components by suppliers. We regularly monitor inventory quantities on-hand and record write-downs for excess and obsolete inventory based on our estimate of demand for our products, potential obsolescence of technology, product life cycle and whether pricing trends or forecasts indicate that the carrying value of inventory exceeds our estimated selling price. These factors are impacted by market and economic conditions, technology changes and new product introductions and require estimates that may include elements that are uncertain. Actual demand may differ from forecasted demand and may have a material effect on gross profit. If inventory is written down, a new cost basis is established that cannot be increased in future periods. The sale of previously reserved inventory has not had a material impact on our gross margin.

#### ***Recent Accounting Pronouncements Not Yet Adopted***

There have been no additional accounting pronouncements or changes in accounting pronouncements that are significant or potentially significant to us.

#### **Results of Operations for Years Ended December 31, 2019, 2018 and 2017**

##### ***Revenue***

Our revenue is comprised of the following:

- Systems – includes revenue from the sale of access and premises systems, software platform licenses and cloud-based software subscriptions.
- Services – includes revenue from professional services, customer support, software- and cloud-based maintenance, extended warranty subscriptions, training and managed services.

The following table sets forth our revenue (dollars in thousands):

|                                  | Years Ended December 31, |                   |                   | 2019 vs 2018 Change |             | 2018 vs 2017 Change |              |
|----------------------------------|--------------------------|-------------------|-------------------|---------------------|-------------|---------------------|--------------|
|                                  | 2019                     | 2018              | 2017              | \$                  | %           | \$                  | %            |
| <b>Revenue:</b>                  |                          |                   |                   |                     |             |                     |              |
| Systems                          | \$ 393,231               | \$ 405,923        | \$ 421,890        | \$ (12,692)         | (3)%        | \$ (15,967)         | (4)%         |
| Services                         | 31,099                   | 35,397            | 88,477            | (4,298)             | (12)%       | (53,080)            | (60)%        |
|                                  | <u>\$ 424,330</u>        | <u>\$ 441,320</u> | <u>\$ 510,367</u> | <u>\$ (16,990)</u>  | <u>(4)%</u> | <u>\$ (69,047)</u>  | <u>(14)%</u> |
| <b>Percent of total revenue:</b> |                          |                   |                   |                     |             |                     |              |
| Systems                          | 93%                      | 92%               | 83%               |                     |             |                     |              |
| Services                         | 7%                       | 8%                | 17%               |                     |             |                     |              |
|                                  | <u>100%</u>              | <u>100%</u>       | <u>100%</u>       |                     |             |                     |              |

Our revenue is principally derived in the United States. Revenue generated in the United States represented approximately 86% of our total revenue in 2019, 88% in 2018 and 89% in 2017.

The decrease in revenue during 2019 compared with 2018 was due to lower systems revenue of \$12.7 million and lower services revenue of \$4.3 million. The decline in systems revenue was primarily due to reduced demand from CenturyLink, Frontier and our medium-sized ILEC customer base partially offset by growth in our small-sized customers as we continued to see strong demand for our software and cloud platform offerings and the addition of new customers. The decrease in services revenue was primarily due to lower volume of deployment services associated with CAF-funded customer deployments.

CenturyLink accounted for more than 10% of our total revenue in 2019, 2018 and 2017. See Note 12 "Revenue from Contracts with Customers" to the Consolidated Financial Statements set forth in this report for more details on concentration of revenue for the periods presented.

#### Cost of Revenue, Gross Profit and Gross Margin

The following table sets forth our cost of revenue (dollars in thousands):

|                         | Years Ended December 31, |                   |                   | 2019 vs 2018 Change |             | 2018 vs 2017 Change |              |
|-------------------------|--------------------------|-------------------|-------------------|---------------------|-------------|---------------------|--------------|
|                         | 2019                     | 2018              | 2017              | \$                  | %           | \$                  | %            |
| <b>Cost of revenue:</b> |                          |                   |                   |                     |             |                     |              |
| Systems                 | \$ 211,309               | \$ 216,529        | \$ 236,137        | \$ (5,220)          | (2)%        | \$ (19,608)         | (8)%         |
| Services                | 25,096                   | 27,409            | 101,340           | (2,313)             | (8)%        | (73,931)            | (73)%        |
|                         | <u>\$ 236,405</u>        | <u>\$ 243,938</u> | <u>\$ 337,477</u> | <u>\$ (7,533)</u>   | <u>(3)%</u> | <u>\$ (93,539)</u>  | <u>(28)%</u> |

The decrease in cost of revenue of \$7.5 million during 2019 as compared with 2018 was primarily attributable to lower revenue for 2019 as compared with 2018 mainly due to the reduced demand from CenturyLink as well as our medium-sized ILEC customer base. Partially offsetting the decrease in systems cost of revenue was an increase in U.S. tariff and tariff-related costs of \$3.0 million in 2019.

The following table sets forth our gross profit and gross margin (dollars in thousands):

|                      | Years Ended December 31, |                   |                   | 2019 vs 2018 Change |             | 2018 vs 2017 Change |             |
|----------------------|--------------------------|-------------------|-------------------|---------------------|-------------|---------------------|-------------|
|                      | 2019                     | 2018              | 2017              | \$                  | %           | \$                  | %           |
| <b>Gross profit:</b> |                          |                   |                   |                     |             |                     |             |
| Systems              | \$ 181,922               | \$ 189,394        | \$ 185,753        | \$ (7,472)          | (4)%        | \$ 3,641            | 2 %         |
| Services             | 6,003                    | 7,988             | (12,863)          | (1,985)             | (25)%       | 20,851              | (162)%      |
|                      | <u>\$ 187,925</u>        | <u>\$ 197,382</u> | <u>\$ 172,890</u> | <u>\$ (9,457)</u>   | <u>(5)%</u> | <u>\$ 24,492</u>    | <u>14 %</u> |
| <b>Gross margin:</b> |                          |                   |                   |                     |             |                     |             |
| Systems              | 46.3 %                   | 46.7 %            | 44.0 %            |                     |             |                     |             |
| Services             | 19.3 %                   | 22.6 %            | (14.5) %          |                     |             |                     |             |
|                      | <u>44.3 %</u>            | <u>44.7 %</u>     | <u>33.9 %</u>     |                     |             |                     |             |

Gross profit decreased by \$9.5 million to \$187.9 million during 2019 from \$197.4 million during 2018. Gross margin decreased to 44.3% during 2019 from 44.7% during 2018. During 2019 and 2018, systems gross margin was negatively impacted by U.S. tariff and tariff-related costs of \$6.2 million and \$3.2 million, or 160 and 70 basis points, respectively. Excluding the impact of U.S. tariff and tariff-related costs, systems gross margin was 47.9% and 47.4% for 2019 and 2018, respectively. This 50 basis



point improvement was mainly due to an increasing mix of our all-platform offerings that have higher gross margin than some of our older traditional systems.

Services gross margin decreased in 2019 primarily due to higher investments in customer success and support personnel to support the expansion of our various services offerings.

### **Operating Expenses**

#### **Research and Development Expenses**

Research and development expenses include personnel costs, outside contractor and consulting services, depreciation on lab equipment, costs of prototypes and overhead allocations. The following table sets forth our research and development expenses (dollars in thousands):

|                          | Years Ended December 31, |           |            | 2019 vs 2018 Change |       | 2018 vs 2017 Change |       |
|--------------------------|--------------------------|-----------|------------|---------------------|-------|---------------------|-------|
|                          | 2019                     | 2018      | 2017       | \$                  | %     | \$                  | %     |
| Research and development | \$ 81,184                | \$ 89,963 | \$ 127,541 | \$ (8,779)          | (10)% | \$ (37,578)         | (29)% |
| Percent of total revenue | 19%                      | 20%       | 25%        |                     |       |                     |       |

The decrease in research and development expenses during 2019 compared with 2018 was primarily due to lower compensation and employee benefits costs of \$4.9 million, mainly due to restructuring activities during 2017 and the first quarter of 2018, lower stock-based compensation of \$2.1 million and lower outside services of \$1.8 million.

We expect our investments in research and development will be relatively consistent in absolute dollars from our current post-restructuring levels over the near term.

#### **Sales and Marketing Expenses**

Sales and marketing expenses consist of personnel costs, employee sales commissions, marketing programs and events, software tools and travel-related expenses. The following table sets forth our sales and marketing expenses (dollars in thousands):

|                          | Years Ended December 31, |           |           | 2019 vs 2018 Change |      | 2018 vs 2017 Change |    |
|--------------------------|--------------------------|-----------|-----------|---------------------|------|---------------------|----|
|                          | 2019                     | 2018      | 2017      | \$                  | %    | \$                  | %  |
| Sales and marketing      | \$ 82,553                | \$ 86,432 | \$ 82,781 | \$ (3,879)          | (4)% | \$ 3,651            | 4% |
| Percent of total revenue | 19%                      | 20%       | 16%       |                     |      |                     |    |

Sales and marketing expenses decreased by \$3.9 million during 2019 compared with 2018 primarily due to lower personnel costs of \$2.2 million, including commissions which decreased as a result of lower sales, and lower stock-based compensation of \$2.4 million. The decrease was also due to lower facility expenses of \$0.5 million, offset by higher marketing costs of \$1.5 million mainly due to increased investment in our smart, connected home and business marketing programs.

We expect to increase our investments in sales and marketing in absolute dollars in order to extend our market reach and grow our business in support of our key strategic initiatives.

#### **General and Administrative Expenses**

General and administrative expenses consist primarily of personnel costs related to our executive, finance, human resources, information technology and legal organizations, outside consulting services, insurance, allocated facilities and fees for professional services. Professional services consist of outside audit, legal, accounting and tax services. The following table sets forth our general and administrative expenses (dollars in thousands):

|                            | Years Ended December 31, |           |           | 2019 vs 2018 Change |      | 2018 vs 2017 Change |    |
|----------------------------|--------------------------|-----------|-----------|---------------------|------|---------------------|----|
|                            | 2019                     | 2018      | 2017      | \$                  | %    | \$                  | %  |
| General and administrative | \$ 37,115                | \$ 40,500 | \$ 39,875 | \$ (3,385)          | (8)% | \$ 625              | 2% |
| Percent of total revenue   | 9%                       | 9%        | 8%        |                     |      |                     |    |

The decrease in general and administrative expenses of \$3.4 million during 2019 compared with 2018 was primarily due to a decrease in consulting expenses of \$3.3 million and stock compensation of \$1.5 million. These decreases were partially offset by higher local taxes of \$0.4 million, higher office expenses of \$0.3 million and higher personnel costs of \$0.2 million. This decrease in consulting expense was largely a result of our adoption of a new accounting standard in the fourth quarter of 2018, which requires capitalization of certain implementation costs, including consulting and internal personnel expenses, related to our project to migrate our on-premise ERP system to a cloud model. We capitalized internal personnel expenses of \$1.8 million

in 2019 compared to \$0.4 million in 2018 related to our new ERP implementation. In January 2020, we commenced using our cloud-based ERP system and began amortizing the capitalized implementation costs over a period of five years.

Our general and administrative expenses will initially increase in 2020 in absolute dollars as a result of our ERP system being placed in service but are expected to decrease as a percentage of revenue over time.

**Loss on Asset Retirement**

During 2019, we recognized a charge of \$2.5 million relating to the retirement of an asset consisting of licensed software. Please refer to Note 4 “Balance Sheet Details” of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

**Restructuring Charges**

We adopted a restructuring plan in March 2017. This restructuring plan realigned our business, increasing our focus towards investments in software platforms and cloud products, while reducing our expense structure in the traditional systems business. We began to take actions under this plan beginning in March 2017 and recognized \$4.2 million of restructuring charges during 2017, consisting of severance and other one-time termination benefits. Actions pursuant to this restructuring plan were complete as of December 31, 2017.

In the first quarter of 2018, we established a new restructuring plan to further realign our business resources based on the production releases of our platform offerings. We incurred restructuring charges of \$5.7 million during 2018, consisting primarily of severance and other termination related benefits. Actions pursuant to this restructuring plan were complete as of June 30, 2018.

**Gain on Sale of Product Line**

During 2018, we recognized a gain of \$6.7 million relating to the sale of our outdoor cabinet product line to Clearfield, Inc. for \$10.4 million.

**Interest and Other Income (Expense), Net**

The following table sets forth our interest and other income (expense), net (dollars in thousands):

|  | Years Ended December 31, |          |          | 2019 vs 2018 Change |      | 2018 vs 2017 Change |    |
|--|--------------------------|----------|----------|---------------------|------|---------------------|----|
|  | 2019                     | 2018     | 2017     | \$                  | %    | \$                  | %  |
| Interest and other income (expense), net | \$ (1,131)               | \$ (254) | \$ (233) | \$ (877)            | 345% | \$ (21)             | 9% |

Interest and other income (expense) increased by \$0.9 million in 2019, compared with 2018, mainly due to higher interest expense related to new financing agreements and reduced foreign currency transaction gains in 2019 as compared to 2018.

**Provision for Income Taxes**

The provision for income taxes primarily consist of state and foreign income taxes. The following table sets forth our provision for income taxes (dollars in thousands):

|                            | Years Ended December 31, |        |          | 2019 vs 2018 Change |      | 2018 vs 2017 Change |       |
|----------------------------|--------------------------|--------|----------|---------------------|------|---------------------|-------|
|                            | 2019                     | 2018   | 2017     | \$                  | %    | \$                  | %     |
| Provision for income taxes | \$ 1,162                 | \$ 530 | \$ 1,243 | \$ 632              | 119% | \$ (713)            | (57)% |
| Effective tax rate         | (7.0)%                   | (2.8)% | (1.5)%   |                     |      |                     |       |

The provision for income taxes increased by \$0.6 million from \$0.5 million in 2018 to \$1.2 million in 2019. The increase was primarily due to a provision for foreign withholding taxes on the repatriation of cash from our foreign subsidiaries.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the “Tax Cuts and Jobs Act”, or the Tax Act. The significant impacts from the Tax Act include a net, one-time transition tax of \$1.1 million on unrepatriated earnings of foreign subsidiaries, which was offset by our current net operating loss, and a tax expense of \$84.4 million related to the revaluation of our deferred tax assets and liabilities due to the reduction of the U.S. corporate tax rate from 34% to 21%, which was offset by a reduction in our valuation allowance.

As of December 31, 2019, we had unrecognized tax benefits of \$22.3 million, none of which would affect our effective tax rate if recognized.

### 2018 Compared to 2017

For a comparison of our results of operations for the years ended December 31, 2018 and 2017, see Item 7 “*Management’s Discussion and Analysis of Financial Condition and Results of Operations*” of our Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on March 1, 2019.

### Liquidity and Capital Resources

We have funded our operations and investing activities primarily through cash generated from operations, borrowings on our line of credit, financing arrangements for certain lab equipment and consulting services for our ERP migration and sales of our common stock. As of December 31, 2019, we had cash and cash equivalents of \$46.8 million, which consisted of deposits held at banks and money market mutual funds held at major financial institutions. This includes \$2.4 million of cash primarily held by our China subsidiary. As of December 31, 2019, our liability for taxes that would be payable as a result of repatriation of undistributed earnings of our foreign subsidiaries to the United States was not significant and limited to withholding taxes considering our existing net operating loss carryovers.

The following table presents the cash inflows and outflows by activity during 2019, 2018 and 2017 (in thousands):

|   | Years Ended December 31, |          |             |
|---|--------------------------|----------|-------------|
|   | 2019                     | 2018     | 2017        |
| Net cash provided by (used in) operating activities | \$ 4,654                 | \$ 3,560 | \$ (62,772) |
| Net cash provided by (used in) investing activities | (13,353)                 | (76)     | 19,734      |
| Net cash provided by financing activities           | 5,971                    | 7,492    | 31,990      |

### Operating Activities

Our operating activities provided cash of \$4.7 million in 2019, provided cash of \$3.6 million in 2018 and used cash of \$62.8 million in 2017. The increase in net cash provided by operating activities during 2019 as compared to 2018 was due primarily to a favorable change in our net operating results of \$5.5 million after adjustment of non-cash charges partially offset by a \$4.4 million net cash outflow resulting from changes in operating assets and liabilities.

In 2019, cash inflows from changes in operating assets and liabilities primarily consisted of a decrease in accounts receivable of \$20.5 million, mainly due to increased linearity of shipments during 2019 resulting in higher collections during the year, a decrease in inventory of \$10.0 million, primarily due to the consumption of transferred raw material inventory as we transitioned our supply chain, and an increase in deferred revenue of \$2.4 million due to increased support contracts, software maintenance and Calix Cloud subscriptions. Cash outflows from changes in operating assets and liabilities primarily consisted of a decrease in accounts payable of \$29.4 million, primarily due to timing of inventory purchases, a decrease in other long-term liabilities of \$3.4 million, mainly due to operating lease liability amortization, and a decrease in accrued liabilities of \$1.8 million, mainly related to incentive compensation payments to employees. Non-cash charges primarily consisted of stock-based compensation of \$11.2 million, depreciation and amortization of \$10.3 million and loss on asset retirements of \$2.6 million.

### Investing Activities

In 2019, net cash used in investing activities consisted of capital expenditures of \$13.4 million for purchases of test equipment, computer equipment and furniture and fixtures.

### Financing Activities

In 2019, net cash provided by financing activities of \$6.0 million primarily consisted of proceeds from the issuance of common stock under our employee stock purchase plans of \$8.4 million and from stock option exercises of \$0.4 million. This was partially offset by payments related to financing arrangements of \$2.7 million.

### 2018 Compared to 2017

For a discussion of our liquidity and capital resources and our cash flow activities for the years ended December 31, 2018 and 2017, see Item 7 “*Management’s Discussion and Analysis of Financial Condition and Results of Operations*”, of our Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on March 1, 2019.

### Working Capital and Capital Expenditure Needs

Our material cash commitments include contractual obligations under our BofA Loan Agreement, obligations from financing arrangements, minimum revenue-share obligations, normal recurring trade payables, compensation-related and expense accruals, operating leases and non-cancelable firm purchase commitments. We believe that our outsourced approach to manufacturing provides us significant flexibility in both managing inventory levels and financing our inventory. In the event

that our revenue plan does not meet our expectations, we may be required to eliminate or curtail expenditures to mitigate the impact on our working capital.

In August 2017, we entered into the SVB Loan Agreement, which provides for a revolving credit facility of up to \$30.0 million based on a customary accounts receivable borrowing base, subject to certain exceptions for accounts originating outside the United States and certain specific accounts, which could reduce the amount available to us under the credit facility. The SVB Loan Agreement includes affirmative and negative covenants and requires us to maintain a liquidity ratio at minimum levels specified in the SVB Loan Agreement. For the month ended November 30, 2017, we were not able to maintain the minimum Adjusted Quick Ratio, or AQR (as defined in the SVB Loan Agreement, as amended) at the level required in the SVB Loan Agreement, which constituted an event of default. Although SVB waived this event of default effective as of November 30, 2017 and, therefore, this default did not change our ability to borrow under the SVB Loan Agreement, we were required to amend certain covenants under the SVB Loan Agreement.

In February 2018, we entered into an amendment to the SVB Loan Agreement that, among other things, amended certain affirmative financial covenants, including reductions to the required minimum level of the AQR and the inclusion of an additional financial covenant related to the maintenance of Adjusted EBITDA (as defined in the SVB Loan Agreement, as amended). In August 2018, we entered into a second amendment to the SVB Loan Agreement that, among other things, extended the maturity date from August 7, 2019 to August 7, 2020, amended certain financial covenants, including covenants with respect to the AQR and Adjusted EBITDA, and changed the compliance requirements for the AQR covenant from a monthly basis to a quarterly basis. In February 2019, we entered into a third amendment to the SVB Loan Agreement to reduce the required minimum level of the AQR for the first half of 2019 and the required minimum Adjusted EBITDA for the first fiscal quarter of 2019 to accommodate the increased costs and use of cash that we anticipate for the first half of 2019 related to activities to mitigate the impact of the U.S. tariffs. As of September 28, 2019 and December 31, 2019, we were not able to maintain the minimum AQR at the level required in the SVB Loan Agreement, which constituted events of default. SVB waived these events of default effective as of September 28, 2019 and December 31, 2019, respectively, therefore, these defaults did not change our ability to borrow under the SVB Loan Agreement. In January 2020, we repaid outstanding borrowings and terminated the SVB Loan Agreement and entered into the BofA Loan Agreement. The BofA Loan Agreement requires us to maintain Availability (as defined in the BofA Loan Agreement) of at least \$5.0 million among other requirements and borrowing base restrictions. The availability of borrowings under the BofA Loan Agreement is subject to certain conditions and requirements, including among others, if at any time our Availability (as defined in the BofA Loan Agreement) is less than \$5.0 million, we must maintain a minimum fixed charge coverage ratio, or FCCR, (as defined in the BofA Loan Agreement) of 1.0 to 1.0. We believe the BofA Loan Agreement is structured to better support our business. Given our current financial position and history of operating losses, it is possible that we may fail the requirement to maintain Availability greater than \$5.0 million in a future period.

As of December 31, 2019, we borrowed the full principal amount under the SVB line of credit of \$30.0 million. Please refer to Note 5 “*Credit Agreements*” and Note 15 “*Subsequent Event*” of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for more details on the SVB Loan Agreement and the BofA Loan Agreement.

During 2018, we entered into financing arrangements to purchase lab equipment for approximately \$5.1 million. Each agreement is to be paid over 36 months with a weighted average interest rate of 6.2%. As of December 31, 2019, we had \$2.9 million outstanding under these financing arrangements.

During 2017, 2018 and 2019, in connection with our ERP implementation, we entered into financing arrangements for consulting services of \$5.4 million. The current amounts due under this agreement are to be paid over a weighted average term of 2.4 years with a weighted average interest rate of 6.5%. As of December 31, 2019, there was \$2.1 million outstanding under this arrangement.

In March 2018, we entered into an agreement with a vendor to develop a software product and related enhancements pursuant to which we will become obligated, if the delivered software product and related enhancements meet our technical requirements for commercial sale, to make minimum revenue-share payments of \$15.8 million over the subsequent three years. The payments are based on a revenue-share rate applied to revenue from the developed product and corresponding hardware sales subject to a minimum and a maximum aggregate amount over the three-year sales period. We had our first sale in August 2019. Revenue-share payments are paid quarterly in arrears. See Note 4 “*Balance Sheet Details*” of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

We believe, based on our current operating plan and expected operating cash flows, that our existing cash and cash equivalents, along with available borrowings under our BofA Loan Agreement, will be sufficient to meet our anticipated cash needs for at least the next twelve months. Our future capital requirements will depend on many factors including our rate of revenue growth; timing of customer payments and payment terms, particularly of larger customers; the timing and extent of spending to support development efforts, particularly research and development related to growth initiatives such as our software and cloud platforms, and our ability to partner with third parties to outsource our research and development projects; our ability to

manage product cost, including the cost impact of the U.S. tariffs as well as our ability to continue to mitigate the cost impact through supply chain re-engineering, the possibility of additional tariffs that may impact our product costs and higher component costs associated with new technologies; our ability to implement efficiencies and maintain product margin levels; the expansion of sales and marketing activities; the success of revenue share programs; the timing of introductions and timing and rate of customer adoption of new products and enhancements to existing products; the slowdowns or declines in customer purchases of traditional systems; acquisition of new capabilities or technologies; and the continued market acceptance of our products. If we are unable to execute on our current operating plan or generate positive operating income and positive cash flows, our liquidity, results of operations and financial condition will be adversely affected and we may fail to meet the borrowing base requirements or comply with the covenants in the BofA Loan Agreement, in which case we may not be able to borrow under the BofA line of credit. We may need to seek other sources of liquidity, including the sale of equity or incremental borrowings, to support our working capital needs. In addition, we may choose to seek other sources of liquidity even if we believe we have generated sufficient cash flows to support our operational needs. There is no assurance that any other sources of liquidity may be available to us on acceptable terms or at all. If we are unable to generate sufficient cash flows or obtain other sources of liquidity, we will be forced to limit our development activities, reduce our investment in growth initiatives and institute cost-cutting measures, all of which may adversely impact our business and potential growth.

**Contractual Obligations and Commitments**

Our principal commitments as of December 31, 2019 consisted of our contractual obligations under the SVB Loan Agreement, financing arrangements, operating leases for office space and non-cancelable outstanding purchase obligations. The following table summarizes our contractual obligations at December 31, 2019 (in thousands):

|  | Payments Due by Period |                  |                  |                 |                   |
|--|------------------------|------------------|------------------|-----------------|-------------------|
|  | Total                  | Less Than 1 Year | 1-3 Years        | 3-5 Years       | More Than 5 Years |
| Line of credit, including interest <sup>(1)</sup>  | \$ 31,130              | \$ 31,130        | \$ —             | \$ —            | \$ —              |
| Financing arrangements <sup>(2)</sup>              | 21,239                 | 4,244            | 16,995           | —               | —                 |
| Operating lease obligations <sup>(3)</sup>         | 20,681                 | 3,770            | 7,065            | 6,965           | 2,881             |
| Non-cancelable purchase commitments <sup>(4)</sup> | 52,511                 | 52,511           | —                | —               | —                 |
|  | <u>\$ 125,561</u>      | <u>\$ 91,655</u> | <u>\$ 24,060</u> | <u>\$ 6,965</u> | <u>\$ 2,881</u>   |

<sup>(1)</sup> Line of credit contractual obligations include projected interest payments over the term of the SVB Loan Agreement, assuming the interest rate in effect for the outstanding borrowings as of December 31, 2019 of 6.25% and payment of the borrowings on August 7, 2020, the contractual maturity date of the credit facility. See Note 5, “Credit Agreements” of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for further discussion regarding our contractual obligations relating to our line of credit.

<sup>(2)</sup> Represents installment payments, including interest, related to financing arrangements and estimated total minimum revenue-share obligations under the program, including imputed interest, of \$15.8 million associated with developed software product and related enhancements by an engineering service provider of which approximately \$12.8 million has been incurred. The schedule reflects our expected revenue-share payments based on our revenue projections for the developed products over a three-year sales period. If the minimum revenue-share payments are not achieved by the end of the three-year sales period, a true-up payment will be due. See Note 4 “Balance Sheet Details” of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for further discussion regarding our outstanding liability.

<sup>(3)</sup> Future minimum operating lease obligations in the table above include primarily payments for our office locations, which expire at various dates through 2025. See Note 6 “Commitments and Contingencies” of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for further discussion regarding our operating leases.

<sup>(4)</sup> Represents outstanding purchase commitments for inventory to be delivered by our third-party manufacturers. See Note 6 “Commitments and Contingencies” of the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for further discussion regarding our outstanding purchase commitments.

**Off-Balance Sheet Arrangements**

As of December 31, 2019 and 2018, we did not have any off-balance sheet arrangements.

**ITEM 7A. Quantitative and Qualitative Disclosures About Market Risk****Interest Rate Risk**

The primary objectives of our investment activity are to preserve principal, provide liquidity and maximize income without significantly increasing risk. By policy, we do not enter into investments for trading or speculative purposes. As of December 31, 2019, we had cash and cash equivalents of \$46.8 million, which were held primarily in cash and money market funds. Due to the nature of these money market funds, we believe that we do not have any material exposure to changes in the fair value of our cash equivalents as a result of changes in interest rates.

Our exposure to interest rate risk also relates to the amount of interest we must pay on our borrowings under our revolving credit facility pursuant to our SVB Loan Agreement. Borrowings under the SVB Loan Agreement will bear interest through maturity at a variable annual rate based upon an annual rate of either a prime rate or a LIBOR rate, plus an applicable margin between 0.5% to 1.5% for prime rate advances and between 2.0% and 3.0% for LIBOR advances based on our maintenance of an applicable liquidity ratio. As of December 31, 2019, we had \$30.0 million outstanding in borrowings under the SVB Loan Agreement.

In January 2020, we terminated the SVB Loan Agreement and entered into the BofA Loan Agreement. Borrowings under the BofA Loan Agreement will bear interest through maturity at a variable annual rate based upon an annual rate of either a prime rate or a LIBOR rate, plus an applicable margin between 0.5% to 1.25% for prime rate advances and between 1.5% and 2.25% for LIBOR advances based on our FCCR.

**Foreign Currency Exchange Risk**

Our primary foreign currency exposures are described below.

*Economic Exposure*

The direct effect of foreign currency fluctuations on our sales and expenses has not been material because our sales and expenses are primarily denominated in U.S. dollars, or USD. However, we are indirectly exposed to changes in foreign currency exchange rates related to our use of foreign contract manufacturers whom we pay in USD. Increases in the local currency rates of these vendors in relation to USD could cause an increase in the price of products that we purchase. Additionally, if the USD strengthens relative to other currencies, such strengthening could have an indirect effect on our sales to the extent it raises the cost of our products to non-U.S. customers and thereby reduces demand. A weaker USD could have the opposite effect. The precise indirect effect of currency fluctuations is difficult to measure or predict because our sales are influenced by many factors in addition to the impact of such currency fluctuations.

*Translation Exposure*

Our sales contracts are primarily denominated in USD and, therefore, the majority of our revenue is not subject to foreign currency risk. We are directly exposed to changes in foreign exchange rates to the extent such changes affect our expenses related to our foreign assets and liabilities with our active subsidiaries in China and the United Kingdom, whose functional currencies are the Chinese Renminbi, or RMB, and British Pounds Sterling, or GBP.

Our operating expenses are incurred primarily in the United States, in China associated with our research and development operations that are maintained there and in the United Kingdom for our international sales and marketing activities. Our operating expenses are generally denominated in the functional currencies of our subsidiaries in which the operations are located.

The percentages of our operating expenses denominated in the following currencies for the indicated fiscal years were as follows:

|       | Years Ended December 31, |             |             |
|-------|--------------------------|-------------|-------------|
|       | 2019                     | 2018        | 2017        |
| USD   | 90%                      | 89%         | 89%         |
| RMB   | 7                        | 7           | 7           |
| GBP   | 3                        | 4           | 3           |
| Other | —                        | —           | 1           |
|       | <u>100%</u>              | <u>100%</u> | <u>100%</u> |

If the currency exchange rates in 2019 had been the same as in 2018, our 2019 operating expenses would have decreased by approximately \$0.9 million. If the U.S. dollar had appreciated or depreciated by 10% relative to RMB and GBP, our operating expenses for 2019 would have decreased or increased by approximately \$1.9 million, or approximately 1%. We do not currently enter into forward exchange contracts to hedge exposure denominated in foreign currencies or any derivative

financial instruments. In the future, we may consider entering into hedging transactions to help mitigate our foreign currency exchange risk.

Foreign exchange rate fluctuations may also adversely impact our financial position as the assets and liabilities of our foreign operations are translated into USD in preparing our Consolidated Balance Sheets. The effect of foreign exchange rate fluctuations on our consolidated financial position for the year ended December 31, 2019 was a net translation loss of approximately \$0.1 million. This loss is recognized as an adjustment to stockholders' equity through accumulated other comprehensive loss.

*Transaction Exposure*

We have certain assets and liabilities, primarily receivables and accounts payable (including inter-company transactions) that are denominated in currencies other than the relevant entity's functional currency. In certain circumstances, changes in the functional currency value of these assets and liabilities create fluctuations in our reported consolidated financial position, cash flows and results of operations. Transaction gains and losses on these foreign currency denominated assets and liabilities are recognized each period within other income (expense), net in our Consolidated Statements of Comprehensive Loss. During the year ended December 31, 2019, we recognized a net gain related to these foreign exchange assets and liabilities of approximately \$0.1 million.

**ITEM 8. Financial Statements and Supplementary Data**

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**Report of Independent Registered Public Accounting Firm**

To the Stockholders and Board of Directors  
Calix, Inc.:

*Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting*

We have audited the accompanying consolidated balance sheets of Calix, Inc. and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of comprehensive loss, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission".

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019 based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission".

*Change in Accounting Principle*

As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of Financial Accounting Standard Board (FASB) Accounting Standard Codification No. 842, *Leases*.

*Basis for Opinions*

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting under Item 9A. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

*Definition and Limitations of Internal Control Over Financial Reporting*

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KPMG LLP

We have served as the Company's auditor since 2016.

San Francisco, California  
February 21, 2020

CALIX, INC.  
**CONSOLIDATED BALANCE SHEETS**  
(In thousands, except par value)

|  | December 31, |            |
|--|--------------|------------|
|  | 2019         | 2018       |
| <b>ASSETS</b>  |              |            |
| Current assets:  |              |            |
| Cash and cash equivalents  | \$ 46,829    | \$ 49,646  |
| Restricted cash  | 628          | 628        |
| Accounts receivable, net   | 46,509       | 67,026     |
| Inventory  | 40,153       | 50,151     |
| Prepaid expenses and other current assets  | 9,698        | 7,306      |
| Total current assets   | 143,817      | 174,757    |
| Property and equipment, net  | 21,527       | 24,945     |
| Right-of-use operating leases  | 15,864       | —          |
| Goodwill   | 116,175      | 116,175    |
| Other assets   | 19,440       | 1,203      |
|  | \$ 316,823   | \$ 317,080 |
| <b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>  |              |            |
| Current liabilities:   |              |            |
| Accounts payable   | \$ 10,789    | \$ 40,209  |
| Accrued liabilities  | 57,546       | 57,869     |
| Deferred revenue   | 17,158       | 15,600     |
| Line of credit   | 30,000       | 30,000     |
| Total current liabilities  | 115,493      | 143,678    |
| Long-term portion of deferred revenue  | 18,340       | 17,496     |
| Operating leases   | 14,337       | —          |
| Other long-term liabilities  | 14,625       | 3,972      |
| Total liabilities  | 162,795      | 165,146    |
| Commitments and contingencies (See Note 6)   |              |            |
| Stockholders' equity:  |              |            |
| Preferred stock, \$0.025 par value; 5,000 shares authorized; no shares issued and outstanding as of December 31, 2019 and 2018   | —            | —          |
| Common stock, \$0.025 par value; 100,000 shares authorized; 61,778 shares issued and 56,448 shares outstanding as of December 31, 2019, and 59,285 shares issued and 53,955 shares outstanding as of December 31, 2018 | 1,545        | 1,482      |
| Additional paid-in capital   | 895,899      | 876,073    |
| Accumulated other comprehensive loss   | (854)        | (753)      |
| Accumulated deficit  | (702,576)    | (684,882)  |
| Treasury stock, 5,330 shares as of December 31, 2019 and 2018  | (39,986)     | (39,986)   |
| Total stockholders' equity   | 154,028      | 151,934    |
|  | \$ 316,823   | \$ 317,080 |

See accompanying notes to consolidated financial statements.

## CALIX, INC.

**CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS**  
(In thousands, except per share data)

|  | Years Ended December 31, |             |             |
|--|--------------------------|-------------|-------------|
|  | 2019                     | 2018        | 2017        |
| Revenue:   |                          |             |             |
| Systems  | \$ 393,231               | \$ 405,923  | \$ 421,890  |
| Services   | 31,099                   | 35,397      | 88,477      |
| Total revenue  | 424,330                  | 441,320     | 510,367     |
| Cost of revenue:   |                          |             |             |
| Systems  | 211,309                  | 216,529     | 236,137     |
| Services   | 25,096                   | 27,409      | 101,340     |
| Total cost of revenue  | 236,405                  | 243,938     | 337,477     |
| Gross profit   | 187,925                  | 197,382     | 172,890     |
| Operating expenses:  |                          |             |             |
| Research and development   | 81,184                   | 89,963      | 127,541     |
| Sales and marketing  | 82,553                   | 86,432      | 82,781      |
| General and administrative   | 37,115                   | 40,500      | 39,875      |
| Loss on asset retirement   | 2,474                    | —           | —           |
| Restructuring charges  | —                        | 5,705       | 4,249       |
| Gain on sale of product line   | —                        | (6,704)     | —           |
| Total operating expenses   | 203,326                  | 215,896     | 254,446     |
| Loss from operations   | (15,401)                 | (18,514)    | (81,556)    |
| Interest and other income (expense), net:                                    |                          |             |             |
| Interest expense, net  | (958)                    | (632)       | (160)       |
| Other income (expense), net  | (173)                    | 378         | (73)        |
| Total interest and other income (expense), net                               | (1,131)                  | (254)       | (233)       |
| Loss before provision for income taxes                                       | (16,532)                 | (18,768)    | (81,789)    |
| Provision for income taxes   | 1,162                    | 530         | 1,243       |
| Net loss   | \$ (17,694)              | \$ (19,298) | \$ (83,032) |
| Net loss per common share:   |                          |             |             |
| Basic and diluted  | \$ (0.32)                | \$ (0.37)   | \$ (1.66)   |
| Weighted-average number of shares used to compute net loss per common share: |                          |             |             |
| Basic and diluted  | 54,993                   | 52,609      | 50,155      |
| Net loss   | \$ (17,694)              | \$ (19,298) | \$ (83,032) |
| Other comprehensive income (loss), net of tax:                               |                          |             |             |
| Unrealized gain on available-for-sale marketable securities, net             | —                        | —           | 6           |
| Foreign currency translation adjustments, net                                | (101)                    | (584)       | 481         |
| Total other comprehensive income (loss), net of tax                          | (101)                    | (584)       | 487         |
| Comprehensive loss   | \$ (17,795)              | \$ (19,882) | \$ (82,545) |

See accompanying notes to consolidated financial statements.

## CALIX, INC.

 CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY  
 (In thousands)

|   | Common Stock |          | Additional<br>Paid-in<br>Capital | Accumulated<br>Other<br>Comprehensive<br>Loss | Accumulated<br>Deficit | Treasury<br>Stock | Total<br>Stockholders'<br>Equity |
|---|--------------|----------|----------------------------------|---|------------------------|-------------------|----------------------------------|
|   | Shares       | Amount   |                                  |   |                        |                   |                                  |
| <b>Balance as of December 31, 2016</b>  | 49,392       | \$ 1,368 | \$ 836,563                       | \$ (656)                                      | \$ (584,325)           | \$ (39,986)       | \$ 212,964                       |
| Stock-based compensation  | —            | —        | 12,368                           | —   | —                      | —                 | 12,368                           |
| Exercise of stock options   | 11           | —        | 62                               | —   | —                      | —                 | 62                               |
| Issuance of vested performance restricted stock units and restricted stock units, net of taxes withheld | 994          | 24       | (2,788)                          | —   | —                      | —                 | (2,764)                          |
| Stock issued under employee stock purchase plans  | 1,112        | 29       | 4,849                            | —   | —                      | —                 | 4,878                            |
| Net loss  | —            | —        | —                                | —   | (83,032)               | —                 | (83,032)                         |
| Other comprehensive income  | —            | —        | —                                | 487   | —                      | —                 | 487                              |
| <b>Balance as of December 31, 2017</b>  | 51,509       | 1,421    | 851,054                          | (169)   | (667,357)              | (39,986)          | 144,963                          |
| Stock-based compensation  | —            | —        | 17,473                           | —   | —                      | —                 | 17,473                           |
| Exercise of stock options   | 57           | 1        | 383                              | —   | —                      | —                 | 384                              |
| Issuance of vested performance restricted stock units and restricted stock units, net of taxes withheld | 913          | 22       | (96)                             | —   | —                      | —                 | (74)                             |
| Stock issued under employee stock purchase plans  | 1,476        | 38       | 7,259                            | —   | —                      | —                 | 7,297                            |
| Cumulative effect of accounting change  | —            | —        | —                                | —   | 1,773                  | —                 | 1,773                            |
| Net loss  | —            | —        | —                                | —   | (19,298)               | —                 | (19,298)                         |
| Other comprehensive loss  | —            | —        | —                                | (584)   | —                      | —                 | (584)                            |
| <b>Balance as of December 31, 2018</b>  | 53,955       | 1,482    | 876,073                          | (753)   | (684,882)              | (39,986)          | 151,934                          |
| Stock-based compensation  | —            | —        | 11,181                           | —   | —                      | —                 | 11,181                           |
| Exercise of stock options   | 75           | 2        | 440                              | —   | —                      | —                 | 442                              |
| Issuance of vested performance restricted stock units and restricted stock units, net of taxes withheld | 611          | 15       | (182)                            | —   | —                      | —                 | (167)                            |
| Stock issued under employee stock purchase plans  | 1,807        | 46       | 8,387                            | —   | —                      | —                 | 8,433                            |
| Net loss  | —            | —        | —                                | —   | (17,694)               | —                 | (17,694)                         |
| Other comprehensive loss  | —            | —        | —                                | (101)   | —                      | —                 | (101)                            |
| <b>Balance as of December 31, 2019</b>  | 56,448       | \$ 1,545 | \$ 895,899                       | \$ (854)                                      | \$ (702,576)           | \$ (39,986)       | \$ 154,028                       |

See accompanying notes to consolidated financial statements.

**CALIX, INC.**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
(In thousands)

|  | Years Ended December 31, |                  |                  |
|--|--------------------------|------------------|------------------|
|  | 2019                     | 2018             | 2017             |
| <b>Operating activities:</b>   |                          |                  |                  |
| Net loss   | \$ (17,694)              | \$ (19,298)      | \$ (83,032)      |
| Adjustments to reconcile net loss to net cash provided by (used in) operating activities:          |                          |                  |                  |
| Stock-based compensation   | 11,181                   | 17,473           | 12,368           |
| Depreciation and amortization  | 10,316                   | 9,187            | 10,991           |
| Loss on asset retirements  | 2,636                    | 326              | 280              |
| Gain on sale of product line   | —                        | (6,704)          | —                |
| Changes in operating assets and liabilities:   |                          |                  |                  |
| Accounts receivable, net   | 20,517                   | 13,858           | (29,056)         |
| Inventory  | 9,998                    | (20,639)         | 13,016           |
| Prepaid expenses and other assets  | (63)                     | 3,579            | 35,210           |
| Accounts payable   | (29,440)                 | 4,596            | 11,759           |
| Accrued liabilities  | (1,836)                  | 2,791            | (20,184)         |
| Deferred revenue   | 2,401                    | (1,426)          | (14,370)         |
| Other long-term liabilities  | (3,362)                  | (183)            | 246              |
| Net cash provided by (used in) operating activities  | <u>4,654</u>             | <u>3,560</u>     | <u>(62,772)</u>  |
| <b>Investing activities:</b>   |                          |                  |                  |
| Purchases of property and equipment  | (13,353)                 | (10,426)         | (8,026)          |
| Purchases of marketable securities   | —                        | —                | (8,732)          |
| Sales of marketable securities   | —                        | —                | 5,051            |
| Maturities of marketable securities  | —                        | —                | 31,441           |
| Proceeds from sale of product line   | —                        | 10,350           | —                |
| Net cash provided by (used in) investing activities  | <u>(13,353)</u>          | <u>(76)</u>      | <u>19,734</u>    |
| <b>Financing activities:</b>   |                          |                  |                  |
| Proceeds from exercise of stock options  | 442                      | 384              | 62               |
| Proceeds from employee stock purchase plans  | 8,433                    | 7,297            | 4,878            |
| Taxes paid for awards vested under equity incentive plan   | (167)                    | (74)             | (2,764)          |
| Payments related to financing arrangements   | (2,737)                  | —                | —                |
| Proceeds from line of credit   | 143,300                  | 557,915          | 171,268          |
| Repayments of line of credit   | (143,300)                | (557,915)        | (141,268)        |
| Payments to originate the line of credit   | —                        | (115)            | (186)            |
| Net cash provided by financing activities  | <u>5,971</u>             | <u>7,492</u>     | <u>31,990</u>    |
| Effect of exchange rate changes on cash, cash equivalents and restricted cash                      | (89)                     | (477)            | 464              |
| Net increase (decrease) in cash, cash equivalents and restricted cash                              | (2,817)                  | 10,499           | (10,584)         |
| Cash, cash equivalents and restricted cash at beginning of year                                    | 50,274                   | 39,775           | 50,359           |
| Cash, cash equivalents and restricted cash at end of year  | <u>\$ 47,457</u>         | <u>\$ 50,274</u> | <u>\$ 39,775</u> |
| <b>Supplemental disclosures of cash flow information:</b>  |                          |                  |                  |
| Interest paid  | \$ 1,123                 | \$ 649           | \$ 313           |
| Income taxes paid  | \$ 403                   | \$ 561           | \$ 915           |
| <b>Non-cash investing activities:</b>  |                          |                  |                  |
| Changes in accounts payable and accrued liabilities related to purchases of property and equipment | \$ (2,435)               | \$ 8,459         | \$ (55)          |

See accompanying notes to consolidated financial statements.

CALIX, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

**1. Description of Business and Significant Accounting Policies**

***Company***

Calix, Inc. (together with its subsidiaries, “Calix” or the “Company”) was incorporated in August 1999 and is a Delaware corporation. The Company is a leading global provider of cloud and software platforms, systems and services required to deliver the unified access network and smart premises of tomorrow. The Company’s platforms and services help its customers build next generation networks by embracing a DevOps operating model, optimize the subscriber experience by leveraging big data analytics and turn the complexity of the smart home and business into new revenue streams. The Company’s cloud and software platforms, systems and services enable communication service providers (“CSPs”) to provide a wide range of revenue-generating services, from basic voice and data to advanced broadband services, over legacy and next-generation access networks. The Company focuses on CSP access networks, the portion of the network that governs available bandwidth and determines the range and quality of services that can be offered to subscribers.

***Basis of Presentation and Accounting Guidance***

The accompanying consolidated financial statements have been prepared in accordance with the requirements of the U.S. Securities and Exchange Commission (“SEC”) and U.S. generally accepted accounting principles (“GAAP”). All significant intercompany balances and transactions have been eliminated in consolidation. Any reference in these notes to applicable accounting guidance (“guidance”) is meant to refer to the authoritative U.S. GAAP as found in the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”).

***Use of Estimates***

The preparation of financial statements is in conformity with U.S. GAAP, which requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. For the Company, these estimates include, but are not limited to: allowances for doubtful accounts and sales returns, excess and obsolete inventory, allowances for obligations to its contract manufacturers, valuation of stock-based compensation, useful lives assigned to long-lived assets, standard and extended warranty costs and contingencies. Actual results could differ from those estimates, and such differences could be material to the Company’s financial position and results of operations.

***Revenue Recognition***

The Company derives revenue from contracts with customers primarily from the following and categorizes its revenue as follows:

- Systems include revenue from the sale of access and premises systems, software platform licenses and cloud-based software subscriptions.
- Services include revenue from professional services, customer support, software- and cloud-based maintenance, extended warranty subscriptions, training and managed services.

Revenue is recognized when a performance obligation is satisfied, which occurs when control of the promised goods or services is transferred to the customer, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services. Specifically, revenue from software platform licenses, which provides the customer with a right to use the software as it exists, is generally recognized upfront when made available to the customer. Revenue from cloud-based software subscriptions, customer support, maintenance, extended warranty subscriptions and managed services is generally recognized ratably over the contract term. Revenue from professional services and training is recognized as the services are completed.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account. A contract’s transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. The Company’s hardware products contain both software and non-software components that function together to deliver the products’ essential functionality and therefore constitutes a single performance obligation as the promise to transfer the individual software and non-software components is not separately identifiable and, therefore, not distinct. The Company’s contracts may include multiple performance obligations. For such arrangements, the Company allocates the contract’s transaction price to each performance obligation using the relative stand-alone selling price of each distinct good or service in the contract. The Company generally determines stand-alone selling prices based on the prices charged to customers or its best estimate of stand-alone selling price. The Company’s estimate of stand-alone selling price is established considering multiple factors including, but not limited to, geographies, market conditions, competitive landscape, internal costs, gross margin objectives, characteristics of targeted customers and pricing practices. The determination of

estimated stand-alone selling price is made through consultation with and formal approval by management, taking into consideration the go-to-market strategy.

For certain revenue arrangements involving delivery of both systems and professional services, each is considered a distinct performance obligation. Systems revenue is recognized at a point in time when management has determined that control over systems has transferred to the customer, which is generally when legal title has transferred to the customer. For the same revenue arrangements, management believes that the output of the associated professional services is transferred to the customer over time. As such, professional services revenue is recognized over the period in which the services are provided using a cost input measure. The Company recognizes revenue when control of the systems and services has been transferred to the customer, which may be earlier than system installation or customer acceptance, in accordance with the agreed-upon specifications in the contract.

#### ***Cost of Revenue***

Cost of revenue consists primarily of finished goods inventory purchased from the Company's contract manufacturers, payroll and related expenses associated with managing the relationships with contract manufacturers, depreciation of manufacturing test equipment, warranty and retrofit costs, excess and obsolete inventory costs, shipping charges and amortization of certain intangible assets. It also includes contractor and other costs of services incurred directly related to the delivery of services to customers.

#### ***Warranty and Retrofit***

The Company offers limited warranties for its hardware products for a period of one, three or five years, depending on the product type. The Company recognizes estimated costs related to warranty activities as a component of cost of revenue upon product shipment or upon identification of a specific product failure. Under certain circumstances, the Company also provides fixes on specifically identified performance failures for products that are outside of the standard warranty period and recognizes estimated costs related to retrofit activities as a component of cost of revenue upon identification of such product failures. The Company recognizes estimated warranty and retrofit costs when it is probable that a liability has been incurred and the amount of loss is reasonably estimable. The estimates are based upon historical and projected product failure and claim rates, historical costs incurred in correcting product failures and information available related to any specifically identified product failures. Judgment is required in estimating costs associated with warranty and retrofit activities, and the Company's estimates are limited to information available to the Company at the time of such estimates. In some cases, such as when a specific product failure is first identified or a new product is introduced, the Company may initially have limited information and limited historical failure and claim rates upon which to base its estimates, and such estimates may require revision in future periods. The recorded amount is adjusted from time to time for specifically identified warranty and retrofit exposure. Actual warranty and retrofit expenses are charged against the Company's estimated warranty and retrofit liability when incurred. Factors that affect the Company's warranty and retrofit liability include the number of active installed units and historical and anticipated rates of warranty and retrofit claims and cost per claim.

#### ***Stock-Based Compensation***

Stock-based compensation expense associated with stock options, performance stock options ("PSOs"), restricted stock units ("RSUs") and purchase rights under the Amended and Restated Employee Stock Purchase Plan (the "ESPP") and the Amended and Restated 2017 Nonqualified Employee Stock Purchase Plan (the "NQ ESPP") is measured at the grant date based on the fair value of the award, and is recognized, net of forfeitures, as expense over the remaining requisite service period (generally the vesting period) on a straight-line basis.

The fair value of stock option and employee stock purchase right under the ESPP is estimated at the grant date using the Black-Scholes option valuation model. The fair value of RSUs and employee stock purchase right under the Nonqualified ESPP is based on closing market price of the Company's common stock on the date of grant.

Stock-based compensation expense associated with PSOs with graded vesting features and which contain both a performance and a service condition is measured based on fair value of stock options estimated at the grant date using the Black-Scholes option valuation model, and is recognized, net of forfeitures, as expense over the requisite service period using the graded vesting attribution method.

Compensation expense is only recognized if the Company has determined that it is probable that the performance condition will be met. The Company reassesses the probability of vesting at each reporting period and adjusts compensation expense based on its probability assessment.

#### ***Loss Contingencies***

From time to time, the Company is involved in legal proceedings arising from the normal course of business activities. The Company evaluates the likelihood of an unfavorable outcome of legal proceedings to which it is a party and accrues a loss

contingency when the loss is probable and reasonably estimable. Assessing legal contingencies involves significant judgment and estimates, and the outcome of litigation is inherently uncertain and subject to numerous factors outside the Company's control. Significant judgment is required when the Company assesses the likelihood of any adverse judgments or outcomes, including the potential range of possible losses, and whether losses are probable and reasonably estimable.

Because of uncertainties related to these matters, the Company bases its estimates of whether a loss contingency is probable or reasonably possible, as well as the reasonable range of possible losses associated with each loss contingency, only on the information available at the time. As additional information becomes available, and at least quarterly, the Company reassesses the potential liability on each significant matter and may revise its estimates. These revisions could have a material impact on the Company's business, operating results or financial condition. The actual outcome of these legal proceedings may materially differ from the Company's estimates of potential liability, which could have a material adverse effect on the Company's business, operating results or financial condition.

#### ***Credit Risk and Inventory Supplier Concentrations***

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash and cash equivalents and accounts receivable. Cash equivalents consist of money market funds, which are invested through financial institutions in the United States. Deposits in these financial institutions may, at times, exceed federally insured limits. The Company has not experienced any losses in such accounts. The Company also has approximately \$2.4 million of cash held by its foreign subsidiaries in Brazil, China and the United Kingdom. Management believes that the financial institutions that hold the Company's cash and cash equivalents are financially sound and, accordingly, minimal credit risk exists with respect to these cash and cash equivalents.

The Company depends primarily on a small number of outside contract manufacturers ("CMs") and original design manufacturers ("ODMs") for the bulk of its finished goods inventory. The Company generally purchases its products through purchase orders with its suppliers. While the Company seeks to maintain a sufficient supply of its products, the Company's business and results of operations could be adversely affected by a stoppage or delay in receiving such products, the receipt of defective parts, an increase in price of such products or the Company's inability to obtain lower prices from its CMs, ODMs and other suppliers in response to competitive pressures.

#### ***Fair Value of Financial Instruments***

The carrying amounts of cash and cash equivalents, marketable securities, trade receivables, accounts payable, line of credit and other accrued liabilities approximate their fair value due to their relatively short-term nature.

#### ***Cash, Cash Equivalents, Restricted Cash and Marketable Securities***

Cash equivalents and marketable securities are stated at amounts that approximate fair value based on quoted market prices.

Restricted cash is cash that is legally restricted as to withdrawal or usage. As of December 31, 2019, the Company had \$0.6 million in restricted cash related to a letter of credit in connection with its San Jose facility lease.

The Company has invested its excess cash primarily in money market funds and highly liquid marketable securities such as corporate debt instruments, commercial paper and U.S. government agency securities. The Company considers all investments with maturities of three months or less when purchased to be cash equivalents. Marketable securities represent highly liquid corporate debt instruments, commercial paper and U.S. government agency securities with maturities greater than 90 days at date of purchase. Marketable securities with maturities greater than one year are classified as current because management considers all marketable securities to be available for current operations.

The Company's investments have been classified and accounted for as available-for-sale. Such investments are recorded at fair value and unrealized holding gains and losses are reported as a separate component of comprehensive loss in the stockholders' equity until realized. Realized gains and losses on sales of marketable securities, if any, are determined on the specific identification method and are reclassified from accumulated other comprehensive loss to results of operations as "Other income (expense), net". The Company had no investments as of December 31, 2019 and 2018.

#### ***Allowance for Doubtful Accounts***

The Company maintains an allowance for doubtful accounts for estimated losses resulting from the inability of its customers to make required payments. The Company records a specific allowance based on an analysis of individual past-due balances. Additionally, based on historical write-offs and the Company's collection experience, the Company records an additional allowance based on a percentage of outstanding receivables. The Company performs credit evaluations of its customers' financial condition. These evaluations require judgment and are based on a variety of factors including, but not limited to, current economic trends, payment history and a financial review of the customer. Actual collection losses may differ from management's estimates, and such differences could be material to the Company's financial position and results of operations.



### ***Inventory Valuation***

Inventory, which primarily consists of finished goods purchased from CMs or ODMs, is stated at the lower of cost (determined by the first-in, first-out method) or market value. Inbound shipping costs and U.S. tariffs are included in cost of inventory. In addition, the Company, from time to time, procures component inventory primarily as a result of manufacturing discontinuation of critical components by suppliers. The Company regularly monitors inventory quantities on hand and records write-downs for excess and obsolete inventories based on the Company's estimate of demand for its products, potential obsolescence of technology, product life cycles and whether pricing trends or forecasts indicate that the carrying value of inventory exceeds its estimated selling price. These factors are impacted by market and economic conditions, technology changes and new product introductions and require significant estimates that may include elements that are uncertain. Actual demand may differ from forecasted demand and may have a material effect on gross profit. If inventory is written down, a new cost basis is established that cannot be increased in future periods. Shipments from suppliers before the Company receives them are recorded as in-transit inventory when title and the significant risks and rewards of ownership have passed to the Company.

### ***Contract Costs***

The Company capitalizes sales commissions primarily related to extended warranty and Calix Cloud contracts for which the expected amortization period is greater than one year.

Capitalized commissions are amortized as sales and marketing expenses over the period that the related revenue is recognized, which typically range from three to ten years for extended warranty and cloud offerings. The Company classifies the unamortized portion of deferred commissions as current or noncurrent based on the timing of when the Company expects to recognize the expense. The current and noncurrent portions of deferred commissions are included in prepaid expenses and other current assets and other assets, respectively, in the Company's Consolidated Balance Sheets.

### ***Property and Equipment***

Property and equipment are stated at cost, less accumulated depreciation, and are depreciated using the straight-line method over the estimated useful life of each asset. Generally, computer equipment is depreciated over two years; purchased software is depreciated over three to five years; test equipment is depreciated over three years; furniture and fixtures are depreciated over seven years; and leasehold improvements are depreciated over the shorter of the respective lease term or the estimated useful life of the asset. Maintenance and repairs are charged to expense as incurred.

### ***Goodwill***

Goodwill was recorded as a result of the Company's acquisitions of Occam Networks, Inc. in February 2011 and Optical Solutions, Inc. in February 2006. The Company records goodwill when consideration paid in a business acquisition exceeds the fair value of the net tangible assets and the identified intangible assets acquired. Goodwill is not amortized but instead is subject to an annual impairment test or more frequently if events or changes in circumstances indicate that it may be impaired. The Company evaluates goodwill on an annual basis as of the end of the second quarter of each fiscal year. Management has determined that it operates as a single reporting unit and, therefore, evaluates goodwill impairment at the enterprise level.

In an annual impairment test, the Company first assesses qualitative factors to determine whether it is necessary to perform the two-step quantitative goodwill impairment test. In assessing the qualitative factors, management considers the impact of these key factors: macro-economic conditions, industry and market environment, overall financial performance of the Company, cash flow from operating activities, market capitalization and stock price. If the Company determines as a result of the qualitative assessment that it is more likely than not (that is, a likelihood of more than 50 percent) that the fair value of a reporting unit is less than its carrying amount, then the quantitative test is required. Otherwise, no further testing is required.

In a quantitative test, the Company compares its fair value to its carrying value including goodwill. The Company determines its fair value using both an income approach and a market approach. Under the income approach, the Company determines fair value based on estimated future cash flows, discounted by an estimated weighted-average cost of capital, which reflects the overall level of inherent risk of the Company and the rate of return an outside investor would expect to earn. Under the market-based approach, the Company utilizes information regarding the Company as well as publicly available industry information to determine earnings multiples that are used to value the Company. If the carrying value of the Company exceeds its fair value, the Company will determine the amount of impairment loss by comparing the implied fair value of goodwill with the carrying value of goodwill. An impairment charge is recognized for the excess of the carrying value of goodwill over its implied fair value.

At the end of the second quarter of 2019, the Company completed its annual goodwill impairment test. Based on its assessment of the above qualitative factors, management concluded that the fair value of the Company was more likely than not greater than its carrying amount as of June 30, 2019. As such, it was not necessary to perform the two-step quantitative goodwill impairment test at the time.

There have been no significant events or changes in circumstances subsequent to the 2019 annual impairment test that would more likely than not indicate that the carrying value of goodwill may have been impaired as of December 31, 2019. Therefore, there was no impairment to the carrying value of the Company's goodwill as of December 31, 2019. There were no impairment losses for goodwill for the years ended December 31, 2018 or 2017.

#### ***Deferred Revenue***

Deferred revenue results from transactions where the Company billed the customer for products or services and when cash payments are received or due prior to transferring control of the promised goods or services to the customer.

Payment terms to customers typically range from net 30 to net 90 days and vary by the size and location of customer and the products or services offered. The period between the transfer of control of the promised good or service to a customer and when payment is due is not significant.

#### ***Income Taxes***

The Company evaluates its tax positions and estimates its current tax exposure along with assessing temporary differences that result from different book to tax treatment of items not currently deductible for tax purposes. These differences result in deferred tax assets and liabilities on the Company's Consolidated Balance Sheets, which are estimated based upon the difference between the financial statement and tax bases of assets and liabilities using the enacted tax rates that will be in effect when these differences reverse. In general, deferred tax assets represent future tax benefits to be received when certain expenses previously recognized in the Company's Consolidated Statements of Comprehensive Loss become deductible expenses under applicable income tax laws or loss or credit carryforwards are utilized. Accordingly, realization of the Company's deferred tax assets is dependent on future taxable income against which these deductions, losses and credits can be utilized.

The Company must assess the likelihood that the Company's deferred tax assets will be recovered from future taxable income, and to the extent the Company believes that recovery is not more likely than not, the Company must establish a valuation allowance. Management judgment is required in determining the Company's provision for income taxes, the Company's deferred tax assets and liabilities and any valuation allowance recorded against the Company's net deferred tax assets. Excluding foreign operations, the Company recorded a full valuation allowance at each balance sheet date presented because, based on the available evidence, the Company believes it is more likely than not that it will not be able to utilize all of its deferred tax assets in the future. The Company intends to maintain the full valuation allowance until sufficient evidence exists to support the reversal of the valuation allowance.

#### ***Newly Adopted Accounting Standards***

##### ***Leases***

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, Leases (Topic 842), which requires recognition of an asset and liability for lease arrangements longer than twelve months. The Company adopted the new standard effective January 1, 2019 using the effective date approach which eliminates the need to restate amounts presented prior to that date. The Company also elected the package of practical expedients but not the hindsight practical expedient. The adoption had a material impact on the Company's Consolidated Balance Sheets but did not impact the Company's Consolidated Statements of Comprehensive Loss, Cash Flows or Stockholders' Equity. Upon adoption on January 1, 2019, the Company recognized an operating lease right-of-use asset of \$15.8 million and a lease liability of \$16.7 million.

#### ***Recent Accounting Pronouncements Not Yet Adopted***

There have been no accounting pronouncements or changes in accounting pronouncements that are significant or potentially significant to the Company.

**2. Cash, Cash Equivalents and Restricted Cash**

Cash, cash equivalents and restricted cash consisted of the following (in thousands):

|                                 | December 31,     |                  |
|---------------------------------|------------------|------------------|
|                                 | 2019             | 2018             |
| Cash and cash equivalents:      |                  |                  |
| Cash                            | \$ 46,815        | \$ 45,806        |
| Money market funds              | 14               | 3,840            |
| Total cash and cash equivalents | 46,829           | 49,646           |
| Restricted cash                 | 628              | 628              |
|                                 | <u>\$ 47,457</u> | <u>\$ 50,274</u> |

The carrying amounts of the Company's money market funds approximate their fair values due to their nature, duration and short maturities.

**3. Fair Value Measurements**

The Company measures its cash equivalents and marketable securities at fair value on a recurring basis. Fair value is an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. The Company utilizes the following three-tier value hierarchy which prioritizes the inputs used in measuring fair value:

Level 1 – Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level 2 – Observable inputs other than quoted prices included in Level 1 for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-driven valuations in which all significant inputs and significant value drivers are observable in active markets.

Level 3 – Unobservable inputs to the valuation derived from fair valuation techniques in which one or more significant inputs or significant value drivers are unobservable. The fair value hierarchy also requires the Company to maximize the use of observable inputs, when available, and to minimize the use of unobservable inputs when determining inputs and determining fair value.

As of December 31, 2019 and 2018, the Company had money market funds of \$14,000 and \$3.8 million, respectively, and each was classified as a Level 1 financial asset. The fair values of money market funds classified as Level 1 were derived from quoted market prices as active markets for these instruments exist. The Company had no Level 2 or Level 3 financial assets.

**4. Balance Sheet Details**

Accounts receivable, net consisted of the following (in thousands):

|                                 | December 31,     |                  |
|---------------------------------|------------------|------------------|
|                                 | 2019             | 2018             |
| Accounts receivable             | \$ 46,883        | \$ 67,396        |
| Allowance for doubtful accounts | (374)            | (370)            |
|                                 | <u>\$ 46,509</u> | <u>\$ 67,026</u> |

The table below summarizes the changes in allowance for doubtful accounts and product return liability for the periods indicated (in thousands):

|                                     | Balance at Beginning<br>of Year | Additions Charged to<br>Costs or Expenses or<br>Revenue | Deductions and Write<br>Offs | Balance at<br>End of Year |
|-------------------------------------|---------------------------------|---|------------------------------|---------------------------|
| <b>Year Ended December 31, 2019</b> |                                 |   |                              |                           |
| Allowance for doubtful accounts     | \$ 370                          | \$ 168  | \$ (164)                     | \$ 374                    |
| Product return liability            | 880                             | 1,620   | (1,581)                      | 919                       |
| <b>Year Ended December 31, 2018</b> |                                 |   |                              |                           |
| Allowance for doubtful accounts     | \$ 579                          | \$ (5)  | \$ (204)                     | \$ 370                    |
| Product return liability            | 822                             | 771   | (713)                        | 880                       |
| <b>Year Ended December 31, 2017</b> |                                 |   |                              |                           |
| Allowance for doubtful accounts     | \$ 518                          | \$ 103  | \$ (42)                      | \$ 579                    |
| Product return liability            | 938                             | 3,682   | (3,798)                      | 822                       |

Inventory consisted of the following (in thousands):

|                | December 31,     |                  |
|----------------|------------------|------------------|
|                | 2019             | 2018             |
| Raw materials  | \$ 656           | \$ 10,815        |
| Finished goods | 39,497           | 39,336           |
|                | <u>\$ 40,153</u> | <u>\$ 50,151</u> |

Property and equipment, net consisted of the following (in thousands):

|   | December 31,     |                  |
|---|------------------|------------------|
|   | 2019             | 2018             |
| Test equipment                            | \$ 37,001        | \$ 39,148        |
| Software                                  | 20,646           | 24,355           |
| Computer equipment                        | 10,835           | 10,342           |
| Furniture and fixtures                    | 2,342            | 1,976            |
| Leasehold improvements                    | 2,047            | 3,559            |
|   | 72,871           | 79,380           |
| Accumulated depreciation and amortization | (51,344)         | (54,435)         |
|   | <u>\$ 21,527</u> | <u>\$ 24,945</u> |

Depreciation and amortization expenses were \$10.3 million, \$9.2 million and \$11.0 million for the years ended December 31, 2019, 2018 and 2017, respectively.

#### *Loss on Asset Retirement*

In July 2018, in connection with establishing a direct relationship with Verizon Communications, Inc. ("Verizon"), the Company licensed software from a former partner to support the Company's deployments at Verizon. During the third quarter of 2019, Verizon informed the Company that it no longer required this software. As a result, the Company wrote off the software in the third quarter of 2019, resulting in a \$2.5 million charge in the Company's Consolidated Statements of Comprehensive Income (Loss).

Other long-term assets consisted of the following (in thousands):

|  | December 31,     |                 |
|--|------------------|-----------------|
|  | 2019             | 2018            |
| Intangible asset                       | \$ 12,148        | \$ —            |
| Capitalized cloud implementation costs | 6,089            | —               |
| Other long-term assets                 | 1,203            | 1,203           |
|  | <u>\$ 19,440</u> | <u>\$ 1,203</u> |

### Intangible Asset Acquisition

In March 2018, the Company entered into an agreement with a vendor to develop certain software product and related enhancements pursuant to which the Company may be obligated to make minimum revenue-share payments under the program of up to \$15.8 million over the three years following availability for sale. The payments are based on a revenue-share rate applied to revenue from the developed-product and the corresponding hardware sales subject to a minimum and a maximum aggregate amount over the three-year sales period. The Company had its first sale in August 2019, and as a result, the Company capitalized an intangible asset with a value of \$13.2 million in the third quarter of 2019 and also recognized a liability of \$13.2 million (a non-cash investing activity). The balance of \$13.5 million is included in accrued liabilities and other long-term liabilities in the accompanying Consolidated Balance Sheet as of December 31, 2019. The values of the intangible asset and liability were based on the net present value of the expected payments using a 6.5% discount rate. The intangible asset has a five-year useful life and will be amortized using the ratio of current gross revenue for the products to the total of current and anticipated future gross revenue for the products, or the straight-line method, whichever is greater.

Accrued liabilities consisted of the following (in thousands):

|   | December 31,     |                  |
|---|------------------|------------------|
|   | 2019             | 2018             |
| Compensation and related benefits         | \$ 19,010        | \$ 19,811        |
| Warranty and retrofit                     | 7,294            | 8,547            |
| Customer advances or rebates              | 7,252            | 6,103            |
| Professional and consulting fees          | 4,996            | 6,060            |
| Current portion of financing arrangements | 4,044            | 2,359            |
| Operating leases                          | 2,663            | —                |
| Taxes payable                             | 2,021            | 1,516            |
| Component inventory held by suppliers     | 1,925            | 2,667            |
| Operations                                | 1,053            | 1,059            |
| Product returns                           | 919              | 880              |
| Insurance                                 | 852              | 917              |
| Freight                                   | 808              | 1,187            |
| Business events                           | —                | 1,696            |
| Other                                     | 4,709            | 5,067            |
|   | <u>\$ 57,546</u> | <u>\$ 57,869</u> |

Changes in the Company's accrued warranty and retrofit liability were as follows (in thousands):

|  | Years Ended December 31, |                 |                 |
|--|--------------------------|-----------------|-----------------|
|  | 2019                     | 2018            | 2017            |
| Balance at beginning of year                                   | \$ 8,547                 | \$ 8,708        | \$ 12,214       |
| Provision for warranty and retrofit charged to cost of revenue | 4,425                    | 5,215           | 8,720           |
| Utilization of reserve   | (5,678)                  | (5,376)         | (12,226)        |
| Balance at end of year   | <u>\$ 7,294</u>          | <u>\$ 8,547</u> | <u>\$ 8,708</u> |

### Accrued Restructuring Charges

The Company adopted a restructuring plan in March 2017. This restructuring plan realigned the Company's business, increasing its focus towards its investments in software defined access and cloud products, while reducing its expense structure in its traditional systems business. The Company began to take actions under this plan beginning in March 2017 and recognized \$4.2 million of restructuring charges for the year ended December 31, 2017, consisting primarily of severance and other one-time termination benefits. Actions pursuant to this restructuring plan were complete as of December 31, 2017.

The Company established a new restructuring plan in February 2018 to further align its business resources based on the production releases of its platform offerings. The Company incurred restructuring charges of approximately \$5.7 million for the year ended December 31, 2018, consisting primarily of severance and other termination related benefits.

The following table summarizes the activities pursuant to the above restructuring plans (in thousands):

|                                    | Severance and<br>Related Benefits | Facilities | Total    |
|------------------------------------|-----------------------------------|------------|----------|
| Balance as of December 31, 2017    | \$ 975                            | \$ 442     | \$ 1,417 |
| Restructuring charges for the year | 5,203                             | 502        | 5,705    |
| Cash payments                      | (6,178)                           | (916)      | (7,094)  |
| Balance as of December 31, 2018    | —                                 | 28         | 28       |
| Cash payments                      | —                                 | (28)       | (28)     |
| Balance as of December 31, 2019    | \$ —                              | \$ —       | \$ —     |

## 5. Credit Agreements

### *Line of Credit*

On August 7, 2017, the Company entered into a loan and security agreement with Silicon Valley Bank (the “SVB Loan Agreement”). The SVB Loan Agreement provides for a senior secured revolving credit facility, pursuant to which SVB agreed to make revolving advances available to the Company in a principal amount of up to \$30.0 million based on a customary accounts receivable borrowing base, subject to certain exceptions for accounts originating outside the United States and certain specific accounts, which could reduce the amount available to the Company under the credit facility.

The credit facility includes affirmative and negative covenants applicable to the Company and its subsidiaries. Furthermore, the SVB Loan Agreement requires the Company to maintain a liquidity ratio at minimum levels set forth in more detail in the SVB Loan Agreement. The credit facility also includes events of default, the occurrence and continuation of which, would provide SVB with the right to demand immediate repayment of any principal and unpaid interest under the credit facility, and to exercise remedies against the Company and the collateral securing the loans under the credit facility. In February 2019, the Company entered into a third amendment to the SVB Loan Agreement to reduce the required minimum level of the Adjusted Quick Ratio (“AQR”) for the first half of 2019 and the required minimum Adjusted EBITDA for the first fiscal quarter of 2019 to accommodate the increased costs and use of cash that the Company anticipated for the first half of 2019 related to activities to mitigate the impact of the U.S. tariffs. As of September 28, 2019 and December 31, 2019, the Company was in compliance with all these requirements except for the minimum AQR covenant. The Company was not able to maintain the minimum AQR at the level required in the SVB Loan Agreement, which constituted events of default. SVB waived the events of default effective as of September 28, 2019 and December 31, 2019, respectively, and, therefore, these defaults did not change the Company’s ability to borrow under the SVB Loan Agreement.

As of December 31, 2019 and 2018, the Company had borrowings outstanding of \$30.0 million under the line of credit, which represents the full capacity available under the facility. The Company’s interest rate on the line of credit was 6.3% as of December 31, 2019 and 7.0% as of December 31, 2018.

In January 2020, the Company replaced the SVB Loan Agreement with a new asset-based credit facility with Bank of America (“BoFA”). See Note 15 “*Subsequent Event*”.

### *Financing Arrangements*

During 2018, the Company entered into financing arrangements to purchase lab and test equipment for approximately \$5.1 million, which are non-cash investing activities. Each agreement is to be paid over 36 months with a weighted average interest rate of 6.2%. As of December 31, 2019, there was \$2.9 million outstanding under these financing arrangements, which is included in accrued liabilities and other long-term liabilities in the accompanying Consolidated Balance Sheet.

During 2017, 2018 and 2019, the Company entered into financing arrangements for consulting services of \$5.4 million in connection with the Company’s enterprise resource planning (“ERP”) implementation. These were non-cash investing activities of \$2.0 million, \$1.8 million and \$1.6 million for years ended December 31, 2019, 2018 and 2017, respectively. The current amounts due under this agreement are to be paid over a weighted average term of 2.4 years with a weighted average interest rate of 6.5%. As of December 31, 2019, there was \$2.1 million outstanding under these arrangements, which is included in accrued liabilities and other long-term liabilities in the accompanying Consolidated Balance Sheet.

**6. Commitments and Contingencies***Lease Commitments*

The Company leases office space under non-cancelable operating leases. Certain of the Company's operating leases contain renewal options and rent acceleration clauses. Future minimum payments under the non-cancelable operating leases consisted of the following as of December 31, 2019 (in thousands):

| <b>Year Ending December 31,</b>     | <b>Future Minimum Lease Payments</b> |
|-------------------------------------|--------------------------------------|
| 2020                                | \$ 3,769                             |
| 2021                                | 3,604                                |
| 2022                                | 3,461                                |
| 2023                                | 3,578                                |
| 2024                                | 3,388                                |
| Thereafter                          | 2,881                                |
| Total future minimum lease payments | 20,681                               |
| Less imputed interest               | (3,681)                              |
|                                     | <u>\$ 17,000</u>                     |

Operating lease liability consisted of the following (in thousands):

|   | <b>December 31,<br/>2019</b> |
|---|------------------------------|
| Accrued liabilities - current portion of operating leases | \$ 2,663                     |
| Operating leases  | 14,337                       |
|   | <u>\$ 17,000</u>             |

Prior to the adoption of Topic 842, future minimum lease payments under the non-cancelable operating leases as of December 31, 2018, which were undiscounted, were as follows (in thousands):

| <b>Year Ending December 31,</b> | <b>Future Minimum Lease Payments</b> |
|---------------------------------|--------------------------------------|
| 2019                            | \$ 3,750                             |
| 2020                            | 3,817                                |
| 2021                            | 3,468                                |
| 2022                            | 3,300                                |
| 2023                            | 3,411                                |
| Thereafter                      | 6,053                                |
|                                 | <u>\$ 23,799</u>                     |

The Company leases its headquarters office space in San Jose, California under a lease agreement that expires in December 2025. The future minimum lease payments under the lease are \$14.0 million and are included in the table for the year ended December 31, 2019 above.

In August 2018, the Company entered into a new office lease agreement in Petaluma, California. The lease commenced in February 2019 for a term of 64 months. The future minimum lease payments of \$2.5 million are included in the table for the year ended December 31, 2019 above. The Company recorded a right-of-use operating lease asset and operating lease liability of \$2.2 million in the first quarter of 2019. The Company's previous lease in Petaluma, California expired in March 2019.

The above tables also include future minimum lease payments for the Company's office facilities in Nanjing, China; Plymouth, Minnesota; Richardson, Texas; and West Jordan, Utah, which expire at various dates through 2025.

The weighted average discount rate for the Company's operating leases as of December 31, 2019 was 7.0%. The weighted average remaining lease term as of December 31, 2019 was 5.1 years.

For the years ended December 31, 2019, 2018 and 2017, total rent expense of the Company was \$4.7 million, \$3.4 million and \$3.7 million, respectively. Cash paid within operating cash flows for operating leases was \$3.7 million for year ended December 31, 2019.

### *Purchase Commitments*

The Company's CMs and ODMs place orders for certain component inventory in advance of the Company's orders based upon the Company's forecasts in order to reduce manufacturing lead times and ensure adequate component supply. The Company generally does not take ownership of the components held by CMs and ODMs. The Company places purchase orders with its CMs and ODMs in order to fulfill its monthly finished product inventory requirements. The Company incurs a liability when the CMs and ODMs convert the component inventory to a finished product subject to purchase orders and takes ownership of the finished goods inventory. In the event of termination of services with a manufacturing partner, the Company has purchased, and may be required to purchase in the future, certain of the remaining components inventory held by the CM or ODM as well as any outstanding orders pursuant to the contractual provisions with such CM or ODM. As of December 31, 2019, the Company had approximately \$52.5 million of outstanding purchase commitments for inventory to be delivered by its suppliers, including CMs and ODMs, within one year.

The Company has, from time to time and subject to certain conditions, purchased from suppliers component inventory when this inventory has been rendered excess or obsolete due to manufacturing and engineering change orders resulting from design changes or manufacturing discontinuation of parts by its suppliers, or in cases where inventory levels greatly exceed projected demand. The estimated excess and obsolete inventory at suppliers was \$1.9 million and \$2.7 million as of December 31, 2019 and 2018, respectively, which is included in accrued liabilities in the accompanying Consolidated Balance Sheets. The Company records the related charges in cost of systems revenue in its Consolidated Statements of Comprehensive Loss.

### *Litigation*

From time to time, the Company is involved in various legal proceedings arising from the normal course of business activities. The Company is not currently a party to any legal proceedings that, if determined adversely to the Company, in management's opinion, are currently expected to individually or in the aggregate have a material adverse effect on the Company's business, operating results or financial condition taken as a whole.

### *Indemnifications*

The Company from time to time enters into contracts that require it to indemnify various parties against claims from third parties. These contracts primarily relate to (i) certain real estate leases, under which the Company may be required to indemnify property owners for environmental and other liabilities, and other claims arising from the Company's use of the applicable premises, (ii) agreements with the Company's officers, directors and certain employees, under which the Company may be required to indemnify such persons for liabilities arising out of their relationship with the Company, (iii) contracts under which the Company may be required to indemnify customers against third-party claims that a Company product infringes a patent, copyright or other intellectual property right and (iv) agreements under which the Company may be required to indemnify the counterparty for certain claims that may be brought against them arising from the Company's acts or omissions with respect to the transactions contemplated by such agreements.

Because any potential obligation associated with these types of contractual provisions are not quantified or stated, the overall maximum amount of the obligation cannot be reasonably estimated. Historically, the Company has not been required to make payments under these obligations, and no liabilities have been recorded for these obligations in the accompanying Consolidated Balance Sheets.

## **7. Stockholders' Equity**

### *Preferred Stock*

The Board of Directors has the authority, without action by stockholders with the exception of stockholders who hold board positions, to designate and issue up to 5.0 million shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of the Company's preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of the Company or other corporate action. Since the Company's initial public offering, the Board of Directors has not designated any rights, preference or powers of any preferred stock and no shares of preferred stock have been issued.

### *Common Stock*

Holders of the Company's common stock are entitled to receive dividends, if any, as may be declared from time to time by the Board of Directors out of legally available funds. No dividends have been declared or paid as of December 31, 2019. In the



event of the Company's liquidation, dissolution or winding up, holders of the Company's common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of the Company's debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of preferred stock.

#### *Equity Incentive Plans*

##### *2019 Equity Incentive Award Plan*

At the Company's annual meeting of stockholders in May 2019, the stockholders approved the 2019 Equity Incentive Award Plan (the "2019 Plan"). The 2019 Plan supersedes and replaces the 2010 Equity Incentive Award Plan (the "2010 Plan") and preceding plans. No further awards will be granted under the 2010 Plan; however, the terms and conditions of the 2010 Plan will continue to govern any outstanding awards granted under the 2010 Plan.

Employees and consultants of the Company, its subsidiaries and affiliates, as well as members of the Company's Board of Directors, are eligible to receive awards under the 2019 Plan. The 2019 Plan provides for the grant of stock options, stock appreciation rights, restricted stock, RSUs, other stock or cash-based awards and dividend equivalents to eligible individuals.

The number of shares available for issuance under the 2019 Plan includes an initial reserve of 1.7 million shares of common stock, any shares of common stock that are available for issuance under the 2010 Plan as of the effective date of the 2019 Plan and any shares of common stock subject to issued and outstanding awards under the 2010 Plan that expire, are cancelled or otherwise terminate following the effective date of the 2019 Plan. As of December 31, 2019, there were 2.0 million shares available for issuance under the 2019 Plan.

Stock options granted under the 2019 Plan are granted in general at a price not less than 100% of the fair market value of the common stock on the date of grant. Stock options issued under the 2019 Plan generally vest 25% on the first anniversary of the vesting commencement date and on a quarterly basis thereafter for a period of an additional three years. The options have a maximum term of ten years.

Each RSU granted under the 2019 Plan represents a right to receive one share of the Company's common stock (subject to adjustment for certain specified changes in the capital structure of the Company) upon the completion of a specific period of continued service.

In October 2017, in connection with the hiring of its Chief Financial Officer, the Company made an "inducement" award of non-qualified stock options to purchase 0.3 million shares of the Company's common stock with an exercise price of \$5.05 per share, equal to the grant date fair value based upon the closing price of the Company's common stock. The stock option was granted outside the terms of the Company's 2010 Equity Incentive Award Plan (under the employee inducement award exemption under the New York Stock Exchange Listed Company Manual Rule 303A.08). The stock option will vest and become exercisable over four years from the date of grant, with 25% of the shares vesting on the one-year anniversary of the grant date and the remaining shares vesting quarterly thereafter over the next three years, subject to continued employment with the Company.

In December 2017, the Company granted 1.6 million shares of performance-based stock option awards to its executives. These performance-based stock option awards contain a one-year performance period and a subsequent two-year service period. The performance target is based on the Company's non-GAAP operating income during the performance period and accounted for as a performance condition. After the one-year performance period, if the performance target is met and subject to certification by the Compensation Committee of the Company's Board of Directors, each performance-based stock option award shall vest with respect to 50% of the earned shares on January 1, 2019 and 6.25% of the earned shares quarterly thereafter, subject to the executive's continuous service with the Company from the grant date through the respective vesting dates. If the performance target is not met, all such performance-based stock options shall be immediately forfeited and canceled. In November 2018, the Compensation Committee of the Company's Board of Directors modified the performance target. Subsequently, in February 2019, the Compensation Committee of the Company's Board of Directors concluded that the revised performance target was met based on the actual non-GAAP net income achieved for 2018. As such, each stock option was earned subject to the executive's continuous service with the Company from the grant date through the remaining vesting dates.

In February 2019, PSOs exercisable for up to an aggregate of 2.0 million shares of common stock were granted to Company executives with a grant date fair value of \$8.03 per share. These PSOs contain a one-year performance period and a subsequent three-year service period. The actual number of shares earned is contingent upon achievement of both annual and quarterly corporate financial targets for revenue, non-GAAP gross margin and non-GAAP net income per share for 2019 (collectively, the "2019 Performance Targets") during the one-year performance period. These PSOs would vest, subject to certification by the Compensation Committee of the Company's Board of Directors, of the achievement of the 2019 Performance Targets, as to 25% of the shares of common stock earned on the date of such certification, and as to the remaining 75% of the shares of common stock earned, in substantially equal quarterly installments over the subsequent 3 years, subject to the executive's continuous service with the Company through the respective vesting dates. If all of the 2019 Performance targets are met, each

executive receives 100% of their target shares. Furthermore, each executive may receive a number of shares above their target shares for achievement of at least 125% above the non-GAAP net income per share target, up to a maximum of 200% of the target shares for achievement above 125% of the net income per share target. In August 2019, the Compensation Committee of the Company's Board of Directors amended the 2019 Performance Targets to provide for the award of up to 40% of the total number of shares subject to a stock option award in the event the annual corporate financial targets are not met but the quarterly corporate financial targets are met. As a result, the probability of meeting some of the performance conditions related to these PSOs was assessed to be probable, and \$0.5 million of stock-based compensation expense was recognized in 2019.

*Stock Options*

The following table summarizes the activity of stock options under the Company's equity incentive plans (in thousands, except per share data):

| <b>Stock Options</b>                                | <b>Number of Shares</b> | <b>Weighted-Average Exercise Price Per Share</b> | <b>Weighted-Average Remaining Contractual Life (in years)</b> | <b>Aggregate Intrinsic Value <sup>(1)</sup></b> |
|---|-------------------------|--|---|---|
| Outstanding as of December 31, 2018                 | 4,442                   | \$ 7.40  |   |   |
| Granted   | 2,925                   | 7.97   |   |   |
| Exercised   | (74)                    | 5.94   |   |   |
| Canceled  | (416)                   | 7.45   |   |   |
| Outstanding as of December 31, 2019                 | 6,877                   | \$ 7.66  | 7.3   | \$ 5,303  |
| Vested and expected to vest as of December 31, 2019 | 6,782                   | \$ 7.66  | 7.3   | \$ 5,235  |
| Options exercisable as of December 31, 2019         | 3,199                   | \$ 7.82  | 5.3   | \$ 3,448  |

(1) Amounts represent the difference between the exercise price and the fair market value of common stock at December 31, 2019 of \$8.00 per share for all in the money options outstanding.

During the years ended December 31, 2019, 2018 and 2017, total intrinsic value of stock options exercised was \$0.2 million, \$0.1 million and \$10 thousand, respectively. Total cash received from employees as a result of stock option exercises in 2019, 2018 and 2017 was \$0.4 million, \$0.4 million and \$0.1 million, respectively. Total fair values of stock options vested during 2019, 2018 and 2017 were \$7.6 million, \$2.7 million and \$2.1 million, respectively.

*Restricted Stock Units and Performance Restricted Stock Units ("RSUs")*

The following table summarizes the activities of the Company's RSUs and PRSUs under the Company's equity incentive plans (in thousands, except per share data):

|                                  | <b>RSUs</b>             |   | <b>PRSUs</b>            |   |
|----------------------------------|-------------------------|---|-------------------------|---|
|                                  | <b>Number of Shares</b> | <b>Weighted-Average Grant Date Fair Value Per Share</b> | <b>Number of Shares</b> | <b>Weighted-Average Grant Date Fair Value Per Share</b> |
| Outstanding at December 31, 2018 | 788                     | \$ 7.26   | 63                      | \$ 7.42   |
| Granted                          | 190                     | 6.62  | —                       | —   |
| Vested                           | (571)                   | 7.39  | (63)                    | 7.42  |
| Canceled                         | (73)                    | 7.10  | —                       | —   |
| Outstanding at December 31, 2019 | 334                     | \$ 6.71   | —                       | \$ —  |

Upon vesting of certain RSUs and PRSUs, the Company withheld shares with value equivalent to the employees' minimum statutory obligation for the applicable income and other employment taxes and remitted the cash to the appropriate taxing authorities. The number of shares withheld was based on the value of the RSUs or PRSUs on their vesting date as determined by the Company's closing stock price. The withheld shares are reserved for future grant and issuance under the 2019 Plan.

*Employee Stock Purchase Plans*

The Company maintains two employee stock purchase plans - the ESPP and the NQ ESPP.

The ESPP allows eligible employees to purchase shares of the Company’s common stock through payroll deductions of up to 15% of their annual compensation subject to certain Internal Revenue Code limitations. In addition, no participant may purchase more than 2,000 shares of common stock in each offering period.

The offering periods under the ESPP are six-month periods commencing on May 15<sup>th</sup> and November 15<sup>th</sup> of each year. The price of common stock purchased under the ESPP is 85% of the lower of the fair market value of the common stock on the commencement date and the end date of each six-month offering period.

At the Company’s annual meeting of stockholders in May 2019, the stockholders approved an increase in the number of shares of common stock issuable under the ESPP by 2.5 million shares. The total shares authorized for issuance under the ESPP increased from 7.3 million shares to 9.8 million shares. For the year ended December 31, 2019, shares totaling 0.9 million were purchased and issued. As of December 31, 2019, there were 3.2 million shares available for future issuance.

The NQ ESPP allows eligible employees to purchase shares of the Company’s common stock through payroll deductions of up to 25% of their annual compensation. Eligible employees have the right to (a) purchase the maximum number of whole shares of common stock that can be purchased with the elected payroll deductions during each offering period for which the employee is enrolled at a purchase price equal to the closing price of the Company’s common stock on the last day of such offering period and (b) receive an equal number of shares of the Company’s common stock that are subject to a risk of forfeiture in the event the employee terminates employment within the one year period immediately following the purchase date. The NQ ESPP provides six-month offering periods commencing June 21<sup>st</sup> and December 21<sup>st</sup> of each year. At the Company’s annual meeting of stockholders in May 2018, the stockholders approved an amendment of certain terms and an increase in the number of shares of common stock issuable under the NQ ESPP by 2.5 million shares. The maximum number of shares of common stock currently authorized for issuance under the NQ ESPP as of December 31, 2019 is 3.5 million shares, with a maximum of 0.5 million shares allocated per purchase period. For the year ended December 31, 2019, 0.5 million shares were purchased and issued, with an additional equal number of shares issued subject to a risk of forfeiture. As of December 31, 2019, there were 2.0 million shares available for future issuance.

*Stock-Based Compensation*

During the years ended December 31, 2019, 2018 and 2017, the Company recorded stock-based compensation expense of \$11.2 million, \$17.5 million and \$12.4 million, respectively.

The following table summarizes stock-based compensation expense (in thousands):

|                            | Years Ended December 31, |                  |                  |
|----------------------------|--------------------------|------------------|------------------|
|                            | 2019                     | 2018             | 2017             |
| Cost of revenue:           |                          |                  |                  |
| Products                   | \$ 507                   | \$ 885           | \$ 473           |
| Services                   | 389                      | 363              | 276              |
| Research and development   | 3,913                    | 5,969            | 4,869            |
| Sales and marketing        | 3,415                    | 5,787            | 3,433            |
| General and administrative | 2,957                    | 4,469            | 3,317            |
|                            | <u>\$ 11,181</u>         | <u>\$ 17,473</u> | <u>\$ 12,368</u> |

The following table summarizes the weighted-average grant date fair values of the Company’s stock-based awards granted in the periods indicated:

|                   | Years Ended December 31, |         |         |
|-------------------|--------------------------|---------|---------|
|                   | 2019                     | 2018    | 2017    |
| Stock options     | \$ 3.66                  | \$ 3.41 | \$ 3.19 |
| RSUs              | 6.62                     | 6.66    | 6.75    |
| ESPP              | 2.04                     | 2.21    | 1.76    |
| Nonqualified ESPP | 7.24                     | 7.34    | 6.90    |

The Company values the RSUs and employee stock purchase rights under the Nonqualified ESPP at the closing market price of the Company’s common stock on the date of grant.

The probability of meeting the performance condition related to the PSOs granted in December 2017 was assessed as probable as of December 31, 2018. As a result, the Company recognized a stock-based compensation expense of \$6.9 million in 2018 and \$1.6 million in 2019, based on a fair value assessment as of the date of modification. The probability of meeting one of the performance conditions related to the PSOs granted in February 2019 was assessed as probable as of December 31, 2019. As a

result, the Company recognized a cumulative stock-based compensation expense of \$0.5 million in 2019, based on a fair value assessment as of the date of modification. The Company estimates the fair value of stock options and employee stock purchase right under the ESPP at the grant date using the Black-Scholes option-pricing model. This model requires the use of the following assumptions:

- (i) Expected volatility of the Company's common stock – The Company computes its expected volatility assumption based on a blended volatility (50% historical volatility and 50% implied volatility from traded options on the Company's common stock). The selection of a blended volatility assumption was based upon the Company's assessment that a blended volatility is more representative of the Company's future stock price trend as it weighs the historical volatility with the future implied volatility.
- (ii) Expected life of the option award – Represents the weighted-average period that the stock options are expected to remain outstanding. The Company's computation of expected life utilizes the simplified method in accordance with Staff Accounting Bulletin No. 110 ("SAB 110") due to the lack of sufficient historical exercise data to provide a reasonable basis upon which to estimate expected term. The mid-point between the vesting date and the expiration date is used as the expected term under this method.
- (iii) Expected dividend yield – Assumption is based on the Company's history of not paying dividends and no future expectations of dividend payouts.
- (iv) Risk-free interest rate – Based on the U.S. Treasury yield curve in effect at the time of grant with maturities approximating the grant's expected life.

The following table summarizes the weighted-average assumptions used in estimating the grant-date fair value of stock options and of each employee's purchase right under the ESPP in the periods indicated:

| <b>Stock Options</b>    | <b>Years Ended December 31,</b> |             |             |
|-------------------------|---------------------------------|-------------|-------------|
|                         | <b>2019</b>                     | <b>2018</b> | <b>2017</b> |
| Expected volatility     | 47%                             | 50%         | 52%         |
| Expected life (years)   | 6.11                            | 6.11        | 5.88        |
| Expected dividend yield | —                               | —           | —           |
| Risk-free interest rate | 1.67%                           | 2.83%       | 2.10%       |

| <b>ESPP</b>             | <b>Years Ended December 31,</b> |             |             |
|-------------------------|---------------------------------|-------------|-------------|
|                         | <b>2019</b>                     | <b>2018</b> | <b>2017</b> |
| Expected volatility     | 48%                             | 42%         | 45%         |
| Expected life (years)   | 0.49                            | 0.50        | 0.49        |
| Expected dividend yield | —                               | —           | —           |
| Risk-free interest rate | 2.03%                           | 2.21%       | 1.24%       |

In addition, the Company applies an estimated forfeiture rate to awards granted and records stock-based compensation expense only for those awards that are expected to vest. Forfeiture rates are estimated at the time of grant based on the Company's historical experience. Further, to the extent the Company's actual forfeiture rate is different from management's estimate, stock-based compensation is adjusted accordingly.

As of December 31, 2019, unrecognized stock-based compensation expenses by award type, net of estimated forfeitures, and their expected weighted-average recognition periods are summarized in the following table (in thousands).

|   | <b>December 31, 2019</b> |            |              |
|---|--------------------------|------------|--------------|
|   | <b>Stock Option</b>      | <b>RSU</b> | <b>ESPPs</b> |
| Unrecognized stock-based compensation expense   | \$ 5,327                 | \$ 1,254   | \$ 4,208     |
| Weighted-average amortization period (in years) | 2.9                      | 0.6        | 1.1          |

The Company expects to recognize stock-based compensation expense of \$7.1 million in 2020, \$2.0 million in 2021, \$1.0 million in 2022 and \$0.7 million in 2023.

*Shares Reserved for Future Issuance*

The Company had common shares reserved for future issuance as follows (in thousands):

|  | December 31, |        |
|--|--------------|--------|
|  | 2019         | 2018   |
| Stock options outstanding                                    | 6,877        | 4,442  |
| Restricted stock units outstanding                           | 334          | 788    |
| Performance restricted stock units outstanding               | —            | 63     |
| Shares available for future grant under 2019 Plan            | 2,034        | 2,306  |
| Shares available for future issuance under ESPP              | 3,178        | 1,550  |
| Shares available for future issuance under Nonqualified ESPP | 2,021        | 2,764  |
|  | 14,444       | 11,913 |

**8. Employee Benefit Plan**

The Company sponsors a 401(k) tax-deferred savings plan for all employees who meet certain eligibility requirements. Participants may contribute, on a pre-tax basis, a percentage of their annual compensation, but not to exceed a maximum contribution amount pursuant to Section 401(k) of the Internal Revenue Code. The Company, at the discretion of the Board of Directors, may make additional matching contributions on behalf of the participants. The Company made matching contributions totaling \$2.5 million, \$2.5 million and \$3.0 million in 2019, 2018 and 2017, respectively.

**9. Accumulated Other Comprehensive Loss**

The table below summarizes the changes in accumulated other comprehensive loss by component:

|                              | Foreign Currency<br>Translation<br>Adjustments |
|------------------------------|--|
| Balance at December 31, 2017 | \$ (169)                                       |
| Other comprehensive loss     | (584)  |
| Balance at December 31, 2018 | (753)  |
| Other comprehensive loss     | (101)  |
| Balance at December 31, 2019 | \$ (854)                                       |

Assets and liabilities of the Company's wholly owned foreign subsidiaries are translated from their respective functional currencies at exchange rates in effect at the balance sheet date, and revenue and expenses are translated at the monthly average exchange rates. These translations result in differences called foreign currency translation adjustments. Realized foreign currency transaction gains or losses were not significant during the years ended December 31, 2019, 2018 and 2017 and are recorded in "Other income (expense), net" in the Company's Consolidated Statements of Comprehensive Loss.

**10. Income Taxes**

The domestic and foreign components of loss before provision for incomes taxes were as follows (in thousands):

|          | Years Ended December 31, |             |             |
|----------|--------------------------|-------------|-------------|
|          | 2019                     | 2018        | 2017        |
| Domestic | \$ (17,935)              | \$ (20,463) | \$ (84,387) |
| Foreign  | 1,403                    | 1,695       | 2,598       |
|          | \$ (16,532)              | \$ (18,768) | \$ (81,789) |

Provision for income taxes consisted of the following (in thousands):

|                             | Years Ended December 31, |               |                 |
|-----------------------------|--------------------------|---------------|-----------------|
|                             | 2019                     | 2018          | 2017            |
| Current:                    |                          |               |                 |
| State                       | \$ 313                   | \$ 105        | \$ 115          |
| Foreign                     | 835                      | 360           | 577             |
| Current income tax          | 1,148                    | 465           | 692             |
| Deferred foreign income tax | 14                       | 65            | 551             |
|                             | <u>\$ 1,162</u>          | <u>\$ 530</u> | <u>\$ 1,243</u> |

The differences between the statutory tax rate and the effective tax rate, expressed as a percentage of loss before income taxes, were as follows:

|                                   | Years Ended December 31, |               |               |
|-----------------------------------|--------------------------|---------------|---------------|
|                                   | 2019                     | 2018          | 2017          |
| Federal statutory rate            | 21.0 %                   | 21.0 %        | 34.0 %        |
| State statutory rate              | 5.6                      | 5.7           | 4.5           |
| Foreign operations                | (2.8)                    | 0.3           | 0.5           |
| R&D tax credits                   | 6.2                      | 7.2           | 2.7           |
| Foreign income inclusion          | (1.3)                    | (1.2)         | (0.1)         |
| Non-deductible stock compensation | (5.1)                    | (4.3)         | (3.7)         |
| Other permanent items             | (2.0)                    | (1.6)         | (0.4)         |
| Tax true-up                       | (11.8)                   | (2.3)         | (1.7)         |
| Valuation allowance               | (16.9)                   | (25.6)        | 67.3          |
| Tax reform                        | —                        | —             | (104.6)       |
| ASC 606 adjustment                | —                        | (2.0)         | —             |
| Effective tax rate                | <u>(7.1)%</u>            | <u>(2.8)%</u> | <u>(1.5)%</u> |

The significant components of the Company's deferred tax assets were as follows (in thousands):

|                                  | December 31,   |             |
|----------------------------------|----------------|-------------|
|                                  | 2019           | 2018        |
| Deferred tax assets:             |                |             |
| Net operating loss carryforwards | \$ 135,019     | \$ 132,420  |
| Tax credit carryforwards         | 47,324         | 46,884      |
| Depreciation and amortization    | 1,541          | 1,924       |
| Accruals and reserves            | 9,316          | 10,021      |
| Deferred revenue                 | 8,488          | 7,815       |
| Stock-based compensation         | 4,761          | 4,447       |
| Intangible assets                | (111)          | 37          |
| Other                            | (10)           | 5           |
| Gross deferred tax assets        | 206,328        | 203,553     |
| Valuation allowance              | (206,339)      | (203,550)   |
|                                  | <u>\$ (11)</u> | <u>\$ 3</u> |

All deferred tax assets, along with any related valuation allowance, are classified in the Consolidated Balance Sheet as long-term.

Management reviews the recognition of deferred tax assets to determine if realization of such assets is more likely than not. The realization of the Company's deferred tax assets is dependent upon future earnings. The Company has been in a cumulative loss position since inception, which represents a significant piece of negative evidence. Using the more likely than not criteria specified in the applicable accounting guidance, this negative evidence cannot be overcome by positive evidence currently available to the Company. As a result, the Company has established a full valuation allowance against its deferred tax assets with the exception of certain foreign deferred tax assets. The Company's valuation allowance increased by \$2.8 million and \$4.8 million for the years ended December 31, 2019 and 2018, respectively.

As of December 31, 2019, the Company had U.S. federal and state net operating losses of approximately \$608.9 million and \$216.4 million, respectively. The U.S. federal net operating loss carryforwards have begun to expire and will continue to expire at various dates through 2039 if not utilized. The state net operating loss carryforwards have begun to expire and will continue to expire at various dates through 2039, if not utilized. Additionally, the Company has U.S. federal, California and other U.S. states research and development credits of approximately \$35.0 million, \$36.2 million and \$3.0 million, respectively, as of December 31, 2019. The U.S. federal research and development credits will begin to expire in 2020 and the California research and development credits have no expiration date. The credits related to other various U.S. states have begun to expire and will continue to expire at various dates through 2034.

In 2019, the Company reassessed its plan to continue to reinvest its foreign earnings overseas. The Company no longer asserts ASC 740-30 indefinite reinvestment of its historical non-U.S. earnings or future non-U.S. earnings. As such, the Company recorded a tax expense of \$0.6 million for the estimated withholding, state income tax and foreign income tax associated with repatriating non-U.S. earnings back to the United States.

**Uncertain Tax Positions**

ASC 740, "Income Taxes," prescribes a recognition threshold and measurement attribute to the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The guidance also provides guidance on derecognition, classification, accounting in interim periods and disclosure requirements for uncertain tax positions. The standard requires the Company to recognize the financial statement effects of an uncertain tax position when it is more likely than not that such position will be sustained upon audit. The Company recognizes accrued interest and penalties related to unrecognized tax benefits as interest expense and income tax expense, respectively, in statements of comprehensive loss.

The following table reconciles the Company's unrecognized tax benefits (in thousands):

|  | Years Ended December 31, |                  |
|--|--------------------------|------------------|
|  | 2019                     | 2018             |
| Balance at beginning of year                                 | \$ 21,998                | \$ 20,289        |
| Addition (reduction) for tax positions related to prior year | (382)                    | 516              |
| Additions for tax positions related to current year          | 648                      | 1,193            |
| Balance at end of year                                       | <u>\$ 22,264</u>         | <u>\$ 21,998</u> |

As of December 31, 2019 and 2018, the Company had unrecognized tax benefits of \$22.3 million and \$22.0 million, respectively, none of which would affect the Company's effective tax rate if recognized. There were no accrued interest or penalties for uncertain income tax as of December 31, 2019.

The Company files tax returns in the United States and various state jurisdictions, the United Kingdom, China and Brazil. The tax years 2000 through 2019 remain open and subject to examination by the appropriate governmental agencies in the U.S. due to tax attribute carryforwards.

**11. Net Loss Per Common Share**

The following table sets forth the computation of basic and diluted net loss per common share for the periods indicated (in thousands, except per share data):

|   | Years Ended December 31, |                  |                  |
|---|--------------------------|------------------|------------------|
|   | 2019                     | 2018             | 2017             |
| <b>Numerator:</b>                             |                          |                  |                  |
| Net loss                                      | \$ (17,694)              | \$ (19,298)      | \$ (83,032)      |
| <b>Denominator:</b>                           |                          |                  |                  |
| Weighted-average common shares outstanding    | 54,993                   | 52,609           | 50,155           |
| Basic and diluted net loss per common share   | <u>\$ (0.32)</u>         | <u>\$ (0.37)</u> | <u>\$ (1.66)</u> |
| Potentially dilutive shares, weighted-average | 6,607                    | 5,833            | 3,446            |

Unvested restricted stock awards are included in the calculation of basic weighted-average shares because such shares are participating securities; however, the impact was immaterial.

Potentially dilutive shares have been excluded from the computation of diluted net loss per common share when their effect is antidilutive. These antidilutive shares were primarily from stock options and RSUs. For each of the periods presented where the Company reported a net loss, the effect of all potentially dilutive securities would be antidilutive, and as a result diluted net loss per common share is the same as basic net loss per common share.

## 12. Revenue from Contracts with Customers

The Company develops, markets and sells communications access systems and software, and there are no segment managers who are held accountable for operations, operating results and plans for levels or components below the Company unit level. Accordingly, the Company is considered to be in a single reporting segment and operating unit structure. The Company's chief operating decision maker is the Company's Chief Executive Officer, who reviews financial information presented on a Company-wide basis, for purposes of allocating resources and evaluating financial performance.

### Geographic Information:

The following is a summary of revenue by geographic region based upon the location of the customers (in thousands):

|               | Years Ended December 31, |                   |                     |
|---------------|--------------------------|-------------------|---------------------|
|               | 2019                     | 2018              | 2017 <sup>(1)</sup> |
| United States | \$ 365,586               | \$ 386,341        | \$ 452,956          |
| Middle East   | 18,664                   | 18,814            | 18,267              |
| Canada        | 14,531                   | 10,542            | 13,105              |
| Europe        | 11,480                   | 8,858             | 6,575               |
| Caribbean     | 5,809                    | 7,075             | 9,853               |
| Other         | 8,260                    | 9,690             | 9,611               |
|               | <u>\$ 424,330</u>        | <u>\$ 441,320</u> | <u>\$ 510,367</u>   |

(1) Revenue amounts are accounted for under ASC 605 for 2017.

The Company's property and equipment, net of accumulated depreciation, are located in the following geographical areas (in thousands):

|               | December 31,     |                  |
|---------------|------------------|------------------|
|               | 2019             | 2018             |
| United States | \$ 20,510        | \$ 23,249        |
| China         | 1,017            | 1,696            |
|               | <u>\$ 21,527</u> | <u>\$ 24,945</u> |

### Contract Asset

The primary contract asset is revenue recognized on professional services contracts where the services are transferred to the customer over time, which has yet to be billed, and is classified within accounts receivable. Amounts are billed in accordance with the agreed-upon contractual terms. The balance at December 31, 2018 was \$5.9 million of which \$1.0 million remained in the Company's Consolidated Balance Sheet at December 31, 2019. The closing balance at December 31, 2019 was \$5.0 million of which the Company expects to bill 82% of the balance during 2020. The decrease in the contract asset was driven by the timing and volume of professional services contracts with a major customer in fiscal 2019 partially offset by additional business from other customers.

### Contract Liability

Deferred revenue consisted of the following (in thousands):

|                       | December 31,     |                  |
|-----------------------|------------------|------------------|
|                       | 2019             | 2018             |
| Current:              |                  |                  |
| Products and services | \$ 12,480        | \$ 11,600        |
| Extended warranty     | 4,678            | 4,000            |
|                       | <u>17,158</u>    | <u>15,600</u>    |
| Long-term:            |                  |                  |
| Products and services | 790              | 440              |
| Extended warranty     | 17,550           | 17,056           |
|                       | <u>18,340</u>    | <u>17,496</u>    |
|                       | <u>\$ 35,498</u> | <u>\$ 33,096</u> |



The increase in the deferred revenue balance for the year ended December 31, 2019 is primarily driven by cash payments received or due in advance of satisfying the Company's performance obligations, offset by \$15.0 million of revenue recognized that was included in the deferred revenue balance at the beginning of the year.

Revenue allocated to remaining performance obligations represent contract revenue that has not yet been recognized for contracts greater than one year, which includes deferred revenue and amounts that will be invoiced and recognized as revenue in future periods. This amount was \$57.7 million as of December 31, 2019, and the Company expects to recognize 40% of such revenue over the next 12 months and the remainder thereafter.

#### *Contract Costs*

The Company capitalizes certain sales commissions related primarily to extended warranty and Calix Cloud products for which the expected amortization period is greater than one year. As of December 31, 2019, the unamortized balance of deferred commissions was \$0.7 million. For the year ended December 31, 2019, the amount of amortization was \$0.2 million, and there was no impairment loss in relation to the costs capitalized.

#### *Concentration of Customer Risk*

Concentrations of credit risk in relation to customers with an accounts receivable balance of 10% or greater of total accounts receivable and customers with net revenue of 10% or greater of total revenue are presented below for the periods indicated.

|             | Percentage of Accounts Receivable |      | Percentage of Revenue    |      |      |
|-------------|-----------------------------------|------|--------------------------|------|------|
|             | December 31,                      |      | Years Ended December 31, |      |      |
|             | 2019                              | 2018 | 2019                     | 2018 | 2017 |
| CenturyLink | 17%                               | 16%  | 15%                      | 18%  | 31%  |

### **13. Product Line Divestiture**

In February 2018, the Company sold its outdoor cabinet product line to Clearfield, Inc. ("Clearfield") for \$10.4 million in cash as well as the assumption by Clearfield of the related product warranty liabilities and open purchase order commitments with a CM. The Company transferred \$2.1 million in net inventory and agreed to solicit orders on Clearfield's behalf on the newly transferred outdoor cabinets product lines free of charge for 15 months. The Company established a liability of \$1.6 million in deferred revenue for providing this service and amortized this amount to service revenue over the corresponding 15-month period. The Company also recognized a \$6.7 million gain for the year ended December 31, 2018 within operating expenses in the accompanying Consolidated Statements of Comprehensive Loss.

### **14. Quarterly Financial Data—Unaudited**

The Company's fiscal year begins on January 1st and ends on December 31<sup>st</sup>. Quarterly periods are based on a 4-4-5 fiscal calendar with the first, second and third fiscal quarters ending on the 13<sup>th</sup> Saturday of each fiscal period. As a result, the Company had one fewer day in the first quarter of 2019 and one more day in the fourth quarter of 2019 than in the respective 2018 periods.

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The following table presents selected unaudited quarterly financial data of the Company (in thousands, except per share data). The Company's quarterly results of operations for these periods are not necessarily indicative of future results of operations.

|   | Fiscal Year 2019 Quarter Ended |            |              |             |
|---|--------------------------------|------------|--------------|-------------|
|   | March 30                       | June 29    | September 28 | December 31 |
| Revenue   | \$ 89,350                      | \$ 100,304 | \$ 114,485   | \$ 120,191  |
| Gross profit  | 38,343                         | 44,668     | 50,202       | 54,712      |
| Operating income (loss)                               | (9,113)                        | (4,931)    | (2,851)      | 1,494       |
| Net income (loss)                                     | (9,767)                        | (5,045)    | (3,379)      | 497         |
| Net income (loss) per common share, basic and diluted | \$ (0.18)                      | \$ (0.09)  | \$ (0.06)    | \$ 0.01     |

|   | Fiscal Year 2018 Quarter Ended |            |              |             |
|---|--------------------------------|------------|--------------|-------------|
|   | March 31                       | June 30    | September 29 | December 31 |
| Revenue   | \$ 99,403                      | \$ 111,702 | \$ 114,699   | \$ 115,516  |
| Gross profit  | 42,059                         | 50,866     | 52,833       | 51,624      |
| Operating income (loss)                               | (11,109)                       | (2,926)    | 676          | (5,155)     |
| Net income (loss)                                     | (11,736)                       | (2,793)    | 809          | (5,578)     |
| Net income (loss) per common share, basic and diluted | \$ (0.23)                      | \$ (0.05)  | \$ 0.02      | \$ (0.10)   |

### 15. Subsequent Event

In January 2020, the Company terminated the SVB Loan Agreement and entered into a new loan and security agreement with Bank of America, N.A. The new loan and security agreement ("BofA Loan Agreement") provides for a revolving facility up to a principal amount of up to \$35.0 million, including a \$10.0 million sublimit for letters of credit. The BofA Loan Agreement matures, and all outstanding amounts become due and payable, in January 2023. The BofA Loan Agreement is secured by substantially all of the Company's assets, including the Company's intellectual property. Loans under the credit facility will bear interest at a rate per annum equal to LIBOR (customarily defined) plus an applicable margin between 1.50% to 2.25% and Prime Rate (customarily defined) plus an applicable margin between 0.50% to 1.25%, in each case largely based on a fixed charge coverage ratio measured at the end of each fiscal quarter. The Availability (as defined in the BofA Loan Agreement) of borrowings under the BofA Loan Agreement is subject to certain conditions and requirements, including among others, if at any time the Company's Availability is less than \$5.0 million, the Company must maintain a minimum fixed charge coverage ratio of 1.0 to 1.0.

**ITEM 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure**

There were no changes in nor any disagreements with accountants on accounting principles or practices, financial statement disclosure, auditing scope or procedures, or other reportable events requiring disclosure pursuant to Item 304(b) of Regulation S-K.

**ITEM 9A. Controls and Procedures**

***Evaluation of Disclosure Controls and Procedures***

As of the end of the period covered by this report, which we refer to as the evaluation date, we carried out an evaluation under the supervision and with the participation of management, including our principle executive officer and principle financial officer, of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act).

The purpose of this evaluation was to determine whether as of the evaluation date our disclosure controls and procedures were effective to provide reasonable assurance that the information we are required to disclose in our filings with the SEC, (i) is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and (ii) accumulated and communicated to our management, including our principal executive officer and our principal financial officer, as appropriate to allow timely decisions regarding required disclosure. Based upon this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this report.

***Management's Report on Internal Control Over Financial Reporting***

Management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. Management has evaluated the effectiveness of our internal control over financial reporting as of December 31, 2019 using the criteria set forth in the Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission, or COSO, (2013 framework). Based on our evaluation, management has concluded that we maintained effective control over financial reporting as of December 31, 2019 based on the COSO criteria. The effectiveness of our internal control over financial reporting as of December 31, 2019 has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report included in this Annual Report on Form 10-K.

***Limitations on the Effectiveness of Controls***

Our disclosure controls and procedures provide our principal executive officer and our principal financial officer reasonable assurances that our disclosure controls and procedures will achieve their objectives. However, our management, including our principal executive officer and our principal financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting can or will prevent all human error. A control system, no matter how well designed and implemented, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Furthermore, the design of a control system must reflect the fact that there are internal resource constraints, and the benefit of controls must be weighed relative to their corresponding costs. Because of the limitations in all control systems, no evaluation of controls can provide complete assurance that all control issues and instances of error, if any, within our company are detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur due to human error or mistake. Additionally, controls, no matter how well designed, could be circumvented by the individual acts of specific persons within the organization. The design of any system of controls is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated objectives under all potential future conditions.

***Changes in Internal Control over Financial Reporting***

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the fourth quarter of 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**ITEM 9B. Other Information**

None.

### PART III

#### **ITEM 10. Directors, Executive Officers and Corporate Governance**

Information required by this Item 10 relating to our directors is incorporated by reference to the information set forth under the captions “Proposal No. 1—Election of Directors” and “Director Compensation” and in other applicable sections of the Proxy Statement for the 2020 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A of the Exchange Act, or the Proxy Statement, to be filed within 120 days of the end of the fiscal year covered by this Report. Information required by this Item 10 relating to our officers is incorporated by reference to the information set forth under the captions “Executive Officers” and “Executive Compensation” and in other applicable sections of the Proxy Statement. Information regarding our Section 16 reporting compliance is incorporated by reference to the information set forth under the captions “Security Ownership of Certain Beneficial Owners and Management” and “Section 16(a) Beneficial Ownership Reporting Compliance” of the Proxy Statement.

We have adopted a code of ethics, which applies to all employees, officers and directors of Calix. The Code of Business Conduct and Ethics meets the requirements of a “code of ethics” as defined by Item 406 of Regulation S-K, and applies to our Chief Executive Officer, Chief Financial Officer and all other employees, as indicated above. The Code of Business Conduct and Ethics also meets the requirements of a code of conduct under NYSE listing standards. The Code of Business Conduct and Ethics is posted on our website at [www.calix.com](http://www.calix.com) under the links “About - Investor Relations - Governance - Code of Conduct.” We intend to disclose any amendments to the Code of Business Conduct and Ethics, as well as any waivers for executive officers or directors, on our website at [www.calix.com](http://www.calix.com).

#### **ITEM 11. Executive Compensation**

Information required by this Item 11 relating to executive compensation and other matters is incorporated by reference to the information set forth under the caption “Compensation Discussion and Analysis” and in other applicable sections of the Proxy Statement.

#### **ITEM 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters**

Information required by this Item 12 relating to security ownership of certain beneficial owners and management and related stockholder matters is incorporated by reference to the information set forth under the caption “Security Ownership of Certain Beneficial Owners and Management” and in other applicable sections of the Proxy Statement. Information regarding securities authorized for issuance under our equity compensation plans is incorporated by reference to the information set forth under the caption “Equity Compensation Plan Information” of the Proxy Statement.

#### **ITEM 13. Certain Relationships and Related Transactions, and Director Independence**

Information required by this Item 13 relating to certain relationships and related transactions and director independence is incorporated by reference to the information set forth under the caption “Certain Relationships and Related Transactions” and in other applicable sections of the Proxy Statement.

#### **ITEM 14. Principal Accountant Fees and Services**

Information required by this Item 14 relating to principal account fees and services is incorporated by reference to the information set forth under the caption “Principal Accountant Fees and Services” of the Proxy Statement.

**PART IV****ITEM 15. Exhibits, Financial Statement Schedules**

(a) The following documents are filed as part of this Report:

**1. Consolidated Financial Statements**

The consolidated financial statements of Calix and the report of independent registered public accounting firm thereon are set forth under Part II, Item 8 of this report.

|   |    |
|---|----|
| <a href="#">Report of Independent Registered Public Accounting Firm</a>                                       | 57 |
| <a href="#">Consolidated Balance Sheets, As of December 31, 2019 and 2018</a>                                 | 58 |
| <a href="#">Consolidated Statements of Comprehensive Loss, Years Ended December 31, 2019, 2018 and 2017</a>   | 59 |
| <a href="#">Consolidated Statements of Stockholders' Equity, Years Ended December 31, 2019, 2018 and 2017</a> | 60 |
| <a href="#">Consolidated Statements of Cash Flows, Years Ended December 31, 2019, 2018 and 2017</a>           | 61 |
| <a href="#">Notes to Consolidated Financial Statements</a>  | 62 |

**2. Consolidated Financial Statement Schedules**

All schedules have been omitted because they are not applicable, not required, not presently in amounts sufficient to require submission of the schedule, or the information required to be set forth therein is included in the consolidated financial statements or notes thereto.

**3. Exhibits**

The following exhibits are filed with or incorporated by reference in this report. Where such filing is made by incorporation by reference to a previously filed registration statement or report, such registration statement or report is identified in parentheses. We will furnish any exhibit upon request to: Calix Investor Relations, Thomas J. Dinges at Tom.Dinges@calix.com.

| Exhibit<br>Number | Description   |
|-------------------|---|
| 3.1               | Amended and Restated Certificate of Incorporation of Calix, Inc. (filed as Exhibit 3.3 to Amendment No. 7 to Calix's Registration Statement on Form S-1 filed with the Securities and Exchange Commission on March 23, 2010 (File No. 333-163252) and incorporated by reference)                                    |
| 3.2               | Amended and Restated Bylaws of Calix, Inc. (filed as Exhibit 3.5 to Amendment No. 7 to Calix's Registration Statement on Form S-1 filed with the Securities and Exchange Commission on March 23, 2010 (File No. 333-163252) and incorporated by reference)  |
| 4.1               | Form of Calix, Inc.'s Common Stock Certificate (filed as Exhibit 4.1 to Amendment No. 7 to Calix's Registration Statement on Form S-1 filed with the Securities and Exchange Commission on March 23, 2010 (File No. 333-163252) and incorporated by reference)  |
| 4.2               | Description of Securities   |
| 10.1*             | Calix, Inc. 2010 Equity Incentive Award Plan and related documents (filed as Exhibit 10.4 to Amendment No. 6 to Calix's Registration Statement on Form S-1 filed with the SEC on March 8, 2010 (File No. 333-163252) and incorporated by reference)   |
| 10.2              | Form of Indemnification Agreement made by and between Calix, Inc. and each of its directors, executive officers and some employees (filed as Exhibit 10.5 to Amendment No. 6 to Calix's Registration Statement on Form S-1 filed with the SEC on March 8, 2010 (File No. 333-163252) and incorporated by reference) |
| 10.3*             | Offer Letter between Calix, Inc. and Carl Russo dated November 1, 2006 (filed as Exhibit 10.8 to Amendment No. 1 to Calix's Registration Statement on Form S-1 filed with the SEC on December 31, 2009 (File No. 333-163252) and incorporated by reference)   |
| 10.4*             | Offer Letter by and between Calix, Inc. and Michael Weening dated May 20, 2016 (filed as Exhibit 10.1 to Calix's Form 10-Q filed with the SEC on August 3, 2016 (File No. 001-34674) and incorporated by reference)   |
| 10.5*             | Letter Agreement dated November 27, 2019 by and between Calix, Inc. and Michael Weening (filed as Exhibit 10.2 to Calix's Form 8-K filed with the SEC on December 3, 2019 (File No. 001-34674) and incorporated by reference)   |
| 10.6*             | Calix, Inc. Amended and Restated 2017 Nonqualified Employee Stock Purchase Plan (incorporated by reference to Appendix A to the Registrant's definitive proxy statement on Schedule 14A, filed with the SEC on April 3, 2018 (File No. 001-34674))  |

| Exhibit<br>Number | Description  |
|-------------------|--|
| 10.7*             | Amendment to Calix, Inc. Amended and Restated 2017 Nonqualified Employee Stock Purchase Plan dated June 24, 2018 (filed as Exhibit 10.1 to Calix's Form 10-Q filed with the SEC on August 8, 2018 (File No. 001-34674) and incorporated by reference)            |
| 10.8*             | Offer Letter between Calix, Inc. and Cory Sindelar dated September 28, 2017 (filed as Exhibit 10.2 to Calix's Form 10-Q filed with the SEC on August 11, 2017 (File No. 001-34674) and incorporated by reference)  |
| 10.9*             | Nonstatutory Inducement Stock Option Grant Notice between Calix, Inc. and Cory Sindelar dated October 1, 2017 (filed as Exhibit 10.3 to Calix's Form 10-Q filed with the SEC on August 11, 2017 (File No. 001-34674) and incorporated by reference)              |
| 10.10*            | Letter Agreement dated November 27, 2019 by and between Calix, Inc. and Cory Sindelar (filed as Exhibit 10.1 to Calix's Form 8-K filed with the SEC on December 3, 2019 (File No. 001-34674) and incorporated by reference)                                      |
| 10.11*            | Amended and Restated Executive Change in Control and Severance Plan effective September 6, 2017 (filed as Exhibit 10.1 to Calix's Form 8-K filed with the SEC on September 11, 2017 (File No. 001-34674) and incorporated by reference)                          |
| 10.12*            | Amendment to Amended and Restated Executive Change in Control and Severance Plan effective October 1, 2017 (filed as Exhibit 10.5 to Calix's Form 10-Q filed with the SEC on November 8, 2017 (File No. 001-34674) and incorporated by reference)                |
| 10.13*            | Second Amendment to Amended and Restated Executive Change in Control and Severance Plan effective August 1, 2018 (filed as Exhibit 10.2 to Calix's Form 10-Q filed with the SEC on August 8, 2018 (File No. 001-34674) and incorporated by reference)            |
| 10.14             | Net Lease Agreement by and between Calix, Inc. and Orchard Parkway San Jose, LLC dated March 9, 2018 (filed as Exhibit 10.1 to Calix's Form 10-Q filed with the SEC on May 5, 2018 (File No. 001-34674) and incorporated by reference)                           |
| 10.15             | First Amendment to Net Lease Agreement by and between Calix, Inc. and Orchard Parkway San Jose, LLC dated November 14, 2018 (filed as Exhibit 10.30 to Calix's Form 10-K filed with the SEC on March 1, 2019 (File No. 001-34674) and incorporated by reference) |
| 10.16*            | Calix, Inc. 2019 Equity Incentive Award Plan (incorporated by reference to Appendix A to the Registrant's definitive proxy statement on Schedule 14A, filed with the SEC on April 2, 2019 (File No. 001-34674))  |
| 10.17*            | Calix, Inc. 2019 Equity Incentive Award Plan - Form of Notice of Grant of Stock Option and Option Agreement  |
| 10.18*            | Calix, Inc. 2019 Equity Incentive Award Plan - Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement  |
| 10.19*            | Calix, Inc. Amended and Restated Employee Stock Purchase Plan (incorporated by reference to Appendix B to the Registrant's definitive proxy statement on Schedule 14A, filed with the SEC on April 2, 2019 (File No. 001-34674))                                 |
| 10.20*            | Calix, Inc. Non-Employee Director Cash Compensation Policy, as amended May 16, 2019 (filed as Exhibit 10.1 to Calix's Form 10-Q filed with the SEC on July 25, 2019 (File No. 001-34674) and incorporated by reference)  |
| 10.21*            | Calix, Inc. Non-Employee Director Equity Compensation Policy, as amended May 16, 2019 (filed as Exhibit 10.2 to Calix's Form 10-Q filed with the SEC on July 25, 2019 (File No. 001-34674) and incorporated by reference)  |
| 10.22†            | Loan and Security Agreement dated January 27, 2020 by and between Bank of America, N.A. and Calix, Inc.  |
| 10.23             | Waiver Agreement dated January 27, 2020 by and between Silicon Valley Bank and Calix, Inc.   |
| 21.1              | Subsidiaries of the Registrant   |
| 23.1              | Consent of KPMG LLP, independent registered public accounting firm   |
| 24.1              | Power of Attorney (included on signature page to this Annual Report on Form 10-K)  |
| 31.1              | Certification of Principal Executive Officer of Calix, Inc. Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934  |
| 31.2              | Certification of Principal Financial Officer of Calix, Inc. Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934  |
| 32.1              | Certification of Principal Executive Officer and Principal Financial Officer of Calix, Inc. Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002   |
| 101.INS           | XBRL Instance Document   |
| 101.SCH           | XBRL Taxonomy Extension Schema Document  |
| 101.CAL           | XBRL Taxonomy Extension Calculation Linkbase Document  |
| 101.DEF           | XBRL Taxonomy Extension Definition Linkbase Document   |
| 101.LAB           | XBRL Taxonomy Extension Label Linkbase Document  |
| 101.PRE           | XBRL Taxonomy Extension Presentation Linkbase Document   |
| *                 | Indicates management contract or compensatory plan or arrangement.   |
| †                 | Information in this exhibit identified by [*] is confidential and has been excluded pursuant to Item 601(b)(10)(iv) of Regulation S-K because it (i) is not material or (ii) would likely cause competitive harm to Calix if publicly disclosed.                 |

**ITEM 16. Form 10-K Summary**

None.





**POWER OF ATTORNEY**

Each person whose individual signature appears below hereby authorizes and appoints Carl Russo and Cory Sindelar, and each of them, with full power of substitution and re-substitution and full power to act without the other, as his true and lawful attorney-in-fact and agent to act in his name, place and stead and to execute in the name and on behalf of each person, individually and in each capacity stated below, and to file any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing, ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on February 21, 2020.

| <u>Signature</u>                                    | <u>Title</u>  | <u>Date</u>       |
|---|---|-------------------|
| <u>/s/ Carl Russo</u><br>Carl Russo                 | Chief Executive Officer and Director<br>(Principal Executive Officer) | February 21, 2020 |
| <u>/s/ Cory Sindelar</u><br>Cory Sindelar           | Chief Financial Officer<br>(Principal Financial Officer)              | February 21, 2020 |
| <u>/s/ Don Listwin</u><br>Don Listwin               | Chairman of the Board of Directors                                    | February 21, 2020 |
| <u>/s/ Christopher Bowick</u><br>Christopher Bowick | Director  | February 21, 2020 |
| <u>/s/ Kathy Crusco</u><br>Kathy Crusco             | Director  | February 21, 2020 |
| <u>/s/ Kevin DeNuccio</u><br>Kevin DeNuccio         | Director  | February 21, 2020 |
| <u>/s/ Michael Everett</u><br>Michael Everett       | Director  | February 21, 2020 |
| <u>/s/ Kira Makagon</u><br>Kira Makagon             | Director  | February 21, 2020 |
| <u>/s/ Michael Matthews</u><br>Michael Matthews     | Director  | February 21, 2020 |
| <u>/s/ Kevin Peters</u><br>Kevin Peters             | Director  | February 21, 2020 |
| <u>/s/ J. Daniel Plants</u><br>J. Daniel Plants     | Director  | February 21, 2020 |

**DESCRIPTION OF THE REGISTRANT'S SECURITIES  
REGISTERED PURSUANT TO SECTION 12 OF THE  
SECURITIES EXCHANGE ACT OF 1934**

**As of February 14, 2020, Calix, Inc. ("Calix," the "Company," "we," "us," and "our") had one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"): our Common Stock.**

**DESCRIPTION OF SECURITIES**

The following description of the capital stock of Calix, Inc., a Delaware corporation (the "Company"), is a summary and is qualified in its entirety by the full text of our Amended and Restated Certificate of Incorporation ("Restated Certificate"), our Amended and Restated Bylaws ("Restated Bylaws"), each of which is an exhibit to our Annual Report on Form 10-K of which this Exhibit 4.2 is a part, and applicable provisions of the Delaware General Corporation Law. We encourage you to read our Restated Certificate, our Restated Bylaws and the applicable provisions of the Delaware General Corporation Law for additional information.

**Capital Stock**

Pursuant to our Restated Certificate, the total number of shares of capital stock the Company is authorized to issue is one hundred five million (105,000,000) shares, of which one hundred million (100,000,000) shares is Common Stock, with a par value of \$0.025 per share, and five million (5,000,000) shares is Preferred Stock, with a par value of \$0.025 per share.

**Common Stock**

*Dividend Rights*

Subject to preferences that may be applicable to any then outstanding Preferred Stock, holders of our Common Stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

*Voting Rights*

Each holder of our Common Stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our stockholders do not have cumulative voting rights in the election of directors. Our Restated Certificate may be amended with the affirmative vote of the holders of at least 66 <sup>2</sup>/<sub>3</sub>% of the voting shares.

*Liquidation*

In the event of our liquidation, dissolution or winding up, holders of our Common Stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of Preferred Stock.

*Rights and Preferences*

Holders of our Common Stock have no preemptive, conversion, subscription or other rights, and there is no redemption or sinking fund provisions applicable to our Common Stock. The rights, preferences and privileges of the holders of our Common Stock are subject to and may be adversely affected by, the rights of the holders of shares of any series of our Preferred Stock that we may designate in the future.

**Preferred Stock**

Our board of directors is authorized to issue up to five million (5,000,000) shares of Preferred Stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of Common Stock.

**Anti-Takeover Provisions***Restated Certificate and Restated Bylaws*

Our Restated Certificate provides for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, our stockholders holding a majority of the shares of Common Stock outstanding will be able to elect all of our directors. Our Restated Certificate and Restated Bylaws provide that all stockholder actions must be effected at a duly called meeting of stockholders and not by a consent in writing, and that only our board of directors, chairman of the board, chief executive officer or president (in the absence of a chief executive officer) may call a special meeting of stockholders.

Our Restated Certificate and Restated Bylaws require a 66<sup>2</sup>/<sub>3</sub>% stockholder vote for the removal of a director without cause or the rescission, alteration, amendment or repeal of the Restated Bylaws by stockholders. The combination of the classification of our board of directors, the lack of cumulative voting and the 66<sup>2</sup>/<sub>3</sub>% stockholder voting requirements will make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated Preferred Stock makes it possible for our board of directors to issue Preferred Stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions may have the effect of deterring hostile takeovers or delaying changes in our control or management. These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of us. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and, as a consequence, they also may inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. Such provisions may also have the effect of preventing changes in our management.

*Section 203 of the Delaware General Corporation Law*

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 <sup>2</sup>/<sub>3</sub>% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines business combination to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

**Listing**

Our Common Stock is listed on The New York Stock Exchange under the symbol “CALX.”

End of Document

# Notice of Grant of Stock Option and Option Agreement

Calix, Inc.  
ID: 68-0438710  
2777 Orchard Parkway  
San Jose, CA 95134  
(408) 514-3000

Participant Name:  
Address Line 1:  
Address Line 2:  
Address Line 3:

Grant #:  
Plan: 2019 Equity Incentive Award Plan  
ID:

Effective <OPTION\_DATE, 'MM/DD/YYYY'>, you ("Participant") have been granted a(n) <OPTION\_TYPE> Stock Option to buy <TOTAL\_SHARES\_GRANTED> shares of Calix, Inc. (the "Company") common stock ("Stock") at <OPTION\_PRICE> per share (the "Option") pursuant to the Company's 2019 Equity Incentive Award Plan (the "Plan").

The total exercise price of the shares granted is <TOTAL\_OPTION\_PRICE>.

Shares in each period will become fully vested on the date shown, subject to your continued service on each applicable vesting date.

| <u>Shares</u> | <u>Vest Type</u> | <u>Full Vest Date</u> |
|---------------|------------------|-----------------------|
|---------------|------------------|-----------------------|

The expiration date of this Option is [\_\_\_\_\_] (the "Expiration Date").

By your signature and the Company's signature below, you and the Company agree that this Option is granted under and governed by the terms and conditions of the Plan and the Stock Option Agreement attached hereto as Exhibit A, each of which are incorporated herein by reference.

**CALIX, INC.:**

**PARTICIPANT:**

By:

By:

\_\_\_\_\_  
<FIRST\_NAME> <LAST\_NAME>  
<TITLE>

\_\_\_\_\_  
<FIRST\_NAME> <LAST\_NAME>  
<ADDRESS\_LINE>  
<CITY>, <STATE>  
<COUNTRY> <ZIPCODE>

**EXHIBIT A  
TO STOCK OPTION GRANT NOTICE**

**CALIX, INC. STOCK OPTION AGREEMENT**

Pursuant to the Stock Option Grant Notice (the “Grant Notice”) to which this Stock Option Agreement (this “Agreement”) is attached, Calix, Inc., a Delaware corporation (the “Company”), has granted to Participant an Option under the Company’s 2019 Equity Incentive Award Plan, as amended from time to time (the “Plan”), to purchase the number of shares of Stock indicated in the Grant Notice.

**ARTICLE 1**

**GENERAL**

1.1 Defined Terms. Wherever the following terms are used in this Agreement they shall have the meanings specified below, unless the context clearly indicates otherwise. Capitalized terms not specifically defined herein shall have the meanings specified in the Plan and the Grant Notice.

1.2 Incorporation of Terms of Plan. The Option is subject to the terms and conditions of the Plan which are incorporated herein by reference. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan shall control.

**ARTICLE 2.**

**GRANT OF OPTION**

2.1 Grant of Option. In consideration of Participant’s past and/or continued employment with or service to the Company or a Subsidiary and for other good and valuable consideration, effective as of the Grant Date set forth in the Grant Notice (the “Grant Date”), the Company grants to Participant the Option to purchase any part or all of an aggregate of the number of shares of Stock set forth in the Grant Notice, upon the terms and conditions set forth in the Plan and this Agreement, subject to adjustments as provided in Section 12.2 of the Plan. Unless designated as a Non-Qualified Stock Option in the Grant Notice, the Option shall be an Incentive Stock Option to the maximum extent permitted by law.

2.2 Exercise Price. The exercise price of the shares of Stock subject to the Option shall be as set forth in the Grant Notice, without commission or other charge; *provided, however*, that the price per share of the shares of Stock subject to the Option shall not be less than 100% of the Fair Market Value of a share of Stock on the Grant Date. Notwithstanding the foregoing, if this Option is designated as an Incentive Stock Option and Participant owns (within the meaning of Section 424(d) of the Code) more than 10% of the total combined voting power of all classes of stock of the Company or any “subsidiary corporation” of the Company or any “parent corporation” of the Company (each within the meaning of Section 424 of the Code), the price per share of the shares of Stock subject to the Option shall not be less than 110% of the Fair Market Value of a share of Stock on the Grant Date.

2.3 Consideration to the Company. In consideration of the grant of the Option by the Company, Participant agrees to render faithful and efficient services to the Company or any Subsidiary. Nothing in the Plan or this Agreement shall confer upon Participant any right to continue in the employ or service of the Company or any Subsidiary or shall interfere with or restrict in any way the rights of the Company and its Subsidiaries, which rights are hereby expressly reserved, to discharge or terminate the services of Participant at any time for any reason whatsoever, with or without cause, except to the extent expressly provided otherwise in a written agreement between the Company or a Subsidiary and Participant.

**ARTICLE 3.**  
**PERIOD OF EXERCISABILITY**

3.1 Commencement of Exercisability.

(a) Subject to Sections 3.2, 3.3, 5.10 and 5.15 hereof, the Option shall become vested and exercisable in such amounts and at such times as are set forth in the Grant Notice.

(b) No portion of the Option which has not become vested and exercisable at the date of Participant's Termination of Service shall thereafter become vested and exercisable, except as may be otherwise provided by the Administrator or as set forth in a written agreement between the Company and Participant.

(c) Notwithstanding Section 3.1(a) hereof and the Grant Notice, but subject to Section 3.1(b) hereof, pursuant to Section 12.2(e) of the Plan, the Option shall become fully vested and exercisable with respect to all shares of Stock covered thereby in the event of a Change in Control, in connection with which the successor corporation does not assume the Option or substitute an equivalent right for the Option. Should the successor corporation assume the Option or substitute an equivalent right, then no such acceleration shall apply. Notwithstanding the preceding sentence, in the event the successor corporation in a Change in Control assumes or substitutes for the Option in accordance with Section 12.2(d) of the Plan, then if the Participant experiences a Termination of Service by the Company without Cause or a Constructive Termination, in each case, within the twelve (12) month period commencing upon a Change in Control, the Option shall vest with respect to one hundred percent (100%) of the shares of Stock subject to the Option as of immediately prior to such Termination of Service or Constructive Termination.

3.2 Duration of Exercisability. The installments provided for in the vesting schedule set forth in the Grant Notice are cumulative. Each such installment which becomes vested and exercisable pursuant to the vesting schedule set forth in the Grant Notice shall remain vested and exercisable until it becomes unexercisable under Section 3.3 hereof.

3.3 Expiration of Option. The Option may not be exercised to any extent by anyone after the first to occur of the following events:

(a) The Expiration Date set forth in the Grant Notice, which shall in no event be more than ten (10) years from the Grant Date;

(b) If this Option is designated as an Incentive Stock Option and Participant owned (within the meaning of Section 424(d) of the Code), at the time the Option was granted, more than 10% of the total combined voting power of all classes of stock of the Company or any "subsidiary corporation" of the Company or any "parent corporation" of the Company (each within the meaning of Section 424 of the Code), the expiration of five (5) years from the Grant Date;

(c) The expiration of three (3) months from the date of Participant's Termination of Service, unless such termination occurs by reason of Participant's death or disability; or

(d) The expiration of one (1) year from the date of Participant's Termination of Service by reason of Participant's death or disability.

3.4 Special Tax Consequences. Participant acknowledges that, to the extent that the aggregate Fair Market Value (determined as of the time the Option is granted) of all shares of Stock with respect to which Incentive Stock Options, including the Option (if applicable), are exercisable for the first time by Participant in any calendar year exceeds \$100,000, the Option and such other options shall be Non-Qualified Stock Options to the extent necessary to comply with the limitations imposed by Section 422(d) of the Code. Participant further acknowledges that the rule set forth in the preceding sentence shall be applied by taking the Option and other “incentive stock options” into account in the order in which they were granted, as determined under Section 422(d) of the Code and the Treasury Regulations thereunder. Participant also acknowledges that an Incentive Stock Option exercised more than three (3) months after Participant’s Termination of Service, other than by reason of death or disability, will be taxed as a Non-Qualified Stock Option.

3.5 Tax Indemnity.

(a) The Participant agrees to indemnify and keep indemnified the Company, any Subsidiary and his/her employing company, if different, from and against any liability for or obligation to pay any Tax Liability (a “Tax Liability” being any liability for income tax, withholding tax and any other employment related taxes or social security contributions in any jurisdiction) that is attributable to (1) the grant or exercise of, or any benefit derived by the Participant from, the Option, (2) the acquisition by the Participant of the Stock on exercise of the Option, or (3) the disposal of any Stock.

(b) The Option cannot be exercised until the Participant has made such arrangements as the Company may require for the satisfaction of any Tax Liability that may arise in connection with the exercise of the Option and/or the acquisition of the Stock by the Participant. The Company shall not be required to issue, allot or transfer Stock until the Employee has satisfied this obligation.

**ARTICLE 4.**  
**EXERCISE OF OPTION**

4.1 Person Eligible to Exercise. During the lifetime of Participant, only Participant may exercise the Option or any portion thereof. After the death of Participant, any exercisable portion of the Option may, prior to the time when the Option becomes unexercisable under Section 3.3 hereof, be exercised by Participant’s personal representative or by any person empowered to do so under the deceased Participant’s will or under the then applicable laws of descent and distribution.

4.2 Partial Exercise. Any exercisable portion of the Option or the entire Option, if then wholly exercisable, may be exercised in whole or in part at any time prior to the time when the Option or portion thereof becomes unexercisable under Section 3.3 hereof.

4.3 Manner of Exercise. The Option, or any exercisable portion thereof, may be exercised solely by delivery to the Secretary of the Company (or any third party administrator or other person or entity designated by the Company), during regular business hours, of all of the following prior to the time when the Option or such portion thereof becomes unexercisable under Section 3.3 hereof:

(a) An exercise notice in a form specified by the Administrator, stating that the Option or portion thereof is thereby exercised, such notice complying with all applicable rules established by the Administrator;



(b) The receipt by the Company of full payment for the shares of Stock with respect to which the Option or portion thereof is exercised, including payment of any applicable withholding tax, which shall be made by deduction from other compensation payable to Participant or in such other form of consideration permitted under Section 4.4 hereof that is acceptable to the Company;

(c) Any other written representations as may be required in the Administrator's reasonable discretion to evidence compliance with the Securities Act or any other applicable law, rule or regulation; and

(d) In the event the Option or portion thereof shall be exercised pursuant to Section 4.1 hereof by any person or persons other than Participant, appropriate proof of the right of such person or persons to exercise the Option.

Notwithstanding any of the foregoing, the Company shall have the right to specify all conditions of the manner of exercise, which conditions may vary by country and which may be subject to change from time to time.

4.4 Method of Payment. Payment of the exercise price shall be by any of the following, or a combination thereof, at the election of Participant:

(a) Cash or check;

(b) With the consent of the Administrator, surrender of shares of Stock (including, without limitation, shares of Stock otherwise issuable upon exercise of the Option) held for such period of time as may be required by the Administrator in order to avoid adverse accounting consequences and having a Fair Market Value on the date of delivery equal to the aggregate exercise price of the Option or exercised portion thereof; or

(c) Other property acceptable to the Administrator (including, without limitation, through the delivery of a notice that Participant has placed a market sell order with a broker with respect to shares of Stock then issuable upon exercise of the Option, and that the broker has been directed to pay a sufficient portion of the net proceeds of the sale to the Company in satisfaction of the Option exercise price; *provided* that payment of such proceeds is then made to the Company at such time as may be required by the Company, but in any event not later than the settlement of such sale).

4.5 Conditions to Issuance of Stock. The shares of Stock deliverable upon the exercise of the Option, or any portion thereof, may be either previously authorized but unissued shares of Stock or issued shares of Stock which have then been reacquired by the Company. Such shares of Stock shall be fully paid and nonassessable. The Company shall not be required to issue or deliver any shares of Stock purchased upon the exercise of the Option or portion thereof prior to fulfillment of all of the following conditions:

(a) The admission of such shares of Stock to listing on all stock exchanges on which such Stock is then listed;

(b) The completion of any registration or other qualification of such shares of Stock under any state or federal law or under rulings or regulations of the Securities and Exchange Commission or of any other governmental regulatory body, which the Administrator shall, in its absolute discretion, deem necessary or advisable;

(c) The obtaining of any approval or other clearance from any state or federal governmental agency which the Administrator shall, in its absolute discretion, determine to be necessary or advisable;

(d) The receipt by the Company of full payment for such shares of Stock, including payment of any applicable withholding tax, which may be in one or more of the forms of consideration permitted under Section 4.4 hereof; and

(e) The lapse of such reasonable period of time following the exercise of the Option as the Administrator may from time to time establish for reasons of administrative convenience.

4.6 Rights as Stockholder. The holder of the Option shall not be, nor have any of the rights or privileges of, a stockholder of the Company, including, without limitation, voting rights and rights to dividends, in respect of any shares of Stock purchasable upon the exercise of any part of the Option unless and until such shares of Stock shall have been issued by the Company and held of record by such holder (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company). No adjustment will be made for a dividend or other right for which the record date is prior to the date the shares of Stock are issued, except as provided in Section 12.2 of the Plan.

## **ARTICLE 5. OTHER PROVISIONS**

5.1 Administration. The Administrator shall have the power to interpret the Plan and this Agreement and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret, amend or revoke any such rules. All actions taken and all interpretations and determinations made by the Administrator in good faith shall be final and binding upon Participant, the Company and all other interested persons. No member of the Committee or the Board shall be personally liable for any action, determination or interpretation made in good faith with respect to the Plan, this Agreement or the Option.

5.2 Whole Shares. The Option may only be exercised for whole shares of Stock.

5.3 Option Not Transferable. Subject to Section 4.1 hereof, the Option may not be sold, pledged, assigned or transferred in any manner other than by will or the laws of descent and distribution, unless and until the shares of Stock underlying the Option have been issued, and all restrictions applicable to such shares of Stock have lapsed. Neither the Option nor any interest or right therein shall be liable for the debts, contracts or engagements of Participant or his or her successors in interest or shall be subject to disposition by transfer, alienation, anticipation, pledge, encumbrance, assignment or any other means whether such disposition be voluntary or involuntary or by operation of law by judgment, levy, attachment, garnishment or any other legal or equitable proceedings (including bankruptcy), and any attempted disposition thereof shall be null and void and of no effect, except to the extent that such disposition is permitted by the preceding sentence.

5.4 Binding Agreement. Subject to the limitation on the transferability of the Option contained herein, this Agreement will be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

5.5 Adjustments Upon Specified Events. The Administrator may accelerate the vesting of the Option in such circumstances as it, in its sole discretion, may determine. In addition, upon the occurrence of certain events relating to the Stock contemplated by Section 12.2 of the Plan (including, without limitation, an extraordinary cash dividend on such Stock), the Administrator shall make such adjustments the Administrator deems appropriate in the number of shares of Stock subject to the Option, the exercise price of the Option and the kind of securities that may be issued upon exercise of the Option. Participant

acknowledges that the Option is subject to adjustment, modification and termination in certain events as provided in this Agreement and Section 12.2 of the Plan.

5.6 Notices. Any notice to be given under the terms of this Agreement to the Company shall be addressed to the Company in care of the Secretary of the Company at the Company's principal office, and any notice to be given to Participant shall be addressed to Participant at Participant's last address reflected on the Company's records. By a notice given pursuant to this Section 5.6, either party may hereafter designate a different address for notices to be given to that party. Any notice which is required to be given to Participant shall, if Participant is then deceased, be given to the person entitled to exercise his or her Option pursuant to Section 4.1 hereof by written notice under this Section 5.6. Any notice shall be deemed duly given when sent via email or when sent by certified mail (return receipt requested) and deposited (with postage prepaid) in a post office or branch post office regularly maintained by the United States Postal Service.

5.7 Titles. Titles are provided herein for convenience only and are not to serve as a basis for interpretation or construction of this Agreement.

5.8 Governing Law. The laws of the State of Delaware shall govern the interpretation, validity, administration, enforcement and performance of the terms of this Agreement regardless of the law that might be applied under principles of conflicts of laws.

5.9 Conformity to Securities Laws. Participant acknowledges that the Plan and this Agreement are intended to conform to the extent necessary with all provisions of the Securities Act and the Exchange Act and any and all regulations and rules promulgated by the Securities and Exchange Commission thereunder, and state securities laws and regulations. Notwithstanding anything herein to the contrary, the Plan shall be administered, and the Option is granted and may be exercised, only in such a manner as to conform to such laws, rules and regulations. To the extent permitted by applicable law, the Plan and this Agreement shall be deemed amended to the extent necessary to conform to such laws, rules and regulations.

5.10 Amendments, Suspension and Termination. To the extent permitted by the Plan, this Agreement may be wholly or partially amended or otherwise modified, suspended or terminated at any time or from time to time by the Committee or the Board; *provided* that, except as may otherwise be provided by the Plan, no amendment, modification, suspension or termination of this Agreement shall adversely affect the Option in any material way without the prior written consent of Participant.

5.11 Successors and Assigns. The Company may assign any of its rights under this Agreement to single or multiple assignees, and this Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set forth in Section 5.3 hereof, this Agreement shall be binding upon Participant and his or her heirs, executors, administrators, successors and assigns.

5.12 Notification of Disposition. If this Option is designated as an Incentive Stock Option, Participant shall give prompt notice to the Company of any disposition or other transfer of any shares of Stock acquired under this Agreement if such disposition or transfer is made (a) within two (2) years from the Grant Date with respect to such shares of Stock or (b) within one (1) year after the transfer of such shares of Stock to Participant. Such notice shall specify the date of such disposition or other transfer and the amount realized, in cash, other property, assumption of indebtedness or other consideration, by Participant in such disposition or other transfer.

5.13 Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of the Plan or this Agreement, if Participant is subject to Section 16 of the Exchange Act, the Plan, the Option and this Agreement shall be subject to any additional limitations set forth in any applicable exemptive rule under

Section 16 of the Exchange Act (including any amendment to Rule 16b-3 of the Exchange Act) that are requirements for the application of such exemptive rule. To the extent permitted by applicable law, this Agreement shall be deemed amended to the extent necessary to conform to such applicable exemptive rule.

5.14 Not a Contract of Employment. Nothing in this Agreement or in the Plan shall confer upon the Participant any right to continue to serve as an employee or other service provider of the Company or any of its Subsidiaries.

5.15 Section 409A. This Option is not intended to constitute “nonqualified deferred compensation” within the meaning of Section 409A of the Code (together with any Department of Treasury regulations and other interpretive guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the date hereof, “Section 409A”). However, notwithstanding any other provision of the Plan, the Grant Notice or this Agreement, if at any time the Administrator determines that the Option (or any portion thereof) may be subject to Section 409A, the Administrator shall have the right in its sole discretion (without any obligation to do so or to indemnify Participant or any other person for failure to do so) to adopt such amendments to the Plan, the Grant Notice or this Agreement, or adopt other policies and procedures (including amendments, policies and procedures with retroactive effect), or take any other actions, as the Administrator determines are necessary or appropriate either for the Option to be exempt from the application of Section 409A or to comply with the requirements of Section 409A.

5.16 Limitation on Participant’s Rights. Participation in the Plan confers no rights or interests other than as herein provided. This Agreement creates only a contractual obligation on the part of the Company as to amounts payable and shall not be construed as creating a trust. Neither the Plan nor any underlying program, in and of itself, has any assets. Participant shall have only the rights of a general unsecured creditor of the Company with respect to amounts credited and benefits payable, if any, with respect to the Option, and rights no greater than the right to receive the Stock as a general unsecured creditor with respect to options, as and when exercised pursuant to the terms hereof.

5.17 Data Privacy. Without limiting the generality of any other provision of this Agreement, Section 10.8 (“*Data Privacy*”) of the Plan is hereby expressly incorporated into this Agreement as if first set forth herein.

5.18 Additional Terms for Participants Providing Services Outside the United States. To the extent the Participant provides services to the Company in a country other than the United States, the Option shall be subject to such additional or substitute terms as shall be set forth for such country in Exhibit A-1 attached to this Agreement. If the Participant relocates to one of the countries included in Exhibit A-1 during the life of the Option, the special provisions for such country shall apply to the Participant, to the extent the Company determines that the application of such provisions is necessary or advisable in order to comply with local law or facilitate the administration of the Plan. In addition, the Company reserves the right to impose other requirements on the Option and the shares of Stock issued upon exercise of the Option, to the extent the Company determines it is necessary or advisable in order to comply with local laws or facilitate the administration of the Plan, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

**EXHIBIT A-1  
TO STOCK OPTION AGREEMENT**

**ADDITIONAL TERMS AND CONDITIONS BY COUNTRY**

Certain capitalized terms used but not defined in this Exhibit A-1 shall have the meanings set forth in the Plan and/or the Agreement.

***TERMS AND CONDITIONS***

This Exhibit A-1 includes additional terms and conditions that govern any Options granted under the Plan if, under applicable law, you are a resident of, are deemed to be a resident of or are working in one of the countries listed below. Furthermore, the additional terms and conditions that govern any Option granted hereunder may apply to you if you transfer employment and/or residency to one of the countries listed below and the Company shall, in its discretion, determine to what extent the terms and conditions contained herein shall apply to you.

***NOTIFICATIONS***

This Exhibit A-1 also includes notifications relating to exchange control and other issues of which you should be aware with respect to your participation in the Plan. The information is based on the exchange control, securities and other laws in effect in the countries to which this Exhibit A-1 refers as of May 2019. Such laws are often complex and change frequently. As a result, the Company strongly recommends that you not rely on the notifications herein as the only source of information relating to the consequences of your participation in the Plan because the information may be outdated when you exercise the Option and acquire shares of Stock under the Plan, or when you subsequently sell shares of Stock acquired under the Plan.

In addition, the notifications are general in nature and may not apply to your particular situation, and the Company is not in a position to assure you of any particular result. Accordingly, you should seek appropriate professional advice as to how the relevant laws in your country may apply to your situation. Finally, if you are a citizen or resident of a country other than the one in which you are currently residing and/or working or are considered a resident of another country for local law purposes, the information contained herein may not be applicable to you or you may be subject to the provisions of one or more jurisdictions.

## **ALL NON-U.S. JURISDICTIONS**

### ***NOTIFICATIONS***

**Insider Trading Restrictions/Market Abuse Laws.** You may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the shares of Stock are listed and in applicable jurisdictions including the United States and your country or your broker's country, if different, which may affect your ability to accept, acquire, sell or otherwise dispose of shares of Stock, rights to shares of Stock or rights linked to the value of shares of Stock during such times as you are considered to have "inside information" regarding the Company (as defined by the laws in applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders you place before you possessed inside information. Furthermore you could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees (other than on a "need to know" basis) and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable Company insider trading policy. You are responsible for ensuring your compliance with any applicable restrictions and you should speak with your personal legal advisor on this matter.

**Foreign Asset/Account, Tax Reporting Information.** Your country of residence may have certain foreign asset and/or account reporting requirements which may affect your ability to acquire or hold shares of Stock under the Plan or cash received from participating in the Plan (including from any dividends received, or sale proceeds arising from the sale of shares of Stock) in a brokerage or bank account outside of your country. You may be required to report such accounts, assets or transactions to the tax or other authorities in your country. You also may be required to repatriate sale proceeds or other funds received as a result of participating in the Plan to your country within a certain time after receipt. You are responsible for ensuring your compliance with such regulations, and you should speak with your personal legal advisor on this matter.

### ***TERMS AND CONDITIONS***

For employment law purposes outside the United States, the Option, shares subject to the Option, and the income from and value of same, are not part of normal or expected compensation or salary for any purpose, including but not limited to for purposes of calculating any severance, resignation, termination, redundancy, dismissal, end of service payments, bonuses, holiday pay, long-service awards, pension or retirement benefits or similar mandatory payments.

Neither the Company nor any Subsidiary of the Company shall be liable for any foreign exchange rate fluctuation between your local currency and the United States Dollar that may affect the value of the Option or of any shares of Stock acquired upon exercise of the Option or the subsequent sale of any such shares.

## **CANADA**

**TERMS AND CONDITIONS**

In respect of a Participant who is subject to tax under the *Income Tax Act* (Canada) in respect of the exercise or disposition of an Option, notwithstanding anything in the Grant Notice, the Agreement or the Plan, the Participant shall under no circumstances (without the prior written consent of the Company) have the right to transfer to the Company (as payment of the exercise price or otherwise) any shares of Stock which were received by the Participant upon exercise of the Option.

By accepting this grant of securities, Participant represents and warrants to the Company that the Participant's participation in the trade and acceptance of such securities is voluntary and that the Participant has not been induced to participate by expectation of engagement, appointment, employment, continued appointment or continued employment, as applicable.

The parties acknowledge that it is their express wish that the Agreement, as well as all documents, notices, and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English.

*Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention (« Agreement »), ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.*

## CALIX, INC.

## 2019 EQUITY INCENTIVE AWARD PLAN

RESTRICTED STOCK UNIT AWARD GRANT NOTICE AND  
RESTRICTED STOCK UNIT AWARD AGREEMENT

Calix, Inc., a Delaware corporation, (the “Company”), pursuant to its 2019 Equity Incentive Award Plan, as amended from time to time (the “Plan”), hereby grants to the individual listed below (“Participant”), an award (the “Award”) of restricted stock units (“Restricted Stock Units” or “RSUs”). Each Restricted Stock Unit represents the right to receive one share of Common Stock upon vesting of such Restricted Stock Unit. This award of Restricted Stock Units is subject to all of the terms and conditions as set forth herein and in the Restricted Stock Unit Award Agreement attached hereto as Exhibit A (the “Agreement”) and the Plan, each of which are incorporated herein by reference. Unless otherwise defined herein, the terms defined in the Plan shall have the same defined meanings in this Grant Notice and the Agreement.

**Participant’s Name:**

**Grant Date:**

**Grant Number:**

**Total Number of RSUs:**

**Vesting Commencement Date:**

**Vesting Schedule:**

By his or her signature and the Company’s signature below, Participant agrees to be bound by the terms and conditions of the Plan, the Agreement and this Grant Notice. Participant has reviewed the Agreement, the Plan and this Grant Notice in their entirety and fully understands all provisions of this Grant Notice, the Agreement and the Plan. Additionally, by signing below, Participant agrees that Participant has read, fully understands and agrees to abide by the terms of the Company’s Insider Trading Policy. In addition, by signing below, Participant also agrees that the Company, in its sole discretion, may satisfy any withholding obligations in accordance with Section 2.6 of the Agreement by (i) withholding shares of Common Stock otherwise issuable to Participant upon vesting of the RSUs, (ii) instructing a broker on Participant’s behalf to sell shares of Common Stock otherwise issuable to Participant upon vesting of the RSUs and submit the proceeds of such sale to the Company, or (iii) using any other method permitted by Section 2.6 of the Agreement or the Plan. Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Committee upon any questions arising under the Plan or relating to the RSUs.

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**CALIX, INC.:**

By:

---

<FIRST\_NAME> <LAST\_NAME>  
<TITLE>

**PARTICIPANT:**

By:

---

<FIRST\_NAME> <LAST\_NAME>  
<ADDRESS\_LINE>  
<CITY>, <STATE>  
<COUNTRY> <ZIPCODE>

---

## EXHIBIT A

### TO RESTRICTED STOCK UNIT AWARD GRANT NOTICE

#### RESTRICTED STOCK UNIT AWARD AGREEMENT

Pursuant to the Restricted Stock Unit Award Grant Notice (the “Grant Notice”) to which this Restricted Stock Unit Award Agreement (the “Agreement”) is attached, Calix, Inc., a Delaware corporation (the “Company”), has granted to Participant an award of restricted stock units (“Restricted Stock Units” or “RSUs”) under the Company’s 2019 Equity Incentive Award Plan, as amended from time to time (the “Plan”).

#### ARTICLE I

##### GENERAL

1.1 Defined Terms. Capitalized terms not specifically defined herein shall have the meanings specified in the Plan and the Grant Notice.

1.2 General. Each Restricted Stock Unit shall constitute a non-voting unit of measurement which is deemed for bookkeeping purposes to be equivalent to one outstanding share of the Company’s Common Stock (subject to adjustment as provided in Section 12.2 of the Plan) solely for purposes of the Plan and this Agreement. The Restricted Stock Units shall be used solely as a device for the determination of the payment to eventually be made to the Participant if such Restricted Stock Units vest pursuant to Section 2.3, Section 2.4 or Section 3.2. The Restricted Stock Units shall not be treated as property or as a trust fund of any kind.

1.3 Incorporation of Terms of Plan. RSUs are subject to the terms and conditions of the Plan which are incorporated herein by reference. In the event of any inconsistency between the Plan and this Agreement, the terms of the Plan shall control.

#### ARTICLE II

##### GRANT OF RESTRICTED STOCK UNITS

2.1 Grant of RSUs. In consideration of Participant’s past and/or continued employment with or service to the Company or a Subsidiary and for other good and valuable consideration, effective as of the Grant Date set forth in the Grant Notice (the “Grant Date”), the Company grants to Participant an award of RSUs as set forth in the Grant Notice.

2.2 Company’s Obligation to Pay. Each RSU has a value equal to the Fair Market Value of a share of Common Stock on the date it becomes vested. Unless and until the RSUs will have vested, Participant will have no right to payment of any such RSUs. Prior to actual payment of any vested RSUs, such RSUs will represent an unsecured obligation of the Company, payable (if at all) only from the general assets of the Company.

2.3 Vesting Schedule. Subject to Section 2.4, the RSUs awarded by the Grant Notice will vest and become nonforfeitable with respect to the applicable portion thereof according to the vesting schedule set forth on the Grant Notice to which this Agreement is attached (the “Vesting Schedule”), subject to Participant’s continued employment or services through such dates, as a condition to the

vesting of the applicable installment of the RSU and the rights and benefits under this Agreement. Unless otherwise determined by the Committee, partial employment or service, even if substantial, during any vesting period will not entitle the Participant to any proportionate vesting or avoid or mitigate a termination of rights and benefits upon or following a Termination of Service as provided in Section 2.4 below or under the Plan.

2.4 Change in Control Treatment. In the event the successor corporation in a Change in Control refuses to assume or substitute for the RSUs in accordance with Section 12.2(d) of the Plan, the RSUs will vest as of immediately prior to such Change in Control. In the event the successor corporation in a Change in Control assumes or substitutes for the RSUs in accordance with Section 12.2(d) of the Plan, then if the Participant experiences a Termination of Service by the Company without Cause or a Constructive Termination, in each case, within the twelve (12) month period commencing upon a Change in Control, the RSUs shall vest with respect to one hundred percent (100%) of the shares of Common Stock subject to the RSUs as of immediately prior to such Termination of Service or Constructive Termination.

2.5 Forfeiture, Termination and Cancellation upon Termination of Services. Upon Participant's Termination of Service for any or no reason, the then-unvested RSUs subject to this Agreement (after giving effect to any accelerated vesting pursuant to Section 2.4) will thereupon be automatically forfeited, terminated and cancelled as of the applicable termination date without payment of any consideration by the Company, and Participant, or Participant's beneficiary or personal representative, as the case may be, shall have no further rights hereunder.

2.6 Payment after Vesting.

(a) As soon as administratively practicable, and, in any event, within sixty (60) days, following the vesting of any Restricted Stock Units pursuant to Section 2.3, Section 2.4 or Section 3.2, the Company shall deliver to the Participant a number of shares of Common Stock (either by delivering one or more certificates for such shares or by entering such shares in book entry form, as determined by the Company in its sole discretion) equal to the number of Restricted Stock Units subject to this award that vest on the applicable vesting date, unless such Restricted Stock Units terminate prior to the given vesting date pursuant to Section 2.5. Notwithstanding the foregoing, in the event shares of Common Stock cannot be issued pursuant to Section 2.8(a), (b) or (c) hereof, then the shares of Common Stock shall be issued pursuant to the preceding sentence as soon as administratively practicable after the Committee determines that shares of Common Stock can again be issued in accordance with Sections 2.8(a), (b) and (c) hereof.

(b) Notwithstanding anything to the contrary in this Agreement, the Company shall be entitled to require payment by Participant of any sums required by applicable law to be withheld with respect to the grant of RSUs or the issuance of shares of Common Stock. Such payment shall be made by deduction from other compensation payable to Participant or in such other form of consideration acceptable to the Company which may, in the sole discretion of the Company, include:

(1) Cash or check;

(2) Surrender of shares of Common Stock (including, without limitation, shares of Common Stock otherwise issuable under the RSUs) held for such period of time as may be required by the Committee in order to avoid adverse accounting consequences and having a Fair Market Value on the date of delivery equal to the minimum amount required to be withheld by statute; or

(3) Other property acceptable to the Company in its sole discretion (including, without limitation, through the delivery of a notice that the Participant has placed a market sell order with a broker with respect to shares of Common Stock then issuable under the RSUs, and that the broker has been directed to pay a sufficient portion of the net proceeds of the sale to the Company in satisfaction of its withholding obligations; *provided* that payment of such proceeds is then made to the Company upon settlement of such sale).

The Company shall not be obligated to deliver any new certificate representing shares of Common Stock to Participant or Participant's legal representative or enter such share of Common Stock in book entry form unless and until Participant or Participant's legal representative shall have paid or otherwise satisfied in full the amount of all federal, state and local taxes applicable to the taxable income of Participant resulting from the grant of the RSUs or the issuance of shares of Common Stock.

2.7 Rights as Stockholder. The holder of the RSUs shall not be, nor have any of the rights or privileges of, a stockholder of the Company, including, without limitation, any dividend rights and voting rights, in respect of the RSUs and any shares of Common Stock underlying the RSUs and deliverable hereunder unless and until such shares of Common Stock shall have been actually issued by the Company and held of record by such holder (as evidenced by the appropriate entry on the books of the Company or of a duly authorized transfer agent of the Company). No adjustment will be made for a dividend or other right for which the record date is prior to the date the shares of Common Stock are issued, except as provided in Section 12.2 of the Plan.

2.8 Conditions to Delivery of Common Stock. Subject to Section 10.4 of the Plan, the shares of Common Stock deliverable hereunder, or any portion thereof, may be either previously authorized but unissued shares of Common Stock or issued shares of Common Stock which have then been reacquired by the Company. Such shares of Common Stock shall be fully paid and nonassessable. The Company shall not be required to issue or deliver any shares of Common Stock deliverable hereunder or portion thereof prior to fulfillment of all of the following conditions:

- (a) The admission of such shares of Common Stock to listing on all stock exchanges on which such Common Stock is then listed;
- (b) The completion of any registration or other qualification of such shares of Common Stock under any state or federal law or under rulings or regulations of the Securities and Exchange Commission or of any other governmental regulatory body, which the Committee shall, in its absolute discretion, deem necessary or advisable;
- (c) The obtaining of any approval or other clearance from any state or federal governmental agency which the Committee shall, in its absolute discretion, determine to be necessary or advisable;
- (d) The receipt by the Company of full payment for such shares of Common Stock, including payment of any applicable withholding tax, which may be in one or more of the forms of consideration permitted under Section 2.6 hereof; and
- (e) The lapse of such reasonable period of time following the vesting of any Restricted Stock Units as the Committee may from time to time establish for reasons of administrative convenience.

## ARTICLE III

### OTHER PROVISIONS

3.1 Administration. The Committee shall have the power to interpret the Plan and this Agreement and to adopt such rules for the administration, interpretation and application of the Plan as are consistent therewith and to interpret, amend or revoke any such rules. All actions taken and all interpretations and determinations made by the Committee in good faith shall be final and binding upon Participant, the Company and all other interested persons. No member of the Committee or the Board shall be personally liable for any action, determination or interpretation made in good faith with respect to the Plan, this Agreement or the RSUs.

3.2 Adjustments Upon Specified Events. The Committee may accelerate payment and vesting of the Restricted Stock Units in such circumstances as it, in its sole discretion, may determine. In addition, upon the occurrence of certain events relating to the Common Stock contemplated by Section 12.2 of the Plan (including, without limitation, an extraordinary cash dividend on such Common Stock), the Committee shall make such adjustments the Committee deems appropriate in the number of Restricted Stock Units then outstanding and the number and kind of securities that may be issued in respect of the Restricted Stock Units. The Participant acknowledges that the RSUs are subject to modification and termination in certain events as provided in this Agreement and Section 12.2 of the Plan.

3.3 Grant is Not Transferable. During the lifetime of Participant, this grant and the rights and privileges conferred hereby will not be transferred, assigned, pledged or hypothecated in any way (whether by operation of law or otherwise) and will not be subject to sale under execution, attachment or similar process. Upon any attempt to transfer, assign, pledge, hypothecate or otherwise dispose of the RSUs, or any right or privilege conferred hereby, or upon any attempted sale under any execution, attachment or similar process, the RSUs and the rights and privileges conferred hereby immediately will become null and void. Notwithstanding anything herein to the contrary, this Section 3.3 shall not prevent transfers by will or applicable laws of descent and distribution.

3.4 Binding Agreement. Subject to the limitation on the transferability of the RSUs contained herein, this Agreement will be binding upon and inure to the benefit of the heirs, legatees, legal representatives, successors and assigns of the parties hereto.

3.5 Notices. Any notice to be given under the terms of this Agreement to the Company shall be addressed to the Company in care of the Secretary of the Company at the Company's principal office, and any notice to be given to Participant shall be addressed to Participant at the Participant's last address reflected on the Company's records. By a notice given pursuant to this Section 3.5, either party may hereafter designate a different address for notices to be given to that party. Any notice shall be deemed duly given when sent via email or when sent by certified mail (return receipt requested) and deposited (with postage prepaid) in a post office or branch post office regularly maintained by the United States Postal Service.

3.6 Titles. Titles provided herein are for convenience only and are not to serve as a basis for interpretation or construction of this Agreement.

3.7 Governing Law; Severability. The laws of the State of Delaware shall govern the interpretation, validity, administration, enforcement and performance of the terms of this Agreement regardless of the law that might be applied under principles of conflicts of laws.

3.8 Conformity to Securities Laws. Participant acknowledges that the Plan and this Agreement are intended to conform to the extent necessary with all provisions of the Securities Act and the Exchange Act and any and all regulations and rules promulgated by the Securities and Exchange Commission thereunder, and state securities laws and regulations. Notwithstanding anything herein to the contrary, the Plan shall be administered, and the RSUs are granted, only in such a manner as to conform to such laws, rules and regulations. To the extent permitted by applicable law, the Plan and this Agreement shall be deemed amended to the extent necessary to conform to such laws, rules and regulations.

3.9 Amendments, Suspension and Termination. To the extent permitted by the Plan, this Agreement may be wholly or partially amended or otherwise modified, suspended or terminated at any time or from time to time by the Committee or the Board, *provided*, that, except as may otherwise be provided by the Plan, no amendment, modification, suspension or termination of this Agreement shall adversely effect the RSUs in any material way without the prior written consent of the Participant.

3.10 Successors and Assigns. The Company may assign any of its rights under this Agreement to single or multiple assignees, and this Agreement shall inure to the benefit of the successors and assigns of the Company. Subject to the restrictions on transfer herein set forth in Sections 3.2 and 3.3 hereof, this Agreement shall be binding upon Participant and his or her heirs, executors, administrators, successors and assigns.

3.11 Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of the Plan or this Agreement, if Participant is subject to Section 16 of the Exchange Act, the Plan, the RSUs and this Agreement shall be subject to any additional limitations set forth in any applicable exemptive rule under Section 16 of the Exchange Act (including any amendment to Rule 16b-3 of the Exchange Act) that are requirements for the application of such exemptive rule. To the extent permitted by applicable law, this Agreement shall be deemed amended to the extent necessary to conform to such applicable exemptive rule.

3.12 Not a Contract of Employment. Nothing in this Agreement or in the Plan shall confer upon the Participant any right to continue to serve as an employee or other service provider of the Company or any of its Subsidiaries.

3.14 Section 409A. The RSUs are not intended to constitute “nonqualified deferred compensation” within the meaning of Section 409A of the Code (together with any Department of Treasury regulations and other interpretive guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the date hereof, “Section 409A”). However, notwithstanding any other provision of the Plan, the Grant Notice or this Agreement, if at any time the Committee determines that the RSUs (or any portion thereof) may be subject to Section 409A, the Committee shall have the right in its sole discretion (without any obligation to do so or to indemnify Participant or any other person for failure to do so) to adopt such amendments to the Plan, this Agreement or the Grant Notice or adopt other policies and procedures (including amendments, policies and procedures with retroactive effect), or take any other actions, as the Committee determines are necessary or appropriate either for the RSUs to be exempt from the application of Section 409A or to comply with the requirements of Section 409A.

3.15 Limitation on Participant’s Rights. Participation in the Plan confers no rights or interests other than as herein provided. This Agreement creates only a contractual obligation on the part of the Company as to amounts payable and shall not be construed as creating a trust. Neither the Plan nor any underlying program, in and of itself, has any assets. The Participant shall have only the rights of a general unsecured creditor of the Company with respect to amounts credited and benefits payable, if any, with

respect to the RSUs, and rights no greater than the right to receive the Common Stock as a general unsecured creditor with respect to RSUs, as and when payable hereunder.

3.16 Data Privacy. Without limiting the generality of any other provision of this Agreement, Section 10.8 (“*Data Privacy*”) of the Plan is hereby expressly incorporated into this Agreement as if first set forth herein.

3.17 Additional Terms for Participants Providing Services Outside the United States. To the extent the Participant provides services to the Company in a country other than the United States, the RSUs shall be subject to such additional or substitute terms as shall be set forth for such country in Exhibit A-1 attached to this Agreement. If the Participant relocates to one of the countries included in Exhibit A-1 during the life of the RSUs, the special provisions for such country shall apply to the Participant, to the extent the Company determines that the application of such provisions is necessary or advisable in order to comply with local law or facilitate the administration of the Plan. In addition, the Company reserves the right to impose other requirements on the RSUs and the shares of Common Stock issued upon vesting of the RSUs, to the extent the Company determines it is necessary or advisable in order to comply with local laws or facilitate the administration of the Plan, and to require the Participant to sign any additional agreements or undertakings that may be necessary to accomplish the foregoing.

**EXHIBIT A-1**  
**TO RESTRICTED STOCK UNIT AWARD AGREEMENT**  
**ADDITIONAL TERMS AND CONDITIONS BY COUNTRY**

Certain capitalized terms used but not defined in this Exhibit A-1 shall have the meanings set forth in the Plan and/or the Agreement.

***TERMS AND CONDITIONS***

This Exhibit A-1 includes additional terms and conditions that govern any RSUs granted under the Plan if, under applicable law, you are a resident of, are deemed to be a resident of or are working in one of the countries listed below. Furthermore, the additional terms and conditions that govern any RSUs granted hereunder may apply to you if you transfer employment and/or residency to one of the countries listed below and the Company shall, in its discretion, determine to what extent the terms and conditions contained herein shall apply to you.

***NOTIFICATIONS***

This Exhibit A-1 also includes notifications relating to exchange control and other issues of which you should be aware with respect to your participation in the Plan. The information is based on the exchange control, securities and other laws in effect in the countries to which this Exhibit A-1 refers as of May 2019. Such laws are often complex and change frequently. As a result, the Company strongly recommends that you not rely on the notifications herein as the only source of information relating to the consequences of your participation in the Plan because the information may be outdated when you vest in the RSUs and acquire shares of Common Stock under the Plan, or when you subsequently sell shares of Common Stock acquired under the Plan.

In addition, the notifications are general in nature and may not apply to your particular situation, and the Company is not in a position to assure you of any particular result. Accordingly, you should seek appropriate professional advice as to how the relevant laws in your country may apply to your situation. Finally, if you are a citizen or resident of a country other than the one in which you are currently residing and/or working or are considered a resident of another country for local law purposes, the information contained herein may not be applicable to you or you may be subject to the provisions of one or more jurisdictions.



## **ALL NON-U.S. JURISDICTIONS**

### ***NOTIFICATIONS***

**Insider Trading Restrictions/Market Abuse Laws.** You may be subject to insider trading restrictions and/or market abuse laws based on the exchange on which the shares of Common Stock are listed and in applicable jurisdictions including the United States and your country or your broker's country, if different, which may affect your ability to accept, acquire, sell or otherwise dispose of shares of Common Stock, rights to shares (e.g., RSUs) or rights linked to the value of shares during such times as you are considered to have "inside information" regarding the Company (as defined by the laws in applicable jurisdictions). Local insider trading laws and regulations may prohibit the cancellation or amendment of orders you place before you possessed inside information. Furthermore you could be prohibited from (i) disclosing the inside information to any third party, which may include fellow employees (other than on a "need to know" basis) and (ii) "tipping" third parties or causing them otherwise to buy or sell securities. Any restrictions under these laws or regulations are separate from and in addition to any restrictions that may be imposed under any applicable Company insider trading policy. You are responsible for ensuring your compliance with any applicable restrictions and you should speak with your personal legal advisor on this matter.

**Foreign Asset/Account, Tax Reporting Information.** Your country of residence may have certain foreign asset and/or account reporting requirements which may affect your ability to acquire or hold shares of Common Stock under the Plan or cash received from participating in the Plan (including from any dividends received, or sale proceeds arising from the sale of shares) in a brokerage or bank account outside of your country. You may be required to report such accounts, assets or transactions to the tax or other authorities in your country. You also may be required to repatriate sale proceeds or other funds received as a result of participating in the Plan to your country within a certain time after receipt. You are responsible for ensuring your compliance with such regulations, and you should speak with your personal legal advisor on this matter.

### ***TERMS AND CONDITIONS***

For employment law purposes outside the United States, the RSUs, shares subject to the RSUs, and the income from and value of same, are not part of normal or expected compensation or salary for any purpose, including but not limited to for purposes of calculating any severance, resignation, termination, redundancy, dismissal, end of service payments, bonuses, holiday pay, long-service awards, pension or retirement benefits or similar mandatory payments.

Neither the Company nor any Subsidiary of the Company shall be liable for any foreign exchange rate fluctuation between your local currency and the United States Dollar that may affect the value of the RSUs or of any amounts due to you pursuant to the settlement of the RSUs or the subsequent sale of any shares of Common Stock acquired upon settlement.

## **CANADA**

**TERMS AND CONDITIONS**

**Language Consent.** The parties acknowledge that it is their express wish that the Agreement, as well as all documents, notices, and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English.

*Les parties reconnaissent avoir exigé la rédaction en anglais de cette convention (« Agreement »), ainsi que de tous documents, avis et procédures judiciaires, exécutés, donnés ou intentés en vertu de, ou liés directement ou indirectement à, la présente convention.*

**Award Payable Only in Shares.** The grant of the RSUs does not give you any right to receive a cash payment, and the RSUs are payable in shares of Common Stock only.

INFORMATION IN THIS EXHIBIT IDENTIFIED BY [\*] IS CONFIDENTIAL AND HAS BEEN EXCLUDED PURSUANT TO ITEM 601(B) (10)(IV) OF REGULATION S-K BECAUSE IT (I) IS NOT MATERIAL AND (II) WOULD LIKELY CAUSE COMPETITIVE HARM TO CALIX IF PUBLICLY DISCLOSED.

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**LOAN AND SECURITY AGREEMENT**

Dated as of January 27, 2020

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**CALIX, INC.,**

and

**CERTAIN OF ITS SUBSIDIARIES FROM TIME TO TIME JOINED HERETO,**

as Borrowers

**BANK OF AMERICA, N.A.,**

as Agent

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**BANK OF AMERICA, N.A.,**

as Sole Lead Arranger and Sole Bookrunner

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## LOAN AND SECURITY AGREEMENT

**THIS LOAN AND SECURITY AGREEMENT** is dated as of January 27, 2020, by and among **CALIX, INC.**, a Delaware corporation (“Calix”); and together with any other party joined hereto as a Borrower, individually, a “Borrower” and collectively, the “Borrowers”), the financial institutions party to this Agreement from time to time as Lenders, and **BANK OF AMERICA, N.A.**, a national banking association (“Bank of America”), as agent for the Lenders (in such capacity, “Agent”).

### RECITALS:

**WHEREAS**, Borrowers have requested that Agent and Lenders provide a credit facility to Borrowers to finance their mutual and collective business enterprise;

**WHEREAS**, Agent and Lenders are willing to provide the credit facility on the terms and conditions set forth in this Agreement.

**NOW, THEREFORE**, for valuable consideration hereby acknowledged, the parties agree as follows:

### **Section 1. DEFINITIONS; RULES OF CONSTRUCTION**

**1.1 Definitions.** As used herein, the following terms have the meanings set forth below:

Account Debtor Approved Countries: (a) the United States, (b) Australia, (c) Canada, (d) any member state of the European Union as of April 30, 2004, (e) Hong Kong, (f) New Zealand, (g) Norway, (h) Singapore, and (i) Switzerland, in each case, together with any state or province or territory thereof (as applicable); provided, except with respect to the United States, that during the continuance of a Trigger Period, Lender may, in its Permitted Discretion as a condition to such jurisdiction remaining an Account Debtor Approved Country, require that the Borrowers provide local law security documentation in respect of Accounts of Account Debtors organized outside of the jurisdiction of organization of the applicable Borrower to ensure that the Lender has a duly perfected and enforceable Lien to the extent necessary to ensure that the Lender has the ability to enforce the relevant Borrower’s claim against the applicable Account Debtor under the applicable law of such jurisdiction

Acquisition: a transaction or series of transactions resulting in (a) acquisition of a business, line of business, division or all or substantially all assets of a Person; (b) record or beneficial ownership of 50% or more of the Equity Interests of a Person; or (c) merger, consolidation or combination of a Borrower or Subsidiary with another Person.

Affiliate: with respect to a specified Person, any other Person that directly, or indirectly through intermediaries, Controls, is Controlled by or is under common Control with the specified Person.

Agent Indemnitees: Agent and its officers, directors, employees, Affiliates and Agent Professionals.

Agent Professionals: attorneys, accountants, appraisers, auditors, advisors, agents, business valuation experts, environmental engineers or consultants, turnaround consultants, and other professionals, experts and representatives retained or used by Agent in connection with the credit facility and other transactions contemplated by this Agreement.

Agreement Currency: as defined in **Section 1.6**.



Allocable Amount: as defined in **Section 5.10.3**.

Anti-Terrorism Law: any law applicable to the Borrowers or their Subsidiaries relating to terrorism or money laundering, including the Patriot Act.

Applicable Law: all laws, rules, regulations and governmental guidelines applicable to the Person or matter in question, including statutory law, common law and equitable principles, as well as provisions of constitutions, treaties, statutes, rules, regulations, orders and decrees of Governmental Authorities.

Applicable Margin: (a) for the period commencing the Closing Date through and including the later of (x) June 30, 2020 and (y) the last day of the month in which the Start Date (as defined in **Section 10.3.2**) occurs, with respect to (i) LIBOR Loans, 2.25% and (ii) Base Rate Loans, 1.25%; and (b) so long as the Start Date has occurred, for the period commencing on the later of (x) July 1, 2020 and (y) the first day of the month occurring immediately after the occurrence of the Start Date (the "Pricing Grid Commencement Date"), and thereafter, the margin set forth below, as determined by the Fixed Charge Coverage Ratio determined as of the most recently ended Fiscal Quarter of the Borrowers for which a Compliance Certificate and related financial statements have been delivered:

| Level | Fixed Charge Coverage Ratio        | Base Rate Loans | LIBOR Loans |
|-------|------------------------------------|-----------------|-------------|
| I     | $\geq 1.50:1.00$                   | 0.50%           | 1.50%       |
| II    | $\geq 1.25:1.00$ and $< 1.50:1.00$ | 0.75%           | 1.75%       |
| III   | $< 1.25:1.00$                      | 1.00%           | 2.00%       |

Margins shall be subject to increase or decrease by Agent on the Pricing Grid Commencement Date and thereafter on first day of the calendar month following delivery of the Compliance Certificate and related financial statements for each Fiscal Quarter end. If Borrowers fail to deliver any Compliance Certificate and related financial statements when required hereunder, then, at the option of Agent or Required Lenders, margins shall be determined as if Level III were applicable until the first day of the calendar month following its receipt.

Approved Fund: any entity (other than a natural person or a holding company, investment vehicle or trust for, or owned and operated for the primary benefit of, a natural Person) owned or Controlled by a Lender or Affiliate of a Lender, if such entity is engaged in making or investing in commercial loans in its ordinary course of activities.

Asset Disposition: a sale, lease, license, consignment, transfer or other disposition of Property of an Obligor, including any disposition in connection with a sale-leaseback transaction, synthetic lease or statutory division of a limited liability company.

Assignment: an assignment agreement between a Lender and Eligible Assignee, in the form of **Exhibit A** or otherwise reasonably satisfactory to Agent.

Availability: the Borrowing Base minus Revolver Usage.

Availability Reserve: the sum (without duplication) of (a) the Inventory Reserve; (b) the Rent and Charges Reserve; (c) the Bank Product Reserve; (d) liabilities secured by Liens upon Collateral that are senior to Agent's Liens (but imposition of any such reserve shall not waive an Event of Default arising therefrom); (e) the Dilution Reserve; and (f) additional reserves, in such amounts and with respect to such matters, as Agent in its Permitted Discretion may elect to impose from time to time; provided, that so long

as no event of default shall have occurred and be continuing, Agent will give the Borrower Agent not less than three Business Days' prior written notice of any reserve being established or materially modified (which notice shall include a reasonably detailed description of such reserve being established or modified and may be communicated by electronic mail); provided that such new or modified reserve shall immediately be implemented for purposes of any Borrowing of Loans or the issuance of Letters of Credit and no Borrowings of Loans or issuance of Letters of Credit shall be permitted to the extent such Borrowing or issuance would result in an Overadvance after giving effect to the reserve in question. During such three-Business Day period, Agent shall, if requested, discuss any such reserve or change with the Borrower Agent and the Borrowers may (but shall not be obligated to) take such action as may be required so that the event, condition or matter that is the basis for such reserve or change no longer exists or exists in a manner that would result in the establishment of a lower reserve or less material change, in each case, in a manner and to the extent satisfactory to Agent in its Permitted Discretion.

Bail-In Action: the exercise of any Write-Down and Conversion Powers by the applicable EEA Resolution Authority in respect of any liability of an EEA Financial Institution.

Bail-In Legislation: with respect to any EEA Member Country implementing Article 55 of Directive 2014/59/EU of the European Parliament and of the Council of the European Union, the implementing law for such EEA Member Country from time to time which is described in the EU Bail-In Legislation Schedule.

Bank Product: any of the following products or services extended to a Borrower or Subsidiary of a Borrower by a Lender or any of its Affiliates: (a) Cash Management Services; (b) Swaps; (c) commercial credit card and merchant card services; and (d) supply chain finance, credit insurance, leases and other treasury management products or services, other than Letters of Credit.

Bank Product Reserve: the aggregate amount of reserves established by Agent from time to time in its Permitted Discretion with respect to Secured Bank Product Obligations.

Bankruptcy Code: Title 11 of the United States Code.

Base Rate: for any day, a per annum rate equal to the greater of (a) the Prime Rate for such day; (b) the Federal Funds Rate for such day, plus 0.50%; or (c) LIBOR for a 30 day interest period as of such day, plus 1.00%; provided, that in no event shall the Base Rate be less than zero (0).

Base Rate Loan: any Loan that bears interest based on the Base Rate.

Beneficial Ownership Certification: a certification regarding beneficial ownership as required by the Beneficial Ownership Regulation, in form and substance reasonably satisfactory to Agent.

Beneficial Ownership Regulation: 31 C.F.R. §1010.230

Benefit Plan: any (a) employee benefit plan (as defined in ERISA) subject to Title I of ERISA, (b) plan (as defined in and subject to Section 4975 of the Code), or (c) Person whose assets include (for purposes of ERISA Section 3(42) or otherwise for purposes of Title I of ERISA or Section 4975 of the Code) the assets of any such employee benefit plan or plan.

Borrowed Money: with respect to any Obligor, without duplication, its (a) Debt that (i) arises from the lending of money by any Person to such Obligor, (ii) is evidenced by notes, drafts, bonds, debentures, credit documents or similar instruments, (iii) accrues interest or is a type upon which interest charges are customarily paid (excluding trade payables owing in the Ordinary Course of Business), or (iv) was issued

or assumed as full or partial payment for Property; (b) Capital Leases; (c) letter of credit reimbursement obligations; and (d) guaranties of any of the foregoing owing by another Person.

Borrower Agent: as defined in **Section 4.4**.

Borrower Materials: Borrowing Base Reports, Compliance Certificates and other written information, reports, financial statements and other written materials delivered by Borrowers hereunder.

Borrowing: Loans made or converted together on the same day, with the same interest option and, if applicable, Interest Period.

Borrowing Base: on any date of determination, the amount calculated based on the Borrowing Base Report most recently delivered to the Agent in accordance with this Agreement and reflected on Agent's system of record, equal to the lesser of:

- (a) the aggregate Commitments; or
- (b) the sum of:
  - (i) the Investment Grade Accounts Formula Amount; plus
  - (ii) the Non-Investment Grade Accounts Formula Amount; plus
  - (iii) the Inventory Formula Amount, minus
  - (iv) the Availability Reserve.

Notwithstanding the above, the aggregate amount determined under clauses (b)(i) and (b)(ii) with respect to Accounts owed by Account Debtors located in an Account Debtor Approved Country (other than the United States or Canada, in each case, any state, province or territory thereof or the District of Columbia) shall at no time exceed \$2,500,000.

Borrowing Base Report: a report of the Borrowing Base, in form attached as Exhibit C hereto or otherwise in form and substance reasonably satisfactory to Agent.

Business Day: any day that is not a Saturday, Sunday or other day on which commercial banks are authorized to close under the laws of, or are in fact closed in, North Carolina and California; and if such day relates to a LIBOR Loan, is a day on which dealings in Dollar deposits are conducted in the London interbank market.

Capital Expenditures: all liabilities incurred or expenditures made by a Borrower or Subsidiary thereof for the acquisition of fixed assets, or any improvements, replacements, substitutions or additions thereto with a useful life of more than one year. Capital Expenditures shall exclude (a) expenditures for the restoration, repair or replacement of any fixed or capital asset which was destroyed or damaged, in whole or in part, to the extent financed by the proceeds of an insurance policy maintained by such Person; and (b) the purchase price paid in respect of (i) any Permitted Acquisition, or (ii) other Investments permitted by this Agreement or that were consummated prior to the Closing Date.

Calix: Calix, Inc. a Delaware corporation, and its successors.

Capital Lease: any lease required to be capitalized for financial reporting purposes in accordance with GAAP subject to **Section 1.2**.

Cash Collateral: cash delivered to Agent to Cash Collateralize any Obligations, and all interest, dividends, earnings and other proceeds relating thereto.

Cash Collateralize: the delivery of cash to Agent, as security for the payment of Obligations, in an amount equal to (a) with respect to LC Obligations, 103% of the aggregate LC Obligations, and (b) with respect to any inchoate, contingent or other Obligations (including Secured Bank Product Obligations), Agent's good faith estimate of the amount due or to become due, including fees, expenses and indemnification hereunder. "Cash Collateralization" has a correlative meaning.

Cash Equivalents: (a) marketable obligations issued or unconditionally guaranteed by, and backed by the full faith and credit of, the U.S. government, maturing within 12 months of the date of acquisition; (b) certificates of deposit, time deposits and bankers' acceptances maturing within 12 months of the date of acquisition, and overnight bank deposits, in each case which are issued by Bank of America or a commercial bank organized under the laws of the United States or any state or district thereof, rated A-1 (or better) by S&P or P-1 (or better) by Moody's at the time of acquisition, and (unless issued by a Lender) not subject to offset rights other than customary offset rights of account holders with respect to accounts holding such financial assets; (c) repurchase obligations with a term of not more than 30 days for underlying investments of the types described in clauses (a) and (b) entered into with any bank described in clause (b); (d) commercial paper issued by Bank of America or rated A-1 (or better) by S&P or P-1 (or better) by Moody's, and maturing within nine months of the date of acquisition; and (e) shares of any money market fund that has substantially all of its assets invested continuously in the types of investments referred to above, has net assets of at least \$500,000,000 and has the highest rating obtainable from either Moody's or S&P.

Cash Management Services: services relating to operating, collections, payroll, trust, or other depository or disbursement accounts, including automated clearinghouse, e-payable, electronic funds transfer, wire transfer, controlled disbursement, overdraft, depository, information reporting, lockbox and stop payment services.

CERCLA: the Comprehensive Environmental Response Compensation and Liability Act (42 U.S.C. § 9601 et seq.).

Change in Law: the occurrence, after the date hereof, of (a) the adoption, taking effect or phasing in of any law, rule, regulation or treaty; (b) any change in any law, rule, regulation or treaty or in the administration, interpretation or application thereof; or (c) the making, issuance or application of any request, guideline, requirement or directive (whether or not having the force of law) by any Governmental Authority; provided, that "Change in Law" shall include, regardless of the date enacted, adopted or issued, all requests, rules, guidelines, requirements or directives (i) under or relating to the Dodd-Frank Wall Street Reform and Consumer Protection Act, or (ii) promulgated pursuant to Basel III by the Bank for International Settlements, the Basel Committee on Banking Supervision (or any similar authority) or any other Governmental Authority.

Change of Control: means at any time, any "person" or "group" (as such terms are used in Sections 13(d) and 14(d) of the Exchange Act), shall become, or obtain rights (whether by means of warrants, options or otherwise) to become, the "beneficial owner" (as defined in Rules 13(d)-3 and 13(d)-5 under the Exchange Act), directly or indirectly, of thirty-five percent (35%) or more of the ordinary voting power for the election of directors of Calix represented by the issued and outstanding Equity Interests of Calix (determined on a fully diluted basis).

Claims: all claims, liabilities, obligations, losses, damages, penalties, judgments, proceedings, interest, costs and expenses of any kind (including remedial response costs, reasonable and documented attorneys' fees (limited to reasonable and documented fees of one primary counsel for all applicable

Indemnitees (taken as a whole) and one local counsel for all applicable Indemnitees (taken as a whole) in each relevant jurisdiction, and, in the case of a conflict of interest, one additional primary counsel and one additional local counsel in each relevant jurisdiction, in each case for each group of similarly situated affected Indemnitees taken as a whole) and Extraordinary Expenses) at any time (including after Full Payment of the Obligations or replacement of Agent or any Lender) incurred by any Indemnitee or asserted against any Indemnitee by any Obligor or other Person, in any way relating to (a) any Loans, Letters of Credit, Loan Documents, Borrower Materials, Reports or the use thereof or transactions relating thereto, (b) any action taken or omitted by any Indemnitee or Obligor in connection with any Loan Documents, (c) the existence or perfection of any Liens granted under the Loan Documents, or realization by any Indemnitee upon any Collateral, (d) exercise by any Indemnitee of any rights or remedies under any Loan Documents or Applicable Law, or (e) failure by any Obligor to perform or observe any terms of any Loan Document, in each case including all reasonable and documented costs and expenses of any Indemnitee relating to any investigation, litigation, arbitration or other proceeding (including an Insolvency Proceeding or appellate proceedings), whether or not the applicable Indemnitee is a party thereto.

Closing Date: as defined in **Section 6.1**.

Code: the Internal Revenue Code of 1986.

Collateral: all Property described in Section 7.1, all Property described in any Security Documents as security for any Obligations, and all other Property that now or hereafter secures (or is intended to secure) any Obligations.

Commitment: for any Lender, its obligation to make Loans and to participate in LC Obligations up to the maximum principal amount shown on **Schedule 1.1**, as hereafter modified pursuant to **Section 2.1.7** or an Assignment to which it is a party. "Commitments" means the aggregate amount of all Lenders' Commitments.

Commodity Exchange Act: the Commodity Exchange Act (7 U.S.C. § 1 *et seq.*).

Compliance Certificate: a certificate, in form of Exhibit D or otherwise in form and substance reasonably satisfactory to Agent, by which Borrowers certify compliance with **Section 10.3**.

Connection Income Taxes. Other Connection Taxes that are imposed on or measured by net income (however denominated), or are franchise or branch profit taxes.

Contingent Obligation: any obligation of a Person arising from a guaranty, indemnity or other assurance of payment or performance of any Debt, lease, dividend or other obligation ("primary obligation") of another obligor ("primary obligor") in any manner, whether directly or indirectly, including any obligation of such Person under any (a) guaranty, endorsement, co-making or sale with recourse of an obligation of a primary obligor; (b) obligation to make take-or-pay or similar payments regardless of nonperformance by any other party to an agreement; or (c) arrangement (i) to purchase any primary obligation or security therefor, (ii) to supply funds for the purchase or payment of any primary obligation, (iii) to maintain or assure working capital, equity capital, net worth or solvency of the primary obligor, (iv) to purchase Property or services for the purpose of assuring the ability of the primary obligor to perform a primary obligation, or (v) otherwise to assure or hold harmless the holder of any primary obligation against loss in respect thereof. The amount of any Contingent Obligation shall be deemed to be the stated or determinable amount of the primary obligation (or, if less, the maximum amount for which such Person may be liable under the instrument evidencing the Contingent Obligation) or, if not stated or determinable, the maximum reasonably anticipated liability with respect thereto; provided that the term "Contingent Obligation" shall not include endorsements

for collection or deposit, in either case, in the Ordinary Course of Business, or customary and reasonable indemnity obligations in connection with any disposition of assets permitted under this Agreement (other than any such obligations with respect to Borrowed Money).

Control: possession, directly or indirectly, of the power to direct or cause direction of a Person's management or policies, whether through the ability to exercise voting power, by contract or otherwise.

Debt: as applied to any Person, without duplication, (a) all items that would be included as liabilities on a balance sheet in accordance with GAAP, excluding trade payables incurred and being paid in the Ordinary Course of Business, but including Capital Leases; (b) all Contingent Obligations in respect of obligations of the type described in clauses (a), (c) and (d); (c) all reimbursement obligations in connection with letters of credit issued for the account of such Person; and (d) in the case of a Borrower, the Obligations. The Debt of a Person shall include any recourse Debt of any partnership in which such Person is a general partner or joint venturer (unless such joint venture is itself a corporation or limited liability company), unless such Debt is expressly made non-recourse to such Person.

Default: an event or condition that, with the lapse of time or giving of notice, would constitute an Event of Default.

Default Rate: for any Obligation (including, to the extent permitted by law, interest not paid when due), 2.00% plus the interest rate otherwise applicable thereto.

Defaulting Lender: any Lender that (a) has failed to comply with its funding obligations hereunder, and such failure is not cured within two Business Days; (b) has notified Agent or any Borrower that such Lender does not intend to comply with its funding obligations hereunder or under any other credit facility, or has made a public statement to that effect; (c) has failed, within three Business Days following request by Agent or any Borrower, to confirm in a manner satisfactory to Agent and Borrowers that such Lender will comply with its funding obligations hereunder; or (d) has, or has a direct or indirect parent company that has, become the subject of an Insolvency Proceeding (including reorganization, liquidation, or appointment of a receiver, custodian, administrator or similar Person by the Federal Deposit Insurance Corporation or any other regulatory authority) or Bail-In Action; provided, that a Lender shall not be a Defaulting Lender solely by virtue of a Governmental Authority's ownership of an equity interest in such Lender or parent company unless the ownership provides immunity for such Lender from jurisdiction of courts within the United States or from enforcement of judgments or writs of attachment on its assets, or permits such Lender or Governmental Authority to repudiate or otherwise to reject such Lender's agreements.

Deposit Account Control Agreement: control agreement reasonably satisfactory to Agent executed by an institution maintaining a Deposit Account for an Obligor, to perfect Agent's Lien on such account.

Designated Jurisdiction: a country or territory that is the target of a Sanction.

Dilution Percent: the percent, determined for Borrowers' most recent trailing 12-month period for which a Borrowing Base Report has been delivered, equal to (a) bad debt write-downs or write-offs, discounts, returns, promotions, credits, credit memos and other dilutive items with respect to Accounts, divided by (b) gross sales.

Dilution Reserve: at any date of determination, an amount equal to one percent (1.00%) of the Value of Eligible Accounts for each percent or fraction thereof that the Dilution Percent exceeds five percent (5.00%).

Distribution: any declaration or payment of a distribution, interest or dividend on any Equity Interest (other than payment-in-kind); distribution, advance or repayment of Debt to a holder of Equity Interests; or purchase, redemption, or other acquisition or retirement for value of any Equity Interest.

Dollars: lawful money of the United States.

Domestic Subsidiary: a Subsidiary organized under the laws of the United States or any state or territory thereof or the District of Columbia other than a Foreign Subsidiary Holding Company.

Dominion Account: a special account established by Borrowers at Bank of America or another bank acceptable to Agent, over which Agent has exclusive control for withdrawal purposes.

EBITDA: for any period, the sum of the following determined on a consolidated basis, without duplication, for the Borrowers and their Subsidiaries in accordance with GAAP: (a) consolidated net income for such period; plus (b) the sum of the following, without duplication, to the extent deducted in determining consolidated net income for such period: (i) income and franchise Taxes; (ii) consolidated interest expense; (iii) amortization (including the amortization of intangibles), depreciation and other non cash charges (except to the extent that such non-cash charges are reserved for cash charges to be taken in the future); (iv) extraordinary, unusual or non-recurring losses; (v) non-cash equity-based compensation expenses; (vi) fees, costs and expenses related to the preparation, negotiation and execution of the Loan Documents; (vii) fees, costs and expenses related to any issuance or offering of equity interests or any issuance, amendment, modification or repayment of Debt permitted hereunder; (viii) fees, costs and expenses related to any Permitted Asset Disposition, Permitted Acquisition or other Investment permitted hereunder and any restructuring costs (including severance, relocation and retention expenses), integration costs, and write-offs of intangibles in connection with any such Permitted Asset Disposition, Permitted Acquisition or permitted Investment so long as such fees, costs and expenses do not exceed ten percent (10%) of EBITDA, measured after giving effect to this clause (vii) for the applicable period of measurement; (ix) non-cash losses arising from Permitted Asset Dispositions outside the Ordinary Course of Business; and (x) non-cash losses arising from Swaps or the early termination or repayment of Swaps or Debt, losses arising from currency translation and losses arising from purchase accounting adjustments; less (c) the sum of the following, without duplication, to the extent included in the determination of consolidated net income for such period: (i) interest income, (ii) any extraordinary, unusual or non-recurring gains; (iii) non-cash gains increasing consolidated net income; (iv) non-cash gains arising from Permitted Asset Dispositions outside the Ordinary Course of Business; and (v) non-cash gains arising from Swaps or the early termination or repayment of Swaps or Debt, gains arising from currency translation and gains arising from purchase accounting adjustments.

EEA Financial Institution: (a) any credit institution or investment firm established in an EEA Member Country that is subject to the supervision of an EEA Resolution Authority; (b) any entity established in an EEA Member Country that is a parent of an institution described in clause (a) above; or (c) any financial institution established in an EEA Member Country that is a subsidiary of an institution described in the foregoing clauses and is subject to consolidated supervision with its parent.

EEA Member Country: any of the member states of the European Union, Iceland, Liechtenstein and Norway.

EEA Resolution Authority: any public administrative authority or any Person entrusted with public administrative authority of an EEA Member Country (including any delegee) having responsibility for the resolution of any EEA Financial Institution.

Eligible Account: an Account owing to a Borrower that arises in the Ordinary Course of Business from the sale of goods or rendition of services and is payable in Dollars, Euros, Pounds Sterling or Canadian Dollars. Without limiting the foregoing, unless otherwise approved in writing by Agent, no Account shall be an Eligible Account if:

- (a) it is unpaid for more than 60 days after the original due date, or more than 120 days after the original invoice date;
- (b) 50% or more of the Accounts owing by the Account Debtor are not Eligible Accounts under the foregoing clause (a);
- (c) such Account, together with all other Eligible Accounts owing by such Account Debtor and its Affiliates, exceeds 15% of the aggregate Eligible Accounts (or, in each case, such other limitation as Agent may establish for any Account Debtor from time to time in writing);
- (d) it does not conform in any material respect with a covenant or representation herein;
- (e) it is owing by a creditor or supplier of the applicable Borrower, or the Account Debtor has disputed liability with respect to such Account, or the Account Debtor has made any claim with respect to any other Account due from such Account Debtor to the applicable Borrower, or the Account otherwise is or may become subject to right of setoff, counterclaim, recoupment, reserve, defense, chargeback, credit or allowance by the Account Debtor (but ineligibility shall be limited to the amount thereof);
- (f) an Insolvency Proceeding has been commenced by or against the Account Debtor; or the Account Debtor has failed, has suspended or ceased doing business, is liquidating, dissolving or winding up its affairs, is not Solvent, or is the target of any Sanction or any specially designated nationals list maintained by OFAC; or the Borrower is not able to bring suit or enforce remedies against the Account Debtor through judicial process;
- (g) the Account Debtor is organized or has its principal offices or assets outside an Account Debtor Approved Country, unless the Account is supported by a letter of credit (delivered to and directly drawable by Agent) or credit insurance satisfactory in all respects to Agent;



(h) it is owing by a Governmental Authority and in the aggregate with all other Eligible Accounts of such Governmental Authority exceeds \$500,000 (or such greater amount determined by Agent in its Permitted Discretion), unless such Account has been assigned to Agent in compliance with the federal Assignment of Claims Act or any applicable comparable state law, as applicable;

(i) it is not subject to a duly perfected, first priority Lien in favor of Agent, or is subject to any other Lien other than Permitted Liens;

(j) the goods giving rise to it have not been delivered to the Account Debtor, the services giving rise to it have not been accepted by the Account Debtor, or it otherwise does not represent a final sale, in each case, unless Agent, the applicable Borrower, and the Account Debtor have entered into an agreement reasonably acceptable to Agent wherein the Account Debtor acknowledges that (i) it has title to and has ownership of the goods wherever located, (ii) a bona fide sale of the goods has occurred, and (iii) it owes payment for such goods in accordance with invoices from the applicable Borrower (sometimes called "bill and hold" accounts);

(k) it is evidenced by Chattel Paper or an Instrument of any kind, or has been reduced to judgment;

(l) its payment has been extended beyond net 90 day terms or the Account Debtor has made a partial payment thereunder;

(m) it arises from a sale to an Affiliate of an Obligor, from a sale on a cash-on-delivery, bill-and-hold, sale or return, sale on approval, consignment, or other repurchase or return basis, or from a sale for personal, family or household purposes, in each case, unless Agent, the applicable Borrower, and the Account Debtor have entered into an agreement reasonably acceptable to Agent wherein the Account Debtor acknowledges that (i) it has title to and has ownership of the goods wherever located, (ii) a bona fide sale of the goods has occurred, and (iii) it owes payment for such goods in accordance with invoices from the applicable Borrower;

(n) it represents a progress billing or retainage, or relates to services for which a performance, surety or completion bond or similar assurance has been issued;

(o) it includes a billing for interest, fees or late charges, but ineligibility shall be limited to the extent thereof;

(p) it is denominated in Euros, Pounds Sterling or Canadian Dollars and the Account Debtors are not instructed pursuant to **Section 8.2.5** to pay such Accounts to a Dominion Account which can accept deposits and collections denominated in such currency; or

(p) it is deemed to be ineligible by Agent in its Permitted Discretion.

In calculating delinquent portions of Accounts under clauses (a) and (b), credit balances more than 90 days old will be excluded.

Eligible Assignee: (a) a Lender, Affiliate of a Lender or Approved Fund that satisfies **Section 12.13**; (b) an assignee approved by Borrower Agent (which approval shall not be unreasonably withheld or delayed, and shall be deemed given if no objection is made within five Business Days after notice of the proposed assignment) and Agent; or (c) during an Event of Default, any Person (other than a Defaulting Lender, a natural Person or a holding company, investment vehicle or trust for, or owned and operated for the primary benefit of, a natural Person) acceptable to Agent in its discretion.

**Eligible Inventory:** Inventory owned by a Borrower. Without limiting the foregoing, unless otherwise approved by Agent in writing, no Inventory shall be Eligible Inventory unless it (a) is finished goods or raw materials, and not work-in-process, packaging or shipping materials, labels, samples, display items, bags, replacement parts or manufacturing supplies; (b) is not held on consignment, nor subject to any deposit or down payment; (c) is in new and saleable condition and is not damaged, defective, shopworn or otherwise unfit for sale; (d) is not perishable, slow moving (as determined in a field exam or appraisal (in each case acceptable to Agent in its Permitted Discretion) obtained by Agent from an appraiser or a field examiner satisfactory to Agent in its Permitted Discretion), obsolete or unmerchantable, and does not constitute returned or repossessed goods; (e) meets all standards imposed by any Governmental Authority; (f) conforms in all material respects with the covenants and representations herein; (g) is subject to Agent's duly perfected, first priority Lien, and no other Lien other than Permitted Liens; (h) is within the continental United States or Canada, is not in transit except between locations of Borrowers, and is not consigned to any Person; (i) is not subject to any warehouse receipt or negotiable Document; (j) is not subject to any License or other arrangement that restricts such Borrower's or Agent's right to dispose of such Inventory, unless Agent has received an appropriate Lien Waiver; (k) is not located on leased premises or in the possession of a warehouseman, processor, repairman, mechanic, shipper, freight forwarder or other Person, unless the lessor or such Person has delivered a Lien Waiver or an appropriate Rent and Charges Reserve has been established; (l) is reflected in the details of a current perpetual inventory report; and (m) has not been deemed by Agent to be ineligible in its Permitted Discretion.

**Enforcement Action:** any action to enforce any Obligations (other than Secured Bank Product Obligations) or Loan Documents or to exercise any rights or remedies relating to any Collateral, whether by judicial action, self-help, notification of Account Debtors, setoff or recoupment, credit bid, deed in lieu of foreclosure, action in an Insolvency Proceeding or otherwise.

**Environmental Laws:** Applicable Laws (including programs, permits and guidance promulgated by regulators) relating to public health (other than occupational safety and health regulated by OSHA) or the protection or pollution of the environment, including the Resource Conservation and Recovery Act (42 U.S.C. §§6991-6991i), Clean Water Act (33 U.S.C. §1251 *et seq.*) and CERCLA.

**Environmental Notice:** a notice (whether written or oral) from any Governmental Authority or other Person of any possible noncompliance with, investigation of a possible violation of, litigation relating to, or potential fine or liability under any Environmental Law, or with respect to any Environmental Release, environmental pollution or hazardous materials, including any complaint, summons, citation, order, claim, demand or request for correction, remediation or otherwise.

**Environmental Release:** a release as defined in CERCLA or under any other Environmental Law.

**Equity Interest:** the interest of any (a) shareholder in a corporation; (b) partner in a partnership (whether general, limited, limited liability or joint venture); (c) member in a limited liability company; or (d) other Person having any other form of equity security or ownership interest.

**ERISA:** the Employee Retirement Income Security Act of 1974.

**ERISA Affiliate:** any trade or business (whether or not incorporated) under common control with an Obligor within the meaning of Section 414(b) or (c) of the Code (and Sections 414(m) and (o) of the Code for purposes of provisions relating to Section 412 of the Code).

**ERISA Event:** (a) a Reportable Event with respect to a Pension Plan; (b) withdrawal of an Obligor or ERISA Affiliate from a Pension Plan subject to Section 4063 of ERISA during a plan year in which it was

a substantial employer (as defined in Section 4001(a)(2) of ERISA) or a cessation of operations that is treated as such a withdrawal under Section 4062(e) of ERISA; (c) complete or partial withdrawal of an Obligor or ERISA Affiliate from a Multiemployer Plan; (d) filing of a notice of intent to terminate, treatment of a Pension Plan amendment as a termination under Section 4041 or, with respect to a Multiemployer Plan, Section 4041A of ERISA, or institution of proceedings by the PBGC to terminate a Pension Plan; (e) determination that a Pension Plan is considered an at-risk plan or that a Multiemployer Plan is in critical or endangered status under the Code or ERISA; (f) an event or condition that constitutes grounds under Section 4042 of ERISA for termination of, or appointment of a trustee to administer, any Pension Plan; (g) imposition of any liability on an Obligor or ERISA Affiliate under Title IV of ERISA, other than for PBGC premiums due but not delinquent under Section 4007 of ERISA; or (h) failure by an Obligor or ERISA Affiliate to meet all applicable requirements under the Pension Funding Rules in respect of a Pension Plan, whether or not waived, or to make a required contribution to a Multiemployer Plan.

EU Bail-In Legislation Schedule: the EU Bail-In Legislation Schedule published by the Loan Market Association, as in effect from time to time.

Event of Default: as defined in **Section 11**.

Excluded Accounts: (i) escrow accounts and trust accounts; (ii) payroll accounts; (iii) accounts used for payroll taxes and/or withheld income taxes; (iv) accounts used for employee wage and benefit payments; (v) accounts pledged to secure performance (including to secure letters of credit and bank guarantees) to the extent constituting Permitted Liens; (vi) custodial accounts; (vii) zero balance accounts, and (viii) accounts established and used solely for Bank Products to the extent a Lien thereon is prohibited by the applicable agreement governing such Bank Products accounts.

Excluded Foreign Subsidiary: a Subsidiary of a Borrower that is: (a) a Foreign Subsidiary; or (b) owned directly or indirectly by a Foreign Subsidiary or by a Foreign Subsidiary Holding Company, irrespective of whether it is a Domestic Subsidiary or a Foreign Subsidiary.

Excluded Property: (i) (a) any Equity Interests issued by any Excluded Foreign Subsidiary, in each case, owned directly by an Obligor, in excess of 65% of the issued and outstanding Equity Interests of such Subsidiary entitled to vote and (b) any assets of any Excluded Foreign Subsidiary; (ii) any right, title or interest in any lease, permit, license or other contractual obligation entered into by such Obligor, or any franchise to which such Obligor is a party or any of its rights or interests thereunder, and any property subject to any of the foregoing, to the extent, but only to the extent, that the grant of a security interest therein would, under the terms of such lease, permit, license, contractual obligation, or franchise be prohibited or require the consent of any person other than such Obligor or any of its Affiliates which consent has not been obtained as a condition to the creation of such security interest, or which would be breached or give any party the right to terminate it as a result of the creation of such security interest, but only, in each case, to the extent, and only for so long as, such prohibition is not terminated or rendered unenforceable or otherwise deemed ineffective by the UCC; provided that immediately upon the ineffectiveness, lapse or termination of any such provision, the Collateral shall include, and such Obligor shall be deemed to have granted a security interest in, all such rights and interests as if such provision had never been in effect; (iii) any property now owned or hereafter acquired by such Obligor that is subject to a Purchase Money Lien or a Capital Lease, if the contractual obligation pursuant to which such Lien is granted (or the documentation providing for such Purchase Money Lien or Capital Lease) prohibits the creation by such Obligor of a Lien on such property or requires the consent of any person other than such Obligor or any of its Affiliates which consent has not been obtained as a condition to the creation of any other Lien on such property; (iv) Equity Interests in any joint venture with a third party that is not an Affiliate of such Obligor, to the extent a pledge of such Equity Interests is prohibited by a provision in the documents governing such joint venture that is not entered into

in contemplation of this Agreement; (v) Equity Interests in any Person other than any wholly-owned Subsidiary, to the extent requiring the consent of one or more third parties that is not an Affiliate of the Obligors or prohibited by the terms of any applicable organizational documents or shareholders' agreement, in each case, that is not entered into in contemplation of this Agreement; (vi) any intent-to-use trademark application to the extent that, and solely during the period in which, the grant of a security interest therein would impair the registrability, validity or enforcement of such application under Applicable Law; provided that at the time any such application matures into an actual use application by the applicable Obligor's receipt of written notification from the USPTO of its acceptance of either an "Amendment to Allege Use" pursuant to Section 1(c) of the Lanham Act, 15 U.S.C. § 1051, or "Statement Of Use" pursuant to Section 1(d) of the Lanham Act, 15 U.S.C. § 1051, the Collateral shall include, and such Obligor shall be deemed to have granted a security interest in, such actual use application; (vi) any Excluded Accounts; (vii) any motor vehicles, airplanes, vessels or other assets subject to certificates of title; (viii) any margin stock; (ix) Letter-of-Credit Rights to the extent not constituting Supporting Obligations (except to the extent a security interest therein can be perfected by the filing of a UCC financing statement); (x) any assets the grant of a security interest in which would be prohibited by Applicable Law but only, in each case, to the extent, and only for so long as, such prohibition is not terminated or rendered unenforceable or otherwise deemed ineffective by the UCC; provided that immediately upon the ineffectiveness, lapse or termination of any such prohibition, the Collateral shall include, and such Obligor shall be deemed to have granted a security interest in, such assets as if such provision had never been in effect; and (xi) any Real Estate; (xii) any assets for which the Agent and Borrower Agent have agreed that the cost of obtaining a security interest in such assets is excessive in relation to the value afforded thereby.

Excluded Subsidiary shall mean (a) any Excluded Foreign Subsidiary; (b) any Subsidiary that is prohibited by applicable law, rule or regulation from guaranteeing the Obligations; (c) any Subsidiary with respect to which Guaranteeing the Obligations would require consent, approval, license or authorization from any Governmental Authority, unless such consent, approval, license or authorization has been received and is in effect (provided that the Borrowers shall be under no obligation to seek such consent, approval, license or authorization); (d) any Subsidiary for which the guaranteeing of the Obligations would result in material adverse tax consequences to the Borrowers and the Subsidiaries (as determined by the Borrower Agent in good faith); and (e) any other Subsidiary with respect to which, the Agent and the Borrower Agent agree that the burden or cost of providing a guarantee of the Obligations is excessive in relation to the benefits to be obtained by the Lenders therefrom.

Excluded Swap Obligation: with respect to an Obligor, each Swap Obligation as to which, and only to the extent that, such Obligor's guaranty of or grant of a Lien as security for such Swap Obligation is or becomes illegal under the Commodity Exchange Act because the Obligor does not constitute an "eligible contract participant" as defined in the act (determined after giving effect to any keepwell, support or other agreement for the benefit of such Obligor and all guaranties of Swap Obligations by other Obligors) when such guaranty or grant of Lien becomes effective with respect to the Swap Obligation. If a hedging agreement governs more than one Swap Obligation, only the Swap Obligation(s) or portions thereof described in the foregoing sentence shall be Excluded Swap Obligation(s) for the applicable Obligor.

Excluded Taxes: (a) Taxes imposed on or measured by a Recipient's net income (however denominated), franchise Taxes and branch profits Taxes (i) as a result of such Recipient being organized under the laws of, or having its principal office or applicable Lending Office located in, the jurisdiction imposing such Tax, or (ii) constituting Other Connection Taxes; (b) U.S. federal withholding Taxes imposed on amounts payable to or for the account of a Lender with respect to its interest in a Loan or Commitment pursuant to a law in effect when the Lender acquires such interest (except pursuant to an assignment request by Borrower Agent under **Section 13.4**) or changes its Lending Office, unless the Taxes were payable to its

assignor immediately prior to such assignment or to the Lender immediately prior to its change in Lending Office; (c) Taxes attributable to a Recipient's failure to comply with **Section 5.9**; and (d) Taxes imposed pursuant to FATCA.

**Extraordinary Expenses:** all reasonable and documented costs, expenses or advances incurred by Agent during a Default or Event of Default or an Obligor's Insolvency Proceeding, including those relating to (a) any audit, inspection, repossession, storage, repair, appraisal, insurance, manufacture, preparation or advertising for sale, sale, collection, or other preservation of or realization upon any Collateral; (b) any action, arbitration or other proceeding (whether instituted by or against Agent, any Lender, any Obligor, any creditor(s) of an Obligor or any other Person) in any way relating to any Collateral, Agent's Liens, Loan Documents, Letters of Credit or Obligations, including any lender liability or other Claims; (c) exercise of any rights or remedies of Agent in, or the monitoring by Agent of, any Insolvency Proceeding; (d) settlement or satisfaction by Agent of taxes, charges or Liens with respect to any Collateral; (e) any Enforcement Action by Agent; and (f) negotiation and documentation by Agent of any modification, waiver, workout, restructuring or forbearance with respect to any Loan Documents or Obligations. Such reasonable and documented costs, expenses and advances include transfer fees, Other Taxes, storage fees, insurance costs, permit fees, utility reservation and standby fees, legal fees (limited to one primary counsel for the Agent and the Lenders, taken as a whole, and one local counsel for the Agent and the Lenders, taken as a whole, in each appropriate jurisdiction, and in the case of a conflict of interest, one additional counsel for each set of similarly situated affected parties), appraisal fees, brokers' and auctioneers' fees and commissions, accountants' fees, environmental study fees, wages and salaries paid to employees of any Obligor or independent contractors in liquidating any Collateral, and travel expenses, in each case, that are incurred by Agent.

**FATCA:** Sections 1471 through 1474 of the Code, as of the date of this Agreement (or any amended or successor version that is substantively comparable and not materially more onerous to comply with), any current or future regulations or official interpretations thereof, any agreements entered into pursuant to Section 1471(b)(1) of the Code and any fiscal or regulatory legislation, rules or practices adopted pursuant to any intergovernmental agreement, treaty or convention among Governmental Authorities and implementing such Sections of the Code.

**Federal Funds Rate:** (a) the weighted average per annum interest rate on overnight federal funds transactions with members of the Federal Reserve System on the applicable day (or the preceding Business Day, if the applicable day is not a Business Day), as published by the Federal Reserve Bank of New York on the next Business Day; or (b) if the rate is not so published, the average per annum rate (rounded up to the nearest 1/8 of 1%) charged to Bank of America on the applicable day on such transactions, as reasonably determined by Agent; provided, that in no event shall the Federal Funds Rate be less than zero.

**Financial Covenant Trigger Period:** the period (a) commencing on any day that (i) an Event of Default occurs, or (ii) subject to **Section 2.1.7**, Availability is less than \$5,000,000; and (b) continuing until, during each of the preceding 90 consecutive days, no Event of Default has existed and, subject to **Section 2.1.7**, Availability has been more than \$5,000,000.

**Fiscal Quarter:** each period of three (3) months, commencing on the first day of a Fiscal Year.

**Fiscal Year:** the fiscal year of Borrowers and Subsidiaries for accounting and tax purposes, ending on December 31 of each year.

**Fixed Charge Coverage Ratio:** the ratio, determined on a consolidated basis for Borrowers and Subsidiaries for the most recently completed four Fiscal Quarter period for which a Compliance Certificate and related financial statements have been delivered, of (a) EBITDA minus Capital Expenditures (except

those financed with Borrowed Money other than Loans) and cash income taxes paid, to (b) Fixed Charges. For purposes of determining the Fixed Charge Coverage Ratio as of September 30, 2019, December 31, 2019 and March 31, 2020, each of the foregoing items shall be determined for the period commencing July 1, 2019 through the last day of the Fiscal Quarter then being tested.

Fixed Charges: the sum of cash interest expense (other than payment-in-kind), scheduled principal payments made on Borrowed Money other than Loans, and Distributions made by Calix.

FLSA: the Fair Labor Standards Act of 1938.

Flood Laws: the National Flood Insurance Act of 1968, Flood Disaster Protection Act of 1973 and related laws.

Foreign Lender: any Lender that is not a U.S. Person.

Foreign Plan: any employee benefit plan or arrangement (a) maintained or contributed to by any Obligor or Subsidiary that is not subject to the laws of the United States; or (b) mandated by a government other than the United States for employees of any Obligor or Subsidiary.

Foreign Subsidiary: any Subsidiary which is not a Domestic Subsidiary.

Foreign Subsidiary Holding Company: any direct or indirect Subsidiary of a Borrower, all or substantially all of the assets of which consist of, directly or indirectly, the Equity Interests in one or more Foreign Subsidiaries and any of such Foreign Subsidiaries' Subsidiaries.

Fronting Exposure: a Defaulting Lender's interest in LC Obligations, Swingline Loans and Protective Advances, except to the extent Cash Collateralized by the Defaulting Lender or allocated to other Lenders hereunder.

Full Payment: with respect to any Obligations, (a) the full and indefeasible cash payment thereof (other than contingent obligations not then due and payable or for which a claim has not yet been made and other than obligations in respect of any Secured Bank Product Obligations to the extent such Secured Bank Product Obligations have been Cash Collateralized or the applicable Secured Bank Product Provider and Obligor have made other arrangements reasonably acceptable to the applicable Secured Bank Product Provider), including any interest, fees and other charges accruing during an Insolvency Proceeding (whether or not allowed in the proceeding); and (b) if such Obligations are LC Obligations, Cash Collateralization thereof (or delivery of a standby letter of credit reasonably acceptable to Agent in its discretion, in the amount of required Cash Collateral). No Loans shall be deemed to have been paid in full unless all Commitments related to such Loans are terminated.

GAAP: generally accepted accounting principles in effect in the United States from time to time.

Governmental Approvals: all authorizations, consents, approvals, licenses and exemptions of, registrations and filings with, and required reports to, all Governmental Authorities.

Governmental Authority: any federal, state, local, foreign or other agency, authority, body, commission, court, instrumentality, political subdivision, central bank, or other entity or officer exercising executive, legislative, judicial, taxing, regulatory or administrative powers or functions for any governmental, judicial, investigative, regulatory or self-regulatory authority (including the Financial Conduct Authority, the Prudential Regulation Authority and any supra-national bodies such as the European Union or European Central Bank).

**Guarantor Payment:** as defined in **Section 5.10.3**.

**Guarantors:** Each Person that guarantees payment or performance of Obligations. For the avoidance of doubt, no Foreign Subsidiary or Foreign Subsidiary Holding Company shall be a Guarantor.

**Guaranty:** each guaranty agreement executed by a Guarantor in favor of Agent.

**Indemnified Taxes:** (a) Taxes, other than Excluded Taxes, imposed on or relating to any payment of any obligation of any Obligor under this Agreement or any Security Agreement; and (b) to the extent not otherwise described in clause (a), Other Taxes.

**Indemnitees:** Agent Indemnitees, Lender Indemnitees and Issuing Bank Indemnitees.

**Insolvency Proceeding:** any case or proceeding commenced by or against a Person under any state, federal or foreign law for, or any agreement of such Person to, (a) the entry of an order for relief under the Bankruptcy Code, or any other insolvency, debtor relief or debt adjustment law; (b) the appointment of a receiver, trustee, liquidator, administrator, conservator or other custodian for such Person or any part of its Property; or (c) an assignment or trust mortgage for the benefit of creditors.

**Intellectual Property:** all intellectual and similar Property of a Person, including inventions, designs, patents, copyrights, trademarks, service marks, trade names, trade secrets, confidential or proprietary information, customer lists, know-how, software and databases; all embodiments or fixations thereof and all related documentation, applications, registrations and franchises; all licenses or other rights to use any of the foregoing; and all books and records relating to the foregoing.

**Intellectual Property Claim:** any claim or assertion (whether in writing, by suit or otherwise) that a Borrower's or Subsidiary's ownership, use, marketing, sale or distribution of any Inventory, Equipment, Intellectual Property or other Property violates another Person's Intellectual Property.

**Interest Period:** as defined in **Section 3.1.3**.

**Inventory:** as defined in the UCC, including all goods intended for sale, lease, display or demonstration; all work in process; and all raw materials, and other materials and supplies of any kind that are or could be used in connection with the manufacture, printing, packing, shipping, advertising, sale, lease or furnishing of such goods, or otherwise used or consumed in a Borrower's business (but excluding Equipment).

**Inventory Formula Amount:** (i) at all times prior to the receipt by Agent of an appraisal conducted by an appraiser and in form and substance satisfactory to Agent in its Permitted Discretion, the lesser of (a) \$6,500,000; and (b) 25% of the Value of Eligible Inventory, and (ii) upon and at all times after receipt by Agent of such appraisal, the least of (a) \$15,000,000, (b) 60% of the Value of Eligible Inventory, (c) 85% of the NOLV Percentage of the Value of Eligible Inventory and (d) the sum of (i) Non-Investment Grade Accounts Formula Amount and (ii) Investment Grade Accounts Formula Amount.

**Inventory Reserve:** reserves established by Agent in its Permitted Discretion to reflect factors that may negatively impact the Value of Inventory, including change in salability, obsolescence, seasonality, theft, shrinkage, imbalance, change in composition or mix, markdowns and vendor chargebacks.

**Investment:** (i) loans or advances of money to any Person; (ii) an Acquisition, an acquisition of record or beneficial ownership of any Equity Interests of a Person, or (iii) an advance or capital contribution to or other investment in a Person.

IRS: the United States Internal Revenue Service.

Investment Grade Accounts Formula Amount: 90% of the Value of Investment Grade Eligible Accounts.

Investment Grade Eligible Accounts: Eligible Accounts owing from any Account Debtor so long as such Account Debtor maintains a credit rating of at least BBB- or higher by S&P or Baa3 or higher by Moody's.

Issuing Bank: Bank of America (including any Lending Office of Bank of America), or any replacement issuer appointed pursuant to **Section 2.2.4**.

Issuing Bank Indemnitees: Issuing Bank and its officers, directors, employees, Affiliates, agents, advisors and attorneys.

Judgment Currency: as defined in **Section 1.6**.

LC Application: an application by Borrower Agent to Issuing Bank for issuance of a Letter of Credit, in form and substance reasonably satisfactory to Issuing Bank and Agent.

LC Conditions: upon giving effect to issuance of a Letter of Credit, (a) the conditions in **Section 6.2** are satisfied; (b) total LC Obligations do not exceed the Letter of Credit Subline and Revolver Usage does not exceed the Borrowing Base; (c) the Letter of Credit and payments thereunder are denominated in Dollars or other currency satisfactory to Agent and Issuing Bank; and (d) the form of the Letter of Credit are reasonably satisfactory to Agent and Issuing Bank.

LC Documents: all documents, instruments and agreements (including requests and applications) delivered by any Borrower to Issuing Bank or Agent in connection with a Letter of Credit.

LC Obligations: the sum of (a) all amounts owing by Borrower for draws under Letters of Credit; and (b) the Stated Amount of all outstanding Letters of Credit.

LC Request: a request by Borrower Agent for issuance of a Letter of Credit in form and substance reasonably satisfactory to Agent and Issuing Bank.

Lender Indemnitees: Lenders and Secured Bank Product Providers, and their officers, directors, employees, Affiliates, agents, advisors and attorneys.

Lenders: lenders party to this Agreement (including Agent in its capacity as provider of Swingline Loans or Protective Advances) and any Person who hereafter becomes a "Lender" pursuant to an Assignment, including any Lending Office of the foregoing.

Lending Office: the office (including any domestic or foreign Affiliate or branch) designated as such by Agent, a Lender or Issuing Bank by notice to Borrower Agent and, if applicable, Agent.

Letter of Credit: any standby or documentary letter of credit, foreign guaranty, documentary bankers acceptance, indemnity, reimbursement agreement or similar instrument issued by Issuing Bank for the account or benefit of a Borrower or Affiliate of a Borrower.

Letter of Credit Subline: \$10,000,000.



LIBOR: the per annum rate of interest (rounded up to the nearest 1/8th of 1%) determined by Agent at or about 11:00 a.m. (London time) two Business Days prior to an interest period, for a term equivalent to such period, equal to the London interbank offered rate, as published on the applicable Reuters screen page (or other commercially available source for such rate designated by Agent from time to time); provided, that any comparable or successor rate shall be applied by Agent, if administratively feasible, in a manner consistent with market practice; and provided further, that in no event shall LIBOR be less than zero (0).

LIBOR Loan: a Loan that bears interest based on LIBOR.

LIBOR Screen Rate: as defined in **Section 1.5**.

LIBOR Successor Rate: as defined in **Section 1.5**.

LIBOR Successor Rate Conforming Changes: with respect to any proposed LIBOR Successor Rate, any conforming changes to this Agreement, including changes to Base Rate, Interest Period, timing and frequency of determining rates and payments of interest and other administrative matters as may be appropriate, in Agent's reasonable discretion, to reflect the adoption of such LIBOR Successor Rate and to permit its administration by Agent in a manner substantially consistent with market practice (or, if Agent reasonably determines that adoption of any portion of such market practice is not administratively feasible or that no market practice for the administration of such LIBOR Successor Rate exists, in such other manner of administration as Agent determines in consultation with Borrower Agent).

License: any license or agreement under which an Obligor is authorized to use Intellectual Property in connection with any manufacture, marketing, distribution or disposition of Collateral, any use of Property or any other conduct of its business.

Licensor: any Person from whom an Obligor obtains the right to use any Intellectual Property.

Lien: an interest in Property securing an obligation or claim, including any lien, security interest, pledge, hypothecation, assignment, trust, reservation, assessment right, encroachment, easement, right-of-way, covenant, condition, restriction, lease, or other title exception or encumbrance.

Lien Waiver: an agreement, in form and substance reasonably satisfactory to Agent, by which (a) for any material Collateral located on leased premises, the lessor waives or subordinates any Lien it may have on the Collateral, and allows Agent to enter the premises and remove, store and dispose of Collateral; (b) for any Collateral held by a warehouseman, processor, shipper, customs broker or freight forwarder, such Person waives or subordinates any Lien it may have on the Collateral, agrees to hold any Documents in its possession relating to the Collateral as agent for Agent, and agrees to deliver Collateral to Agent upon request; (c) for any Collateral held by a repairman, mechanic or bailee, such Person acknowledges Agent's Lien, waives or subordinates any Lien it may have on the Collateral, and agrees to deliver Collateral to Agent upon request; and (d) for any Collateral subject to a Licensor's Intellectual Property rights, the Licensor grants to Agent the right, vis-à-vis such Licensor, to enforce Agent's Liens with respect to the Collateral, including the right to dispose of it with the benefit of the License in such Intellectual Property, whether or not a default exists under any applicable License.

Liquidity: unrestricted cash and Cash Equivalents of the Borrowers maintained in domestic Accounts held at (a) Bank of America, N.A., or its Affiliates, and (b) from the Closing Date through and including the date that is 180 days (or such later date as may be agreed by the Agent) after the Closing Date, Silicon Valley Bank, and, in each case subject to a perfected Lien in favor of Agent.

Loan: a loan made by a Lender under the credit facility established by this Agreement.

Loan Documents: this Agreement, Other Agreements and Security Documents.

Loan Year: each 12 month period commencing on the Closing Date or an anniversary thereof.

Margin Stock: as defined in Regulation U of the Federal Reserve Board of Governors.

Material Adverse Effect: the effect of any event or circumstance that, taken alone or in conjunction with other events or circumstances, has or could be reasonably expected to have a material adverse effect on (a) the business, operations, Properties or condition (financial or otherwise) of the Obligors and their Subsidiaries, taken as a whole, (b) the enforceability against any Obligor of any Loan Document to which it is a party; (c) the ability of the Obligors, taken as a whole, to perform their payment obligations under the Loan Documents; or (d) the ability of Agent or any Lender to enforce their rights and remedies under the Loan Documents.

Material Contract: any agreement or arrangement to which a Borrower or Subsidiary is party (other than the Loan Documents) (a) that is deemed to be a material contract under any securities law applicable to such Person, including the Securities Act of 1933; (b) for which breach, termination, nonperformance or failure to renew could reasonably be expected to have a Material Adverse Effect; or (c) that relates to Borrowed Money (other than Permitted Purchase Money Debt) in an aggregate amount of \$5,000,000 or more.

Material Debt: Borrowed Money (other than Permitted Purchase Money Debt) having an aggregate outstanding principal amount in excess of \$5,000,000.

Moody's: Moody's Investors Service, Inc. or any successor.

Multiemployer Plan: any employee benefit plan of the type described in Section 4001(a)(3) of ERISA, to which an Obligor or ERISA Affiliate makes or is obligated to make contributions, or during the preceding five plan years, has made or been obligated to make contributions.

Multiple Employer Plan: a Plan with two or more contributing sponsors, including an Obligor or ERISA Affiliate, at least two of whom are not under common control, as described in Section 4064 of ERISA.

Net Proceeds: with respect to an Asset Disposition, proceeds (including, when received, any deferred or escrowed payments) received by a Borrower or Subsidiary in cash and Cash Equivalents from such disposition, net of (a) reasonable and customary costs and expenses actually incurred in connection therewith, including legal fees and sales commissions; (b) amounts applied to repayment of Debt secured by a Permitted Lien on the Property sold; (c) income, transfer or similar taxes paid or reasonably estimated to be payable; (d) reserves for indemnities and contingent liabilities, until such reserves are no longer needed; and (e) amounts attributable to non-controlling interest holders in any non-wholly owned Subsidiary.

NOLV Percentage: the net orderly liquidation value of Inventory, expressed as a percentage, expected to be realized at an orderly, negotiated sale held within a reasonable period of time, net of all liquidation expenses, as determined from the most recent appraisal of Borrowers' Inventory performed by an appraiser and on terms reasonably satisfactory to Agent.

Non-Investment Grade Eligible Accounts Formula Amount: 85% of the Value of Non-Investment Grade Eligible Accounts.

Non-Investment Grade Eligible Accounts: Eligible Accounts other than Investment Grade Eligible Accounts.

Notice of Borrowing: a request by Borrower Agent for a Borrowing in form and substance reasonably satisfactory to Agent.

Notice of Conversion/Continuation: a request by Borrower Agent for conversion or continuation of a Loan as a LIBOR Loan, in form of Exhibit H or otherwise in form and substance reasonably satisfactory to Agent.

Obligations: all (a) principal of and premium, if any, on the Loans, (b) LC Obligations and other obligations of Obligor with respect to Letters of Credit, (c) interest, expenses, fees, indemnification obligations, Claims and other amounts payable by Obligor under Loan Documents, (d) Secured Bank Product Obligations, and (e) other Debts, obligations and liabilities of any kind owing by Obligor pursuant to the Loan Documents, in each case whether now existing or hereafter arising, whether evidenced by a note or other writing, whether allowed in any Insolvency Proceeding, whether arising from an extension of credit, issuance of a letter of credit, acceptance, loan, guaranty, indemnification or otherwise, and whether direct or indirect, absolute or contingent, due or to become due, primary or secondary, or joint or several; provided, that Obligations of an Obligor shall not include its Excluded Swap Obligations.

Obligor: each Borrower, Guarantor or other Person that is liable for payment of any Obligations or that has granted a Lien on its assets in favor of Agent to secure any Obligations.

OFAC: Office of Foreign Assets Control of the U.S. Treasury Department.

Ordinary Course of Business: the ordinary course of business of any Borrower or Subsidiary, undertaken in good faith and consistent with Applicable Law.

Organic Documents: with respect to any Person, its charter, certificate or articles of incorporation, bylaws, articles of organization, limited liability agreement, operating agreement, members agreement, shareholders agreement, partnership agreement, certificate of partnership, certificate of formation, voting trust agreement, or similar agreement or instrument governing the formation or operation of such Person.

OSHA: the Occupational Safety and Hazard Act of 1970.

Other Agreement: each (a) LC Document, fee letter, Lien Waiver, any subordination agreement, or (b) other note, document, instrument or agreement (other than this Agreement or a Security Document) now or hereafter delivered by an Obligor or other Person to Agent or a Lender in connection with this Agreement and designated by the Borrower Agent as an "Other Agreement".

Other Connection Taxes: Taxes imposed on a Recipient due to a present or former connection between it and the taxing jurisdiction (other than connections arising from the Recipient having executed, delivered, become party to, performed obligations or received payments under, received or perfected a Lien or engaged in any other transaction pursuant to, enforced, or sold or assigned an interest in, any Loan or Loan Document).

Other Taxes: all present or future stamp, court, documentary, intangible, recording, filing or similar Taxes that arise from any payment made under, from the execution, delivery, performance, enforcement or registration of, from the receipt or perfection of a Lien under, or otherwise with respect to, any Loan Document, except Other Connection Taxes imposed with respect to an assignment (other than an assignment made pursuant to **Section 13.4(c)**).

Overadvance: the amount by which Revolver Usage exceeds the Borrowing Base at any time.

Participant: as defined in **Section 13.2**.

Patriot Act: the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, Pub. L. No. 107-56, 115 Stat. 272 (2001).

Payment Item: each check, draft or other item of payment payable to a Borrower, including those constituting proceeds of any Collateral.

Payment Conditions: as to any relevant action contemplated in this Agreement, the satisfaction of each of the following conditions:

- (a) as of the date of any such action and immediately after giving effect thereto, no Default or Event of Default has occurred and is continuing;
- (b) as of the date of any such action, the Start Date (as defined in **Section 10.3.2**) has occurred;
- (c) either:
  - (i) subject to **Section 2.1.7**, Availability (after giving pro forma effect to such action) during the thirty (30) consecutive day period ending on and including the date of such action, shall be not less than \$7,500,000; or
  - (ii) (x) subject to **Section 2.1.7**, Availability (after giving pro forma effect to such action) during the thirty (30) consecutive day period ending on and including the date of such action, shall be not less than \$6,500,000 and (y) the Fixed Charge Coverage Ratio as of the end of the most recently ended measurement period (as determined pursuant to **Section 10.3.2**) prior to such action, determined on a pro forma basis after giving effect to such action, shall be equal to or greater than 1.00 to 1.00; and
- (d) the Agent shall have received a certificate from a Senior Officer of the Borrower Agent certifying as to compliance with the preceding clauses and demonstrating (in reasonable detail) the calculations required thereunder.

PBGC: the Pension Benefit Guaranty Corporation.

Pension Funding Rules: Code and ERISA rules regarding minimum required contributions (including installment payments) to Pension Plans (or Multiemployer Plans, as applicable) set forth in Sections 412, 430, 431, 432 and 436 of the Code and Sections 302, 303, 304 and 305 of ERISA.

Pension Plan: any employee pension benefit plan (as defined in Section 3(2) of ERISA), other than a Multiemployer Plan, that is subject to Title IV of ERISA and is sponsored or maintained by any Obligor or ERISA Affiliate or to which the Obligor or ERISA Affiliate contributes or has an obligation to contribute, or in the case of a Multiple Employer Plan, has made contributions at any time during the preceding five plan years.

Permitted Acquisition: any Acquisition as long as (a) the Acquisition is consensual; (b) the assets, business or Person being acquired is useful or engaged in the business of Borrowers and Subsidiaries; (c) no Debt or Liens are assumed or incurred, except for Debt and Liens permitted under **Sections 10.2.1** and **10.2.2**; (d) the Payment Conditions are satisfied with respect thereto; and (e) Borrowers deliver to Agent, at least 5 Business Days prior to the Acquisition (or such later date as may be agreed by the Agent), copies of

all material agreements relating thereto and a certificate stating that the Acquisition is a “Permitted Acquisition” and demonstrating compliance with the foregoing requirements.

Permitted Asset Disposition: an Asset Disposition constituting (a) sale of Inventory in the Ordinary Course of Business; (b) the abandonment, cancellation, non-renewal, or discontinuance of the use or maintenance of Intellectual Property or rights relating thereto in the Ordinary Course of Business; (c) non-exclusive licenses and sublicenses of Intellectual Property rights in the Ordinary Course of Business not interfering, individually or in the aggregate, in any material respect with the conduct of the business of the Borrowers and their Subsidiaries; (d) leases, subleases, licenses, or sublicenses of real or personal property granted by the Borrower or any of its Subsidiaries to others, in each case, in the Ordinary Course of Business not interfering, individually or in the aggregate, in any material respect with the business of the Borrowers or any of their Subsidiaries; (e) Investments and Distributions not prohibited hereunder; (f) any involuntary loss, damage or destruction of property or any involuntary condemnation, seizure or taking, by exercise of the power of eminent domain or otherwise, or confiscation or requisition of use of property; (g) Asset Dispositions of Property to the extent that: (i) such Property is exchanged for, or credited against the purchase price of, similar replacement Property; or (ii) the Net Cash Proceeds of such Asset Disposition are promptly applied to the purchase price of such replacement Property; (h) (i) surrender or waiver of contractual rights or the settlement or waiver of contractual or litigation claims in the Ordinary Course of Business; and (ii) the sale, license or other transfer of Intellectual Property rights in connection with the settlement or waiver of contractual or litigation claims; provided that such sale, license or transfer does not materially interfere with the business of the Borrowers and their Subsidiaries, taken as a whole; (i) termination of licenses, leases, and other contractual rights in the Ordinary Course of Business, which does not materially interfere with the conduct of business of the Borrowers and their Subsidiaries and is not disadvantageous to the rights or remedies of the Lenders; (j) disposition of worn-out, obsolete, unmerchantable or otherwise unsalable Inventory or Equipment or Property no longer used or useful in the business of the Borrowers and their Subsidiaries; (k) compromise or workout of Accounts that are past due in the Ordinary Course of Business; (l) a disposition approved in writing by Agent and Required Lenders; or (m) other Asset Dispositions not otherwise permitted; provided that: (i) at the time of such Asset Disposition, no Event of Default shall exist or would result from such Asset Disposition; (ii) such Asset Disposition is made for fair market value and the consideration received, if any, shall be no less than 75% in cash; provided that solely for purposes of the foregoing, the following consideration shall be treated as cash: (x) any consideration arising from the assumption of any liabilities (other than liabilities that are by their terms subordinated to the Obligations) so long as the Borrower and the Subsidiaries are fully released therefrom, and (y) up to \$1,000,000 in non-cash consideration; (iii) the aggregate fair market value of all property disposed of in reliance on this clause (m) shall not exceed \$1,000,000 in any Fiscal Year; and (iv) if such Asset Disposition under this clause (m) consists of Eligible Accounts or Eligible Inventory that are included in the Borrowing Base at such time, Borrower Agent shall deliver an updated Borrowing Base Report reflecting such Asset Disposition immediately prior to the consummation of such Asset Disposition.

Permitted Contingent Obligations: Contingent Obligations (a) arising from endorsements of Payment Items for collection or deposit in the Ordinary Course of Business; (b) relating to Swaps permitted hereunder; (c) existing on the Closing Date, and any extension or renewal thereof that does not increase the amount of such Contingent Obligation when extended or renewed; (d) incurred in the Ordinary Course of Business with respect to surety, appeal or performance bonds, or other similar obligations; (e) arising from customary indemnification obligations in favor of purchasers in connection with dispositions permitted hereunder; (f) arising under the Loan Documents; (g) in respect of obligations or liabilities of any other Obligor permitted hereunder; or (h) in an aggregate amount of \$1,000,000 or less at any time.

Permitted Discretion: a determination made in good faith, using commercially reasonable business judgment (from the perspective of a secured, asset-based lender).

Permitted Distribution: (a) Distributions in the form of Equity Interests, (b) repurchases of Equity Interests in the Borrower deemed to occur upon exercise of stock options or warrants if such Equity Interests represent a portion of the exercise price of such options or warrants, (c) payments made or expected to be made by any Borrower in respect of withholding or similar Taxes payable by any future, present, or former employee, director, manager, or consultant, and any repurchases of Equity Interests in consideration of such payments, including deemed repurchases in connection with the exercise of stock options or the vesting of restricted stock, (d) cash payments in lieu of fractional shares in connection with the exercise of warrants, options, or other securities, convertible or exchangeable for Equity Interests of any Borrower and (e) other Distributions so long as the Payment Conditions are satisfied with respect to each such Distribution made under this clause (e).

Permitted Lien: as defined in **Section 10.2.2**.

Permitted Purchase Money Debt: Purchase Money Debt of Borrowers and Subsidiaries that is unsecured or secured only by a Purchase Money Lien, as long as the aggregate amount does not exceed \$5,000,000 at any time.

Person: any individual, corporation, limited liability company, partnership, joint venture, association, trust, unincorporated organization, Governmental Authority or other entity.

Plan: any Benefit Plan maintained for employees of an Obligor or ERISA Affiliate, or to which an Obligor or ERISA Affiliate is required to contribute on behalf of its employees.

Platform: as defined in **Section 14.3.3**.

Prime Rate: the rate of interest announced by Bank of America from time to time as its prime rate. Such rate is set by Bank of America on the basis of various factors, including its costs and desired return, general economic conditions and other factors, and is used as a reference point for pricing some loans, which may be priced at, above or below such rate. Any change in such rate publicly announced by Bank of America shall take effect at the opening of business on the day specified in the announcement.

Pro Rata: with respect to any Lender, a percentage (rounded to the ninth decimal place) determined (a) by dividing the amount of such Lender's Commitment by the aggregate outstanding Commitments; or (b) following termination of the Commitments, by dividing the amount of such Lender's Loans and LC Obligations by the aggregate outstanding Loans and LC Obligations or, if all Loans and LC Obligations have been paid in full and/or Cash Collateralized, by dividing such Lender's and its Affiliates' remaining Obligations by the aggregate remaining Obligations.

Properly Contested: with respect to any obligation of an Obligor, (a) the obligation is subject to a bona fide dispute regarding amount or the Obligor's liability to pay; (b) the obligation is being properly contested in good faith by appropriate proceedings promptly instituted and diligently pursued; (c) appropriate reserves have been established in accordance with GAAP; and (d) no Lien is imposed on the Eligible Accounts or Eligible Inventory then included in the Borrowing Base, unless bonded and stayed to the satisfaction of Agent.

Property: any interest in any kind of property or asset, whether real, personal or mixed, or tangible or intangible.

Protective Advances: as defined in **Section 2.1.6**.

PTE: a prohibited transaction class exemption issued by the U.S. Department of Labor, as amended from time to time.

Purchase Money Debt: (a) Debt (other than the Obligations) for payment of any of the purchase price of fixed or capital assets; (b) Debt (other than the Obligations) incurred within 90 days before or after acquisition of any fixed or capital assets, for the purpose of financing any of the purchase price thereof; and (c) any renewals, extensions or refinancings (but not increases except for accrued interest, fees and expenses) thereof.

Purchase Money Lien: a Lien that secures Purchase Money Debt, encumbering only the fixed or capital assets acquired with such Debt and constituting a Capital Lease or a purchase money security interest under the UCC.

Qualified ECP: an Obligor with total assets exceeding \$10,000,000, or that constitutes an “eligible contract participant” under the Commodity Exchange Act and can cause another Person to qualify as an “eligible contract participant” under Section 1a(18)(A)(v)(II) of such act.

Real Estate: all right, title and interest (whether as owner, lessor or lessee) in any real Property or any buildings, structures, parking areas or other improvements thereon.

Recipient: Agent, Issuing Bank, any Lender or any other recipient of a payment to be made by an Obligor under a Loan Document or on account of an Obligation.

Refinancing Conditions: such Debt, when compared to the Debt being extended, renewed or refinanced, (a) does not have a greater principal amount (except for the amount of any accrued interest and fees and any fees and expenses incurred in such refinancing), earlier final maturity or shorter weighted average life, (b) is subordinated to the Obligations to at least the same extent (if applicable), (c) has representations, covenants, defaults and other terms, taken as a whole, not materially less favorable to Borrowers, and (d) has no additional obligor, guarantor, Lien, or other recourse to any Person or Property (provided that any Obligor may guaranty and secure the Debt of any other Obligor).

Refinancing Debt: Borrowed Money that is the result of an extension, renewal or refinancing of Debt permitted under **Section 10.2.1(b), (d) or (f)**.

Reimbursement Date: as defined in **Section 2.2.2**.

Rent and Charges Reserve: the aggregate of (a) all past due rent and other amounts owing by an Obligor to any landlord, warehouseman, processor, repairman, mechanic, shipper, freight forwarder, broker or other Person who possesses any Eligible Inventory or any books and records related thereto or to any Eligible Accounts, in each case, that are included in the Borrowing Base at such time; and (b) a reserve at least equal to three months' rent and other charges payable to any such Person, unless it has executed a Lien Waiver.

Report: as defined in **Section 12.2.3**.

Reportable Event: any event set forth in Section 4043(c) of ERISA, other than an event for which the 30 day notice period has been waived.

Required Lenders: Secured Parties holding more than 50% of (a) the aggregate outstanding Commitments; or (b) after termination of the Commitments, the aggregate outstanding Loans and LC Obligations; provided, that Commitments, Loans and other Obligations held by a Defaulting Lender and its Affiliates shall be disregarded in making such calculation, but any related Fronting Exposure shall be deemed held as a Loan or LC Obligation by the Lender (including in its capacity as Issuing Bank) that funded the applicable Loan or issued the applicable Letter of Credit.

Restricted Investment: any Investment by a Borrower or Subsidiary, other than (a) Investments in Subsidiaries to the extent existing on the Closing Date; (b) Investments made after the Closing Date by any Obligor in any other Obligor; (c) Investments made after the Closing Date by any Subsidiary that is not an Obligor in any other Subsidiary that is not an Obligor; (d) Investments made after the Closing Date by any Subsidiary that is not an Obligor in any Obligor; (e) Investments made after the Closing Date by any Obligor in any Subsidiary that is not an Obligor in an aggregate amount not to exceed \$1,000,000 at any one time outstanding; (f) deposits made in the Ordinary Course of Business to secure the performance of leases, the payment of rent or other obligations permitted hereunder; (g) Bank Products permitted hereunder; (h) Investments in the form of travel advances and relocation and other loans and advances to employees for reasonable and customary business-related travel, entertainment, relocation, and analogous ordinary business purposes, and payroll advances in connection with changes in payroll systems and other advances of payroll payments to employees, in each case in the Ordinary Course of Business; (i) Investments consisting of loans to employees to finance the purchase of Equity Interests of the Borrowers pursuant to employee stock purchase plans or agreements approved by the Borrowers' board of directors; (j) Investments consisting of extensions of credit to the customers of the Borrowers or of any of their Subsidiaries in the nature of accounts receivable, prepaid royalties, or notes receivable, arising from the grant of trade credit or licensing activities of such Borrower or such Subsidiary, in each case in the Ordinary Course of Business; (k) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of litigation, delinquent obligations of, and other disputes with, customers, suppliers or other Persons arising in the Ordinary Course of Business (including Investments received upon foreclosure of any secured customer leases or licenses); (l) Investments held by a Person acquired in a Permitted Acquisition; provided that such Investments are held by such Person or are made pursuant to a binding commitment of such Person in effect as of the date of such Permitted Acquisition and not acquired or entered into in contemplation of such Permitted Acquisition; (m) cash and Cash Equivalents; (n) Permitted Acquisitions; (o) Investments received in connection with any Permitted Asset Disposition; (p) additional Investments in an aggregate amount not to exceed \$1,000,000 at any one time outstanding; (q) Investments constituting cash collateral for the SVB Letter of Credit and the SVB Bank Products; and (r) other Investments so long as the Payment Conditions are satisfied with respect to each such other Investment.

Restrictive Agreement: an agreement (other than a Loan Document) that conditions or restricts the right of any Borrower or other Obligor to incur or repay the Obligations, to grant Liens on any assets to secure the Obligations, to declare or make Distributions to a Borrower, or to repay any intercompany Debt to a Borrower.

Revolver Usage: (a) the aggregate amount of outstanding Loans; plus (b) the aggregate Stated Amount of outstanding Letters of Credit, except to the extent Cash Collateralized by Borrowers.

S&P: Standard & Poor's Financial Services LLC, a subsidiary of The McGraw-Hill Companies, Inc., or any successor.

Sanction: any sanction administered or enforced by the U.S. government (including OFAC), United Nations Security Council, European Union, U.K. government or other applicable sanctions authority.



Scheduled Unavailability Date: as defined in **Section 1.5**.

Secured Bank Product Obligations: Debt, obligations and other liabilities with respect to Bank Products owing by a Borrower or Affiliate of a Borrower to a Secured Bank Product Provider; provided, that Secured Bank Product Obligations of an Obligor shall not include its Excluded Swap Obligations.

Secured Bank Product Provider: (a) Bank of America or any of its Affiliates; and (b) any other Lender or Affiliate of a Lender that is providing a Bank Product, provided such provider delivers written notice to Agent, in form and substance reasonably satisfactory to Agent, within 10 days following the later of the Closing Date or creation of the Bank Product, (i) describing the Bank Product and setting forth the maximum amount to be secured by the Collateral and the methodology to be used in calculating such amount, and (ii) agreeing to be bound by **Section 12.14**.

Secured Parties: Agent, Issuing Bank, Lenders and Secured Bank Product Providers.

Security Documents: the Deposit Account Control Agreements, and all other documents, instruments and agreements now or hereafter securing (or given with the intent to secure) any Obligations.

Senior Officer: the chairman of the board, president, vice president, chief executive officer, chief financial officer, treasurer or controller of the applicable Obligor.

Settlement Report: a report summarizing Loans and participations in LC Obligations outstanding as of a given settlement date, allocated to Lenders on a Pro Rata basis in accordance with their Commitments.

Solvent: as to any Person, such Person (a) owns Property whose fair salable value is greater than the amount required to pay all of its debts (including contingent, subordinated, unmatured and unliquidated liabilities); (b) owns Property whose present fair salable value (as defined below) is greater than the probable total liabilities (including contingent, subordinated, unmatured and unliquidated liabilities) of such Person as they become absolute and matured; (c) is able to pay all of its debts as they mature; (d) has capital that is not unreasonably small for its business and is sufficient to carry on its business and transactions and all business and transactions in which it is about to engage; (e) is not “insolvent” within the meaning of Section 101(32) of the Bankruptcy Code; and (f) has not incurred (by way of assumption or otherwise) any obligations or liabilities (contingent or otherwise) under any Loan Documents, or made any conveyance in connection therewith, with actual intent to hinder, delay or defraud either present or future creditors of such Person or any of its Affiliates. “Fair salable value” means the amount that could be obtained for assets within a reasonable time, either through collection or through sale under ordinary selling conditions by a capable and diligent seller to an interested buyer who is willing (but under no compulsion) to purchase.

Specified Obligor: an Obligor that is not then an “eligible contract participant” under the Commodity Exchange Act (determined prior to giving effect to **Section 5.10**).

Spot Rate: the exchange rate, as determined by Agent, that is applicable to conversion of one currency into another currency, which is (a) the exchange rate reported by Bloomberg (or other commercially available source designated by Agent) as of the end of the preceding business day in the financial market for the first currency; or (b) if such report is unavailable for any reason, the spot rate for the purchase of the first currency with the second currency as in effect during the preceding business day in Agent’s principal foreign exchange trading office for the first currency.

Stated Amount: the outstanding amount of a Letter of Credit, including any automatic increase or tolerance (whether or not then in effect) provided by the Letter of Credit or related LC Documents.

Subordinated Debt: Debt incurred by a Borrower that is expressly subordinate and junior in right of payment to Full Payment of all Obligations, and is on terms (including maturity, interest, fees, repayment, covenants and subordination) reasonably satisfactory to Agent.

Subsidiary: any entity at least 50% of whose voting securities or Equity Interests is owned by a Borrower or combination of Borrowers (including indirect ownership through other entities in which a Borrower directly or indirectly owns 50% of the voting securities or Equity Interests).

SVB Bank Products: SVB Credit Card number [\*] (and any replacement thereof that does not increase the amount thereof).

SVB Letter of Credit: letter of credit # [\*] in amount of \$627,813.06 issued by Silicon Valley Bank for the account of Borrower Agent (and any replacement thereof that does not increase the amount thereof).

Swap: as defined in Section 1a(47) of the Commodity Exchange Act.

Swap Obligations: obligations under an agreement relating to a Swap.

Swap Termination Value: means, in respect of any one or more Swaps, after taking into account the effect of any legally enforceable netting agreement relating to such Swaps: (a) for any date on or after the date such Swaps have been closed out and termination value(s) determined in accordance therewith, such termination value(s); and (b) for any date prior to the date referenced in clause (a), the amount(s) determined as the mark-to-market value(s) for such Swaps, as determined based upon one or more mid-market or other readily available quotations provided by any recognized dealer in such Swaps (which may include a Lender or any Affiliate of a Lender).

Swingline Loan: any Borrowing of Base Rate Loans funded with Agent's funds, until such Borrowing is settled among Lenders or repaid by Borrowers.

Taxes: all present or future taxes, levies, imposts, duties, deductions, withholdings (including backup withholding), assessments, fees or other charges imposed by any Governmental Authority, including any interest, additions to tax or penalties applicable thereto.

Termination Date: the earlier of (a) January 27, 2023, (b) the date which is ninety-one (91) days prior to the maturity of any Material Debt, or (c) such earlier date on which the Commitments terminate hereunder.

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\* Information in this exhibit identified by [\*] contain confidential information that has been excluded pursuant to Item 601(b)(10)(iv) of Regulation S-K because it (i) is not material and (ii) would likely cause competitive harm to Calix if publicly disclosed.

Transferee: any actual or potential Eligible Assignee, Participant or other Person acquiring an interest in any Obligations.

Trigger Period: the period (a) commencing on any day that (i) an Event of Default occurs, (ii) subject to **Section 2.1.7**, Availability is less than \$5,000,000 for 5 consecutive days or (iii) subject to **Section 2.1.7**, Availability is less than \$2,500,000 at any time; and (b) continuing until, during each of the preceding 90 consecutive days, no Event of Default has existed and, subject to **Section 2.1.7**, Availability has been more than \$5,000,000.

UCC: the Uniform Commercial Code as in effect in the State of New York or, when the laws of any other jurisdiction govern the perfection or enforcement of any Lien, the Uniform Commercial Code of such jurisdiction.

Unused Line Fee Rate: a per annum rate equal to (a) 0.375%, if average daily Revolver Usage was less than 50% of the Commitments during the preceding calendar month, or (b) 0.25%, if average daily Revolver Usage was greater than or equal to 50% of the Commitments during such month.

Upstream Payment: a Distribution by a Subsidiary of a Borrower to a Borrower or any Guarantor (and, if applicable to other holders of its outstanding Equity Interests on a pro rata basis).

U.S. Person: “United States Person” as defined in Section 7701(a)(30) of the Code.

U.S. Tax Compliance Certificate: as defined in **Section 5.9.2(b)(iii)**.

Value: (a) for Inventory, its value determined on the basis of the lower of cost or market, calculated on a first-in, first out basis, and excluding any portion of cost attributable to intercompany profit among Borrowers and their Affiliates; and (b) for an Account, its face amount, net of any returns, rebates, discounts (calculated on the shortest terms), credits, allowances or Taxes (including sales, excise or other taxes) that have been or could be claimed by the Account Debtor or any other Person.

Write-Down and Conversion Powers: the write-down and conversion powers of the applicable EEA Resolution Authority from time to time under the Bail-In Legislation for the applicable EEA Member Country, which powers are described in the EU Bail-In Legislation Schedule.

**1.2 Accounting Terms.** Under the Loan Documents (except as otherwise specified therein), all accounting terms shall be interpreted, all accounting determinations shall be made, and all financial statements shall be prepared, in accordance with GAAP applied on a basis consistent with the most recent audited financial statements of Borrowers delivered to Agent before the Closing Date and using the same inventory valuation method and lease accounting treatment as used in such financial statements. Notwithstanding the foregoing, (x) for purposes of determining compliance with any covenant (including the computation of any financial covenant) contained herein, the effects of FASB ASC 825 and FASB ASC 470-20 on financial liabilities shall be disregarded and Indebtedness of the Borrowers and their Subsidiaries subject thereto shall be deemed to be carried at 100% of the outstanding principal amount thereof and (y) to the extent that any change in GAAP after the Closing Date results in leases which are, or would have been, classified as operating leases under GAAP as it exists on the Closing Date being classified as Capital Leases under GAAP as so revised, such change in classification of leases from operating leases to Capital Leases shall be ignored for purposes of determining compliance with any covenant (including the computation of any financial covenant) under this Agreement and any of the other Loan Documents (provided, any financial statements required to be delivered hereunder shall be required to be delivered in conformity with

GAAP, applied on a consistent basis, as in effect from time to time together with a detailed reconciliation between calculations before and after giving effect to such change in GAAP).

**1.3 Uniform Commercial Code.** As used herein, the following terms are defined in accordance with the UCC in effect in the State of New York on the Closing Date: “Account,” “Account Debtor,” “Chattel Paper,” “Commercial Tort Claim,” “Deposit Account,” “Document,” “Equipment,” “General Intangibles,” “Goods,” “Instrument,” “Investment Property,” “Letter-of-Credit Right” and “Supporting Obligation.”

**1.4 Certain Matters of Construction.** The terms “herein,” “hereof,” “hereunder” and other words of similar import refer to this Agreement as a whole and not to any particular section, paragraph or subdivision. Any pronoun used shall be deemed to cover all genders. In the computation of periods of time from a specified date to a later specified date, “from” means “from and including,” “to” and “until” each mean “to but excluding,” and “through” means “to and including.” The terms “including” and “include” shall mean “including, without limitation” and, for purposes of each Loan Document, the parties agree that the rule of ejusdem generis shall not be applicable to limit any provision. The word “or” shall have the inclusive meaning of “and/or”. Section titles appear as a matter of convenience only and shall not affect the interpretation of any Loan Document. Unless otherwise indicated, reference to a time of day shall be to the prevailing time in the Pacific time zone. All references in the Loan Documents to any (a) laws include all related regulations, interpretations, supplements, amendments and successor provisions; (b) document, instrument or agreement include any amendments, waivers and other modifications, extensions or renewals (to the extent permitted by the Loan Documents); (c) section mean, unless the context otherwise requires, a section of this Agreement; (d) exhibits or schedules mean, unless the context otherwise requires, exhibits and schedules attached hereto, which are hereby incorporated by reference; (e) Person include successors and assigns; (f) time of day mean time of day at Agent’s notice address under **Section 14.3.1**; or (g) discretion of Agent, Issuing Bank or any Lender mean (except as otherwise specified herein) the reasonable discretion of such Person exercised at any time. All determinations (including calculations of Borrowing Base and financial covenants) made from time to time under the Loan Documents shall be made in light of the circumstances existing at such time. Borrowing Base calculations shall be consistent with historical methods of calculation. No provision of any Loan Documents shall be construed against any party by reason of such party having, or being deemed to have, drafted the provision. Reference to an Obligor’s “knowledge” or similar concept means actual knowledge of a Senior Officer.

**1.5 LIBOR Amendment.** Notwithstanding anything to the contrary in this Agreement or any other Loan Documents, if Agent determines (which determination shall be conclusive absent manifest error), or Borrower Agent or Required Lenders notify Agent (with, in the case of the Required Lenders, a copy to Borrower Agent) that Borrowers or Required Lenders (as applicable) have determined, that:

- (a) adequate and reasonable means do not exist for ascertaining LIBOR for any applicable interest period, because the LIBOR quote on the applicable screen page (or other source) used by Agent to determine LIBOR (“LIBOR Screen Rate”) is not available or published on a current basis and such circumstances are unlikely to be temporary; or
- (b) the administrator of the LIBOR Screen Rate or a Governmental Authority having jurisdiction over Agent has made a public statement identifying a specific date (“Scheduled Unavailability Date”) after which LIBOR or the LIBOR Screen Rate will no longer be available or used for determining the interest rate of loans; or
- (c) syndicated loans currently being executed, or that include language similar to that contained in this Section, are being executed or amended (as applicable) to incorporate or adopt a new benchmark interest rate to replace LIBOR;

then, reasonably promptly after such determination or receipt of notice by Agent, Agent and Borrower Agent may amend this Agreement to replace LIBOR with an alternate benchmark rate (including any mathematical or other adjustments to the benchmark (if any) incorporated therein) ("LIBOR Successor Rate"), together with any proposed LIBOR Successor Rate Conforming Changes and the amendment shall be effective at 5:00 p.m. on the fifth Business Day after Agent posts the amendment to all Lenders and Borrowers unless, prior to such time, Required Lenders notify Agent that they do not accept the amendment. Such amendment shall provide that the LIBOR Successor Rate cannot be less than zero for the purposes of this Agreement.

If no LIBOR Successor Rate has been determined and the circumstances under clause (a) above exist or the Scheduled Unavailability Date has occurred, Agent will promptly notify Borrowers and Lenders. Thereafter, (i) the obligation of Lenders to make or maintain LIBOR Loans shall be suspended (to the extent of the affected LIBOR Loans or Interest Periods), and (ii) the LIBOR component shall no longer be used in determining Base Rate. Upon receipt of such notice, Borrower Agent may revoke any pending request for funding, conversion or continuation of a LIBOR Loan (to the extent of the affected LIBOR Loans or Interest Periods) or, failing that, will be deemed to have requested a Base Rate Loan.

## **1.6 Currency Equivalents.**

1.6.1. Calculations. All references in the Loan Documents to Loans, Letters of Credit, Obligations, Borrowing Base components and other amounts shall be denominated in Dollars, unless expressly provided otherwise. The Dollar equivalent of any amounts denominated or reported under a Loan Document in a currency other than Dollars shall be determined by Agent on a daily basis, based on the current Spot Rate. Borrowers shall report Value and other Borrowing Base components to Agent in the currency shown in Borrowers' financial records (for all other assets), and unless expressly provided otherwise, shall deliver financial statements and calculate financial covenants in Dollars. Notwithstanding anything herein to the contrary, if an Obligation is funded or expressly denominated in a currency other than Dollars, Borrowers shall repay such Obligation in such other currency.

1.6.2. Judgments. If, in connection with obtaining judgment in any court, it is necessary to convert a sum from the currency provided under a Loan Document ("Agreement Currency") into another currency, the Spot Rate shall be used as the rate of exchange. Notwithstanding any judgment in a currency ("Judgment Currency") other than the Agreement Currency, a Borrower shall discharge its obligation in respect of the sum due under the Loan Document only if, on the Business Day following Agent's receipt of the payment in the Judgment Currency, Agent can use the amount paid to purchase the sum originally due in the Agreement Currency. If the purchased amount is less than the sum originally due, Borrowers agree, as a separate obligation and notwithstanding any such judgment, to indemnify Agent and Lenders against such loss. If the purchased amount is greater than the sum originally due, Agent shall return the excess amount to the applicable Borrower (or to the Person legally entitled thereto).

## **SECTION 2. CREDIT FACILITIES**

### **2.1 Loan Commitments**

2.1.1. Commitments. Each Lender agrees, severally on a Pro Rata basis up to its Commitment, on the terms set forth herein, to make Loans to Borrowers from time to time through the Termination Date. The Loans may be repaid and reborrowed as provided herein. In no event shall Lenders have any obligation to honor a request for a Loan if Revolver Usage at such time plus the requested Loan would exceed the Borrowing Base.

2.1.2. Notes. Loans and interest accruing thereon shall be evidenced by the records of Agent and the applicable Lender. At the request of a Lender, Borrowers shall deliver promissory note(s) to such Lender, evidencing its Loans.

2.1.3. Use of Proceeds. The proceeds of Loans shall be used by Borrowers solely (a) to satisfy existing Debt; (b) to pay fees and transaction expenses associated with the closing of this credit facility; (c) to pay Obligations in accordance with this Agreement; and (d) for lawful corporate purposes of Borrowers and their Subsidiaries, including Investments, Distributions, working capital and other general corporate purposes. Borrowers shall not, directly or knowingly indirectly, use any Letter of Credit or Loan proceeds, nor use, lend, contribute or otherwise make available any Letter of Credit or Loan proceeds to any Subsidiary, (i) to fund any activities of or business with any Person, or in any Designated Jurisdiction, that, at the time of issuance of the Letter of Credit or funding of the Loan, is the target of any Sanction; or (ii) in any manner that would result in a violation in any material respect of a Sanction applicable to any party hereto.

2.1.4. Voluntary Reduction or Termination. Upon at least 10 Business Days' prior written notice to Agent at any time, Borrowers may terminate or reduce the Commitments. Each reduction shall be in an increment of \$1,000,000, and shall be specified in the notice. Any notice of termination or reduction by Borrowers shall be irrevocable; provided that any such notice may be conditioned upon the occurrence of a refinancing or receipt of proceeds of Debt or Equity Interests.

2.1.5. Overadvances. Any Overadvance shall be repaid by Borrowers upon demand by Agent, and shall constitute an Obligation secured by the Collateral, entitled to all benefits of the Loan Documents. Agent may in its Permitted Discretion require Lenders to fund requests from the Borrowers or from the Agent for Base Rate Loans that cause or constitute an Overadvance and to forbear from requiring Borrowers to cure an Overadvance, as long as the total Overadvance does not exceed 10% of the Borrowing Base and does not continue for more than 30 consecutive days without the consent of Required Lenders. In no event shall Loans be required that would cause Revolver Usage to exceed the aggregate Commitments. No funding or sufferance of an Overadvance shall constitute a waiver by Agent or Lenders of the Event of Default caused thereby.

2.1.6. Protective Advances. Agent shall be authorized, in its Permitted Discretion, at any time that any condition in **Section 6** is not satisfied, to make Base Rate Loans ("Protective Advances") (a) up to an aggregate amount of \$3,500,000 outstanding at any time, if Agent deems such Loans necessary or desirable to preserve or protect Collateral, or to enhance the collectability or repayment of Obligations, as long as such Loans do not cause Revolver Usage to exceed the aggregate Commitments; or (b) to pay any other amounts chargeable to Obligors under any Loan Documents, including interest, costs, fees and expenses. Lenders shall participate on a Pro Rata basis in Protective Advances outstanding from time to time. Required Lenders may at any time revoke Agent's authority to make further Protective Advances under clause (a) by written notice to Agent. Absent such revocation, Agent's determination that funding of a Protective Advance is appropriate shall be conclusive. No funding of a Protective Advance shall constitute a waiver by Agent or Lenders of any Event of Default relating thereto.

2.1.7. Increase in Commitments. Borrowers may request an increase in Commitments from time to time upon not less than 15 Business Days' (or such shorter period as may be acceptable to Agent) notice to Agent, as long as (a) the requested increase is in a minimum amount of \$5,000,000 and is offered on the same terms as existing Commitments, except for a closing fee specified by Borrowers and (b) total increases under this Section do not exceed \$25,000,000 and no more than 5 increases are made. Agent shall promptly notify Lenders of the requested increase. Any Lender not responding within 10 days after such notification of its agreement to provide any portion of such increase shall be deemed to have declined to provide such increase. To the extent the existing Lenders don't provide the requested increase, additional Commitments may be provided by any Eligible Assignees; provided that no Lender shall be obligated to provide any portion of the requested increased Commitment. Total Commitments shall be increased by the requested amount (or such lesser amount committed by Lenders and Eligible Assignees) on a date agreed upon by Agent and Borrower Agent, provided the conditions set forth in **Section 6.2** are

satisfied at such time. Agent, Borrowers, and the new and existing Lenders shall execute and deliver such documents and agreements as Agent reasonably deems appropriate to evidence the increase in and allocations of Commitments. On the effective date of an increase, the Revolver Usage and other exposures under the Commitments shall be reallocated among Lenders, and settled by Agent as necessary, in accordance with Lenders' adjusted shares of Commitments. Borrowers agree that as a condition to the effectiveness of any increase in Commitments, Borrowers, Agent and Lenders shall enter into such amendment as reasonably requested by Agent to amend the definitions of Trigger Period, Financial Covenant Trigger Period and Payment Conditions and any other provision in this Agreement reflecting an Availability threshold to increase such Availability threshold proportionally to take into account an increased Commitment.

## **2.2 Letter of Credit Facility**

2.2.1. Issuance of Letters of Credit. Issuing Bank shall issue Letters of Credit for the account of any Borrower or its Subsidiaries from time to time until the Termination Date, on the terms set forth herein, including the following:

(a) Each Borrower acknowledges that Issuing Bank's issuance of any Letter of Credit is conditioned upon Issuing Bank's receipt of a LC Application with respect to the requested Letter of Credit, as well as such other instruments and agreements as Issuing Bank may customarily require for issuance of a letter of credit of similar type and amount. Issuing Bank shall have no obligation to issue any Letter of Credit unless (i) Issuing Bank receives a LC Request and LC Application at least three Business Days (or such shorter period as may be agreed by Issuing Bank) prior to the requested date of issuance; (ii) each LC Condition is satisfied on the requested date of issuance; and (iii) if a Defaulting Lender exists, such Lender or Borrowers have entered into arrangements satisfactory to Agent and Issuing Bank to eliminate any Fronting Exposure associated with such Lender. If, in sufficient time to act, Issuing Bank receives written notice from Agent or Required Lenders that a LC Condition has not been satisfied, Issuing Bank shall not issue the requested Letter of Credit. Prior to receipt of any such notice, Issuing Bank shall not be deemed to have knowledge of any failure of LC Conditions.

(b) Letters of Credit may be requested by a Borrower to support obligations constituting lawful corporate purposes of the Borrowers and their Subsidiaries, including Investments, Distributions, working capital and other general corporate purposes. Increase, renewal or extension of a Letter of Credit shall be treated as issuance of a new Letter of Credit, except that Issuing Bank may require a new LC Application in its discretion.

(c) Borrowers assume all risks of any beneficiary's acts, omissions or misuses of a Letter of Credit. None of Agent, Issuing Bank or any Lender shall be responsible for the existence, character, quality, quantity, condition, packing, value or delivery of any goods purported to be represented by any Documents; any differences or variation in the character, quality, quantity, condition, packing, value or delivery of any goods from that expressed in any Documents; the form, validity, sufficiency, accuracy, genuineness or legal effect of any Documents or of any endorsements thereon; the time, place, manner or order in which shipment of goods is made; partial, incomplete or failed shipment of any goods referred to in a Letter of Credit or Documents; any deviation from instructions, delay, default or fraud by any shipper or other Person in connection with any goods, shipment or delivery; any breach of contract between a shipper or vendor and a Borrower; errors, omissions, interruptions or delays in transmission or delivery of any messages, by mail, cable, telegraph, telex, telecopy, e-mail, telephone or otherwise; errors in interpretation of technical terms; the misapplication by a beneficiary of a Letter of Credit or proceeds thereof; or any consequences arising from causes beyond the control of Issuing Bank, Agent or any Lender, including any act or omission of a Governmental Authority.

(d) In connection with its administration of and enforcement of rights or remedies under any Letters of Credit or LC Documents, Issuing Bank shall be entitled to act, and shall be fully protected in

acting, upon any certification, documentation or communication in whatever form believed by Issuing Bank, in good faith, to be genuine and correct and to have been signed, sent or made by a proper Person. Issuing Bank may use legal counsel, accountants and other experts to advise it concerning its obligations, rights and remedies, and shall be entitled to act (and shall be fully protected in any action taken in good faith reliance) upon any advice given by such experts. Issuing Bank may employ agents and attorneys-in-fact in connection with any matter relating to Letters of Credit or LC Documents, and shall not be liable for the negligence or misconduct of agents and attorneys-in-fact selected with reasonable care.

2.2.2. Reimbursement; Participations.

(a) If Issuing Bank honors any request for payment under a Letter of Credit, Borrowers shall pay to Issuing Bank, on the same Business Day (the "Reimbursement Date"), the amount paid by Issuing Bank under such Letter of Credit, together with interest at the interest rate for Base Rate Loans from the Reimbursement Date until payment by Borrowers. The obligation of Borrowers to reimburse Issuing Bank for any payment made under a Letter of Credit shall be absolute, unconditional, irrevocable, and joint and several, and shall be paid without regard to any lack of validity or enforceability of any Letter of Credit or the existence of any claim, setoff, defense or other right that Borrowers may have at any time against the beneficiary. Whether or not Borrower Agent submits a Notice of Borrowing, unless Borrower Agent notifies Agent that such payment will be made through other means, Borrowers shall be deemed to have requested a Borrowing of Base Rate Loans in an amount necessary to pay all amounts due Issuing Bank on any Reimbursement Date and each Lender shall fund its Pro Rata share of such Borrowing whether or not the Commitments have terminated, an Overadvance exists or is created thereby, or the conditions in **Section 6** are satisfied.

(b) Each Lender hereby irrevocably and unconditionally purchases from Issuing Bank, without recourse or warranty, an undivided Pro Rata participation in all LC Obligations outstanding from time to time. Issuing Bank is issuing Letters of Credit in reliance upon this participation. If Borrowers do not make a payment to Issuing Bank when due hereunder, Agent shall promptly notify Lenders and each Lender shall within one Business Day after such notice pay to Agent, for the benefit of Issuing Bank, the Lender's Pro Rata share of such payment. Upon request by a Lender, Issuing Bank shall provide copies of Letters of Credit and LC Documents in its possession at such time.

(c) The obligation of each Lender to make payments to Agent for the account of Issuing Bank in connection with Issuing Bank's payment under a Letter of Credit shall be absolute, unconditional and irrevocable, not subject to any counterclaim, setoff, qualification or exception whatsoever, and shall be made in accordance with this Agreement under all circumstances, irrespective of any lack of validity or unenforceability of any Loan Documents; any draft, certificate or other document presented under a Letter of Credit having been determined to be forged, fraudulent, noncompliant, invalid or insufficient in any respect or any statement therein being untrue or inaccurate in any respect; any waiver by Issuing Bank of a requirement that exists for its protection (and not a Borrower's protection) or that does not materially prejudice a Borrower; any honor of an electronic demand for payment even if a draft is required; any payment of an item presented after a Letter of Credit's expiration date if authorized by the UCC or applicable customs or practices; or any setoff or defense that an Obligor may have with respect to any Obligations. Issuing Bank does not assume any responsibility for any failure or delay in performance or any breach by any Borrower or other Person of any obligations under any LC Documents. Issuing Bank does not make to Lenders any express or implied warranty, representation or guaranty with respect to any Letter of Credit, Collateral, LC Document or Obligor. Issuing Bank shall not be responsible to any Lender for any recitals, statements, information, representations or warranties contained in, or for the execution, validity, genuineness, effectiveness or enforceability of any LC Documents; the validity, genuineness, enforceability, collectability, value or sufficiency of any Collateral or the perfection of any Lien therein; or the assets, liabilities, financial condition, results of operations, business, creditworthiness or legal status of any Obligor.



(d) No Indemnitee shall be liable to any Obligor, Lender or other Person for any action taken or omitted to be taken in connection with any Letter of Credit or LC Document except as a result of such Indemnitee's bad faith, gross negligence or willful misconduct.

2.2.3. Cash Collateral. At Agent's or Issuing Bank's request, Borrowers shall Cash Collateralize (a) the Fronting Exposure of any Defaulting Lender; and (b) all outstanding Letters of Credit if an Event of Default exists, the Termination Date is scheduled to occur within 5 Business Days or the Termination Date occurs. If Borrowers fail to provide any Cash Collateral as required hereunder, Lenders may (and shall upon direction of Agent) advance, as Loans, the amount of Cash Collateral required (whether or not the Commitments have terminated, an Overadvance exists or the conditions in Section 6 are satisfied).

2.2.4. Resignation of Issuing Bank. Issuing Bank may resign at any time upon notice to Agent and Borrowers, and any resignation of Agent hereunder shall automatically constitute its concurrent resignation as Issuing Bank. From the effective date of its resignation, Issuing Bank shall have no obligation to issue, amend, renew, extend or otherwise modify any Letter of Credit, but shall otherwise have all rights and obligations of an Issuing Bank hereunder relating to any Letter of Credit issued by it prior to such date. A replacement Issuing Bank may be appointed by written agreement among Agent, Borrower Agent and the new Issuing Bank.

## SECTION 3. INTEREST, FEES AND CHARGES

### 3.1 Interest

#### 3.1.1. Rates and Payment of Interest.

(a) The Obligations shall bear interest (i) if a Base Rate Loan, at the Base Rate in effect from time to time, plus the Applicable Margin; (ii) if a LIBOR Loan, at LIBOR for the applicable Interest Period, plus the Applicable Margin; and (iii) if any other Obligation (including, to the extent permitted by law, interest not paid when due), at the Base Rate in effect from time to time, plus the Applicable Margin for Base Rate Loans.

(b) During an Insolvency Proceeding with respect to any Obligor, or during any other Event of Default if Agent or Required Lenders in their discretion so elect, Obligations shall bear interest at the Default Rate (whether before or after any judgment), payable **on demand**.

(c) Interest shall accrue from the date a Loan is advanced or Obligation is incurred or payable, until paid in full by Borrowers, and shall in no event be less than zero at any time. Interest accrued on the Loans shall be due and payable in arrears, (i) on the first day of each month; (ii) on any date of prepayment, with respect to the principal amount being prepaid; and (iii) on the Termination Date. Interest accrued on any other Obligations shall be due and payable as provided in the applicable agreements or, if no payment date is specified, **on demand**.

#### 3.1.2. Application of LIBOR to Outstanding Loans.

(a) Borrowers may elect to convert any portion of Base Rate Loans to, or to continue any LIBOR Loan at the end of its Interest Period as, a LIBOR Loan. During any Event of Default, Agent may (and shall at the direction of Required Lenders) declare that no Loan may be made, converted or continued as a LIBOR Loan.

(b) Borrower Agent shall give Agent a Notice of Conversion/Continuation no later than 11:00 a.m. at least two Business Days before the requested conversion or continuation date. Promptly after receiving any such notice, Agent shall notify each Lender thereof. Each Notice of Conversion/Continuation shall be irrevocable, and shall specify the amount of Loans to be converted or continued, the conversion or continuation date (which shall be a Business Day), and the duration of the Interest Period (which shall be

deemed to be 30 days if not specified). If, at expiration of an Interest Period for a LIBOR Loan, Borrowers have failed to deliver a Notice of Conversion/Continuation, the Loan shall convert into a Base Rate Loan. Agent does not warrant or accept responsibility for, nor shall it have any liability with respect to, administration, submission or any other matter related to any rate used in determining LIBOR.

3.1.3. Interest Periods. Borrowers shall select an interest period (“Interest Period”) of 30, 60 or 90 days to apply to each LIBOR Loan; provided, that (a) the Interest Period shall begin on the date the Loan is made or continued as, or converted into, a LIBOR Loan, and shall expire on the numerically corresponding day in the calendar month at its end; (b) if any Interest Period begins on a day for which there is no corresponding day in the calendar month at its end or if such corresponding day falls after the last Business Day of the ending month, then the Interest Period shall expire on such month’s last Business Day; and if any Interest Period would otherwise expire on a day that is not a Business Day, the period shall expire on the next Business Day; and (c) no Interest Period shall extend beyond the Termination Date.

3.1.4. Interest Rate Not Ascertainable. If, due to any circumstance affecting the London interbank market, Agent reasonably determines that adequate and fair means do not exist for ascertaining LIBOR on any applicable date or that any Interest Period is not available on the basis provided herein, then Agent shall immediately notify Borrowers of such determination. Until Agent notifies Borrowers that such circumstance no longer exists, the obligation of Lenders to make affected LIBOR Loans shall be suspended and no further Loans may be converted into or continued as such LIBOR Loans.

### **3.2 Fees**

3.2.1. Unused Line Fee. Borrowers shall pay to Agent, for the Pro Rata benefit of Lenders, a fee equal to the Unused Line Fee Rate times the amount by which the Commitments exceed the average daily Revolver Usage during any month. Such fee shall be payable in arrears, on the first day of each month and on the Termination Date.

3.2.2. LC Facility Fees. Borrowers shall pay (a) to Agent, for the Pro Rata benefit of Lenders, a fee equal to the Applicable Margin in effect for LIBOR Loans times the average daily Stated Amount of Letters of Credit, which fee shall be payable monthly in arrears, on the first day of each month; (b) to Agent, for its own account, a fronting fee equal to 0.125% per annum on the Stated Amount of each Letter of Credit, which fee shall be payable monthly in arrears, on the first day of each month; and (c) to Issuing Bank, for its own account, all customary charges associated with the issuance, amending, negotiating, payment, processing, transfer and administration of Letters of Credit, which charges shall be paid as and when incurred. During an Event of Default, the fee payable under clause (a) shall be increased by 2% per annum.

3.2.3. Fee Letters. Borrowers shall pay all fees set forth in any fee letter executed in connection with this Agreement.

**3.3 Computation of Interest, Fees, Yield Protection**. All interest, as well as fees and other charges calculated on a per annum basis, shall be computed for the actual days elapsed, based on a year of 360 days. Each determination by Agent of any interest, fees or interest rate hereunder shall be final, conclusive and binding for all purposes, absent manifest error. All fees shall be fully earned when due and shall not be subject to rebate, refund or proration. All fees payable under **Section 3.2** are compensation for services and are not, and shall not be deemed to be, interest or any other charge for the use, forbearance or detention of money. A certificate as to amounts payable by Borrowers under **Section 3.4, 3.6, 3.7, 3.9 or 5.8**, submitted to Borrower Agent by Agent or the affected Lender shall be final, conclusive and binding for all purposes, absent manifest error, and Borrowers shall pay such amounts to the appropriate party within 10 Business Days following receipt of the certificate.

**3.4 Reimbursement Obligations.** Borrowers shall reimburse Agent for all reasonable and documented legal (limited to reasonable and documented fees of one counsel for Agent and one local counsel for Agent in each relevant jurisdiction, and, in the case of a conflict of interest, one additional primary counsel and one additional local counsel in each relevant jurisdiction), accounting, appraisal, consulting, and other fees and expenses incurred by it in connection with (a) negotiation and preparation of any Loan Documents, including any modification thereof; (b) administration of and actions relating to any Collateral, Loan Documents and transactions contemplated thereby, including any actions taken to perfect or maintain priority of Agent's Liens on any Collateral, to maintain any insurance required hereunder or to verify Collateral; and (c) subject to the limits of **Section 10.1.1(b)**, any examination or appraisal with respect to any Obligor or Collateral by Agent's personnel or a third party. All such legal, accounting and consulting fees shall be charged to Borrowers by Agent's professionals at their full hourly rates, regardless of any alternative fee arrangements that Agent, any Lender or any of their Affiliates may have with such professionals that otherwise might apply to this or any other transaction. Borrowers acknowledge that counsel may provide Agent with a benefit (such as a discount, credit or accommodation for other matters) based on counsel's overall relationship with Agent, including fees paid hereunder. If, for any reason (including inaccurate reporting in any Borrower Materials), it is determined that a higher Applicable Margin should have applied to a period than was actually applied, then the proper margin shall be applied retroactively and Borrowers shall promptly pay to Agent, for the ratable benefit of Lenders, an amount equal to the difference between the amount of interest and fees that would have accrued using the proper margin and the amount actually paid. All amounts payable by Borrowers under this Section shall be due within 10 Business Days following receipt by Borrower Agent of a reasonably detailed invoice.

**3.5 Illegality.** If any Lender reasonably determines that any Change in Law has made it unlawful, or that any Governmental Authority has asserted that it is unlawful, for any Lender to perform any of its obligations hereunder, to make, maintain, issue, fund, participate in, or charge applicable interest or fees with respect to, any Loan or Letter of Credit, or to determine or charge interest based on LIBOR, or any Governmental Authority has imposed material restrictions on the authority of such Lender to purchase or sell, or to take deposits of, Dollars in the London interbank market, then, on notice thereof by such Lender to Agent, any obligation of such Lender to perform such obligations, to make, maintain, fund or participate in the Loan or Letter of Credit (or to charge interest or fees otherwise applicable thereto), or to continue or convert Loans as LIBOR Loans, shall be suspended until such Lender notifies Agent that the circumstances giving rise to such determination no longer exist. Upon delivery of such notice, Borrowers shall prepay the applicable Loan, Cash Collateralize the applicable LC Obligations or, if applicable, convert LIBOR Loan(s) of such Lender to Base Rate Loan(s), either on the last day of the Interest Period therefor, if such Lender may lawfully continue to maintain the LIBOR Loan to such day, or immediately, if such Lender cannot continue to maintain the LIBOR Loan. Upon any such prepayment or conversion, Borrowers shall also pay accrued interest on the amount so prepaid or converted.

**3.6 Inability to Determine Rates.** Unless and until a LIBOR Successor Rate is implemented in accordance with **Section 1.5**, Agent will promptly notify Borrower Agent and Lenders if, in connection with any Loan or request with respect to a Loan, (a) Agent reasonably determines that (i) Dollar deposits are not being offered to banks in the London interbank Eurodollar market for the applicable Loan amount or Interest Period, or (ii) adequate and reasonable means do not exist for determining LIBOR for the Loan or Interest Period (including with respect to calculation of the Base Rate); or (b) Agent or Required Lenders reasonably determine for any reason that LIBOR for the Interest Period does not adequately and fairly reflect the cost to Lenders of funding or maintaining the Loan. Thereafter, Lenders' obligations to make or maintain affected LIBOR Loans and utilization of the LIBOR component (if affected) in determining Base Rate shall be suspended until Agent reasonably determines (or is instructed by Required Lenders) to withdraw the notice. Upon receipt of such notice, Borrower Agent may revoke any pending request for funding, conversion or continuation of a LIBOR Loan or, failing that, will be deemed to have requested a Base Rate Loan, and

Agent may (or shall upon request by Required Lenders) immediately convert any affected LIBOR Loan to a Base Rate Loan.

### **3.7 Increased Costs; Capital Adequacy**

3.7.1. Increased Costs Generally. If any Change in Law shall:

(a) impose, modify or deem applicable any reserve, liquidity, special deposit, compulsory loan, insurance charge or similar requirement against assets of, deposits with or for the account of, or credit extended or participated in by, any Lender (except any reserve requirement reflected in calculating LIBOR) or Issuing Bank;

(b) subject any Recipient to Taxes (other than (i) Indemnified Taxes, (ii) Excluded Taxes described in clauses (b) through (d) of the definition of Excluded Taxes, and (iii) Connection Income Taxes) with respect to any Loan, Letter of Credit, Commitment or other obligations, or its deposits, reserves, other liabilities or capital attributable thereto; or

(c) impose on any Lender, Issuing Bank or interbank market any other condition, cost or expense (other than Taxes) affecting any Loan, Letter of Credit, participation in LC Obligations, Commitment or Loan Document;

and the result thereof shall be to increase the cost to a Lender of making or maintaining any Loan or its Commitment, or converting to or continuing any interest option for a Loan, or to increase the cost to a Lender or Issuing Bank of participating in, issuing or maintaining any Letter of Credit (or of maintaining its obligation to participate in or to issue any Letter of Credit), or to reduce the amount of any sum received or receivable by a Lender or Issuing Bank hereunder (whether of principal, interest or any other amount) then, upon request of such Lender or Issuing Bank, Borrowers will pay to it such additional amount(s) as will compensate it for the additional costs incurred or reduction suffered.

3.7.2. Capital Requirements. If a Lender or Issuing Bank determines that a Change in Law affecting it or its holding company, if any, regarding capital or liquidity requirements has or would have the effect of reducing the rate of return on such Lender's, Issuing Bank's or holding company's capital as a consequence of this Agreement, or such Lender's or Issuing Bank's Commitment, Loans, Letters of Credit or participations in LC Obligations or Loans, to a level below that which such Lender, Issuing Bank or holding company could have achieved but for such Change in Law (taking into consideration its policies with respect to capital adequacy), then from time to time Borrowers will pay to such Lender or Issuing Bank, as the case may be, such additional amounts as will compensate it or its holding company for the reduction suffered.

3.7.3. LIBOR Loan Reserves. If any Lender is required to maintain reserves with respect to liabilities or assets consisting of or including Eurocurrency funds or deposits, Borrowers shall pay additional interest to such Lender on each LIBOR Loan equal to the costs of such reserves allocated to the Loan by the Lender (as determined by it in good faith, which determination shall be conclusive). The additional interest shall be due and payable on each interest payment date for the Loan; provided, that if the Lender notifies Borrowers (with a copy to Agent) of the additional interest less than 10 Business Days prior to the interest payment date, then such interest shall be payable 10 Business Days after Borrowers' receipt of the notice.

3.7.4. Compensation. Failure or delay on the part of any Lender or Issuing Bank to demand compensation pursuant to this Section shall not constitute a waiver of its right to demand such compensation, but Borrowers shall not be required to compensate a Lender or Issuing Bank for any increased costs or reductions suffered more than nine months (plus any period of retroactivity of the Change in Law

giving rise to the demand) prior to the date that the Lender or Issuing Bank notifies Borrower Agent of the applicable Change in Law and of such Lender's or Issuing Bank's intention to claim compensation therefor.

**3.8 Mitigation.** If any Lender gives a notice under **Section 3.5** or requests compensation under **Section 3.7**, or if Borrowers are required to pay any Indemnified Taxes or additional amounts with respect to a Lender under **Section 5.8**, then at the request of Borrower Agent, such Lender shall use reasonable efforts to designate or assign its obligations hereunder to a different Lending Office, if, in the judgment of such Lender, such designation or assignment would eliminate the need for such notice or eliminate or reduce amounts payable or to be withheld in the future, would not subject the Lender to any unreimbursed cost or expense, and would not otherwise be disadvantageous in any material respect or unlawful. Borrowers shall pay all reasonable costs and expenses incurred by any Lender in connection with any such designation or assignment.

**3.9 Funding Losses.** If for any reason (a) any Borrowing, conversion or continuation of a LIBOR Loan does not occur on the date specified therefor in a Notice of Borrowing or Notice of Conversion/Continuation (whether or not withdrawn), (b) any repayment or conversion of a LIBOR Loan occurs on a day other than the end of its Interest Period, (c) Borrowers fail to repay a LIBOR Loan when required, or (d) a Lender (other than a Defaulting Lender) is required to assign a LIBOR Loan prior to the end of its Interest Period pursuant to **Section 13.4**, then Borrowers shall pay to Agent its customary administrative charge, and to each Lender all losses, expenses and fees arising from redeployment of funds or termination of match funding. For purposes of calculating such amounts, a Lender shall be deemed to have funded a LIBOR Loan by a matching deposit or other borrowing in the London interbank market for a comparable amount and period, whether or not the Loan was in fact so funded.

**3.10 Maximum Interest.** Notwithstanding anything to the contrary contained in any Loan Document, the interest paid or agreed to be paid under the Loan Documents shall not exceed the maximum rate of non-usurious interest permitted by Applicable Law ("maximum rate"). If Agent or any Lender shall receive interest in an amount that exceeds the maximum rate, the excess interest shall be applied to the principal of the Obligations or, if it exceeds such unpaid principal, refunded to Borrowers. In determining whether the interest contracted for, charged or received by Agent or a Lender exceeds the maximum rate, such Person may, to the extent permitted by Applicable Law, (a) characterize any payment that is not principal as an expense, fee or premium rather than interest; (b) exclude voluntary prepayments and the effects thereof; and (c) amortize, prorate, allocate and spread (in equal or unequal parts) the total amount of interest throughout the contemplated term of the Obligations hereunder.

## **SECTION 4. LOAN ADMINISTRATION**

### **4.1 Manner of Borrowing and Funding Loans**

#### **4.1.1. Notice of Borrowing.**

(a) To request Loans, Borrower Agent shall give Agent a Notice of Borrowing by 11:00 a.m. (i) on the requested funding date, in the case of Base Rate Loans, and (ii) at least two Business Days prior to the requested funding date, in the case of LIBOR Loans. Notices received by Agent after such time shall be deemed received on the next Business Day. Each Notice of Borrowing shall be irrevocable and shall specify (A) the Borrowing amount, (B) the requested funding date (which must be a Business Day), (C) whether the Borrowing is to be made as a Base Rate Loan or LIBOR Loan, and (D) in the case of a LIBOR Loan, the applicable Interest Period (which shall be deemed to be 30 days if not specified).

(b) Unless payment is otherwise made by Borrowers, the becoming due of any Obligation (whether principal, interest, fees or other charges, including Extraordinary Expenses, LC Obligations, Cash Collateral and Secured Bank Product Obligations) shall be deemed to be a request for a

Base Rate Loan on the due date in the amount due and the Loan proceeds shall be disbursed as direct payment of such Obligation. In addition, Agent may, at its option, charge such amount against (a) the Borrowers' primary operating account maintained with Agent or any of its Affiliates (as designated by Borrower Agent to Agent from time to time) and (b) if such primary operating account has insufficient funds to satisfy such charge or if Borrowers have failed to designate a primary operating account, from any operating account of the Borrowers maintained with Agent or any of its Affiliates, and in any case, Agent shall promptly notify Borrower Agent of any such charge.

(c) If a Borrower maintains a disbursement account with Agent or any of its Affiliates, then presentation for payment in the account of a Payment Item which there are insufficient funds to cover it shall be deemed to be a request for a Base Rate Loan on the presentation date, in the amount of the Payment Item. Proceeds of the Loan may be disbursed directly to the account.

4.1.2. Fundings by Lenders. Except for Swingline Loans, Agent shall endeavor to notify Lenders of each Notice of Borrowing (or deemed request for a Borrowing) by 1:00 p.m. on the proposed funding date for a Base Rate Loan or by 3:00 p.m. two Business Days before a proposed funding of a LIBOR Loan. Each Lender shall fund its Pro Rata share of a Borrowing in immediately available funds not later than 3:00 p.m. on the requested funding date, unless Agent's notice is received after the times provided above, in which case Lender shall fund by 11:00 a.m. on the next Business Day. Subject to its receipt of such amounts from Lenders, Agent shall disburse the Borrowing proceeds in a manner directed by Borrower Agent and acceptable to Agent. Unless Agent receives (in sufficient time to act) written notice from a Lender that it will not fund its share of a Borrowing, Agent may assume that such Lender has deposited or promptly will deposit its share with Agent, and Agent may disburse a corresponding amount to Borrowers. If a Lender's share of a Borrowing or of a settlement under **Section 4.1.3(b)** is not received by Agent, then Borrowers agree to repay to Agent **on demand** the amount of such share, together with interest thereon from the date disbursed until repaid, at the rate applicable to the Borrowing. Agent, a Lender or Issuing Bank may fulfill its obligations under Loan Documents through one or more Lending Offices, and this shall not affect any obligation of Obligors under the Loan Documents or with respect to any Obligations.

4.1.3. Swingline Loans; Settlement.

(a) To fulfill any request for a Base Rate Loan hereunder, Agent may in its discretion advance Swingline Loans to Borrowers, up to an aggregate outstanding amount of \$3,500,000. Swingline Loans shall constitute Loans for all purposes, except that payments thereon shall be made to Agent for its own account until settled with or funded by Lenders hereunder.

(b) Settlement of Loans, including Swingline Loans, among Lenders and Agent shall take place on a date determined from time to time by Agent (but at least weekly, unless the settlement amount is de minimis), on a Pro Rata basis in accordance with the Settlement Report delivered by Agent to Lenders. Between settlement dates, Agent may in its discretion apply payments on Loans to Swingline Loans, regardless of any designation by Borrowers or anything herein to the contrary. Each Lender hereby purchases, without recourse or warranty, an undivided Pro Rata participation in all Swingline Loans outstanding from time to time until settled. If a Swingline Loan cannot be settled among Lenders, whether due to an Obligor's Insolvency Proceeding or for any other reason, each Lender shall pay the amount of its participation in the Loan to Agent, in immediately available funds, within one Business Day after Agent's request therefor. Lenders' obligations to make settlements and to fund participations are absolute, irrevocable and unconditional, without offset, counterclaim or other defense, and whether or not the Commitments have terminated, an Overadvance exists or the conditions in **Section 6** are satisfied.

4.1.4. Notices. If Borrowers request, convert or continue Loans, select interest rates or transfer funds based on telephonic or electronic instructions to Agent, Borrowers shall confirm the request by prompt delivery to Agent of a Notice of Borrowing or Notice of Conversion/Continuation, as applicable.

Agent and Lenders are not liable for any loss suffered by a Borrower as a result of Agent or a Lender acting on its understanding of telephonic or electronic instructions from a person believed in good faith to be authorized to give instructions on a Borrower's behalf.

**4.2 Defaulting Lender.** Notwithstanding anything herein to the contrary:

4.2.1. **Reallocation of Pro Rata Share; Amendments.** For purposes of determining Lenders' obligations or rights to fund, participate in or receive collections with respect to Loans and Letters of Credit (including existing Swingline Loans, Protective Advances and LC Obligations), Agent may in its discretion reallocate Pro Rata shares by excluding a Defaulting Lender's Commitments and Loans from the calculation of shares. A Defaulting Lender shall have no right to vote on any amendment, waiver or other modification of a Loan Document, except as provided in **Section 14.1.1(c)**.

4.2.2. **Payments; Fees.** Agent may, in its discretion, receive and retain any amounts payable to a Defaulting Lender under the Loan Documents, and a Defaulting Lender shall be deemed to have assigned to Agent such amounts until all Obligations owing to Agent, non-Defaulting Lenders and other Secured Parties have been paid in full. Agent may use such amounts to cover the Defaulting Lender's defaulted obligations, to Cash Collateralize such Lender's Fronting Exposure, to readvance the amounts to Borrowers or to repay Obligations. A Lender shall not be entitled to receive any fees accruing hereunder while it is a Defaulting Lender and its unfunded Commitment shall be disregarded for purposes of calculating the unused line fee under **Section 3.2.1**. If any LC Obligations owing to a Defaulted Lender are reallocated to other Lenders, fees attributable to such LC Obligations under **Section 3.2.2** shall be paid to such Lenders. Agent shall be paid all fees attributable to LC Obligations that are not reallocated.

4.2.3. **Status; Cure.** Agent may determine in its discretion that a Lender constitutes a Defaulting Lender and the effective date of such status shall be conclusive and binding on all parties, absent manifest error. Borrowers, Agent and Issuing Bank may agree in writing that a Lender has ceased to be a Defaulting Lender, whereupon Pro Rata shares shall be reallocated without exclusion of the reinstated Lender's Commitments and Loans, and the Revolver Usage and other exposures under the Commitments shall be reallocated among Lenders and settled by Agent (with appropriate payments by the reinstated Lender, including its payment of breakage costs for reallocated LIBOR Loans) in accordance with the readjusted Pro Rata shares. Unless expressly agreed by Borrowers, Agent and Issuing Bank, or as expressly provided herein with respect to Bail-In Actions and related matters, no reallocation of Commitments and Loans to non-Defaulting Lenders or reinstatement of a Defaulting Lender shall constitute a waiver or release of claims against such Lender. The failure of any Lender to fund a Loan, to make a payment in respect of LC Obligations or otherwise to perform obligations hereunder shall not relieve any other Lender of its obligations under any Loan Document. No Lender shall be responsible for default by another Lender.

**4.3 Number and Amount of LIBOR Loans; Determination of Rate.** Each Borrowing of LIBOR Loans when made shall be in a minimum amount of \$500,000, plus an increment of \$100,000 in excess thereof. No more than 5 Borrowings of LIBOR Loans may be outstanding at any time, and all LIBOR Loans having the same length and beginning date of their Interest Periods shall be aggregated together and considered one Borrowing for this purpose. Upon determining LIBOR for any Interest Period requested by Borrowers, Agent shall promptly notify Borrowers thereof by telephone or electronically and, if requested by Borrowers, shall confirm any telephonic notice in writing.

**4.4 Borrower Agent.** Each Borrower hereby designates Calix ("**Borrower Agent**") as its representative and agent for all purposes under the Loan Documents, including requests for and receipt of Loans and Letters of Credit, designation of interest rates, delivery or receipt of communications, delivery of Borrower Materials, Reports, payment of Obligations, requests for waivers, amendments or other accommodations, actions under the Loan Documents (including in respect of compliance with covenants), and all other dealings with Agent, Issuing Bank or any Lender. Borrower Agent hereby accepts such

appointment. Agent and Lenders shall be entitled to rely upon any notice or communication (including any notice of borrowing) delivered by or to Borrower Agent on behalf of any Borrower. Each of Agent, Issuing Bank and Lenders shall have the right, in its discretion, to deal exclusively with Borrower Agent for all purposes under the Loan Documents. Each Borrower agrees that any notice, election, communication, delivery, representation, agreement, action, omission or undertaking by Borrower Agent shall be binding upon and enforceable against such Borrower.

**4.5 One Obligation.** The Loans, LC Obligations and other Obligations constitute one general joint and several obligation of Borrowers and are secured by Agent's Lien on all Collateral.

**4.6 Effect of Termination.** On the effective date of the termination of all Commitments, the Obligations shall be immediately due and payable. Until Full Payment of the Obligations, all undertakings of Borrowers contained in the Loan Documents shall continue, and Agent shall retain its Liens in the Collateral and all of its rights and remedies under the Loan Documents. Agent shall not be required to terminate its Liens if within the 60 days prior to the Full Payment of the Obligations a Trigger Period existed unless it receives Cash Collateral or a written agreement, in each case satisfactory to it, protecting Agent and Lenders from dishonor or return of any Payment Item previously applied to the Obligations. **Sections 2.2, 3.4, 3.6, 3.7, 3.9, 5.4, 5.8, 5.9, 12, 14.2**, this Section, and each indemnity or waiver given by an Obligor or Lender in any Loan Document, shall survive any assignment by Agent, Issuing Bank or any Lender of rights or obligations hereunder, termination of any Commitment, and any repayment, satisfaction, discharge or Full Payment of any Obligations.

## **SECTION 5. PAYMENTS**

**5.1 General Payment Provisions.** All payments of Obligations shall be made in Dollars, without offset, counterclaim or defense of any kind, free and clear of (and without deduction for) any Taxes except as required by Applicable Law, and in immediately available funds, not later than 12:00 PT on the due date. Any payment after such time shall be deemed made on the next Business Day. Any payment of a LIBOR Loan prior to the end of its Interest Period shall be accompanied by all amounts due under **Section 3.9**.

**5.2 Repayment of Loans.** Loans may be prepaid from time to time, without penalty or premium. Loans shall be due and payable in full on the Termination Date, unless payment is sooner required hereunder, and any Overadvance or Protective Advance shall be due and payable as provided in **Sections 2.1.5 and 2.1.6**.

**5.3 Payment of Other Obligations.** Obligations other than Loans, including LC Obligations and Claims, shall be paid by Borrowers as provided in the Loan Documents or, if no payment date is specified, on demand.

**5.4 Marshaling; Payments Set Aside.** None of Agent or Lenders shall be under any obligation to marshal any assets in favor of any Obligor or against any Obligations. If any payment by or on behalf of Borrowers is made to Agent, Issuing Bank or any Lender, or if Agent, Issuing Bank or any Lender exercises a right of setoff, and any of such payment or setoff is subsequently invalidated, declared to be fraudulent or preferential, set aside or required (including pursuant to any settlement entered into by Agent, Issuing Bank or a Lender in its discretion) to be repaid to a trustee, receiver or any other Person, then the Obligation originally intended to be satisfied, and all Liens, rights and remedies relating thereto, shall be revived and continued in full force and effect as if such payment or setoff had not occurred.



## 5.5 Application and Allocation of Payments

5.5.1. Application. Payments made by Borrowers hereunder shall be applied (a) first, as specifically required hereby; (b) second, to Obligations then due and owing; (b) third, to other Obligations specified by Borrowers; and (c) fourth, as determined by Agent in its reasonable discretion.

5.5.2. Post-Default Allocation. Notwithstanding anything in any Loan Document to the contrary, during an Event of Default under **Section 11.1(j)**, or during any other Event of Default at the discretion of Agent or Required Lenders, monies to be applied to the Obligations, whether arising from payments by Obligor, realization on Collateral, setoff or otherwise, shall be allocated as follows:

- (a) first, to all fees, indemnification, costs and expenses, including Extraordinary Expenses, owing to Agent;
- (b) second, to all other amounts owing to Agent, including Swingline Loans, Protective Advances, and Loans and participations that a Defaulting Lender has failed to settle or fund;
- (c) third, to all amounts owing to Issuing Bank;
- (d) fourth, to all Obligations (other than Secured Bank Product Obligations) constituting fees, indemnification, costs or expenses owing to Lenders;
- (e) fifth, to all Obligations (other than Secured Bank Product Obligations) constituting interest;
- (f) sixth, to Cash Collateralize all LC Obligations;
- (g) seventh, to all Loans, and to Secured Bank Product Obligations constituting Swap Obligations (including Cash Collateralization thereof) up to the amount of Reserves existing therefor;
- (h) eighth, to all other Secured Bank Product Obligations; and
- (i) last, to all remaining Obligations.

Amounts shall be applied to payment of each category of Obligations only after Full Payment of amounts payable from time to time under all preceding categories. If amounts are insufficient to satisfy a category, they shall be paid ratably among outstanding Obligations in the category. Monies and proceeds obtained from an Obligor shall not be applied to its Excluded Swap Obligations, but appropriate adjustments shall be made with respect to amounts obtained from other Obligor to preserve the allocations in each category. Agent shall have no obligation to calculate the amount of any Secured Bank Product Obligation and may request a reasonably detailed calculation thereof from a Secured Bank Product Provider. If the provider fails to deliver the calculation within five days following request, Agent may assume the amount is zero.

5.5.3. Erroneous Application. Agent shall not be liable for any application of amounts made by it in good faith and, if any such application is subsequently determined to have been made in error, the sole recourse of any Lender or other Person to which such amount should have been paid shall be to recover the amount from the Person that actually received it (and, if such amount was received by a Secured Party, the Secured Party agrees to return it).

**5.6 Dominion Account**. The ledger balance in the main Dominion Account as of the end of a Business Day shall be applied to the Obligations at the beginning of the next Business Day, during any Trigger Period. Any resulting credit balance shall not accrue interest in favor of Borrowers and shall be made available to Borrowers as long as no Default or Event of Default exists. Dominion Accounts may (but are not required to) be established and maintained with banks located in (i) London, England with respect to collections of Accounts denominated in Euro or Pounds Sterling so long as such Dominion Accounts are

subject to a “fixed charge” in favor of Agent under the laws of England and Wales, and (ii) in any Province in Canada with respect to collections of Accounts denominated in Canadian Dollars so long as such Dominion Account is subject to a Lien in favor of Agent under the laws of the applicable Canadian Province, in each case, subject to documentation in form and substance reasonably satisfactory to Lender. The foregoing shall not limit the Borrowers’ right to establish and maintain any Dominion Account, for collections in any currency, in the United States.

**5.7 Account Stated.** Agent shall maintain, in accordance with its customary practices, loan account(s) evidencing the Debt of Borrowers hereunder. Any failure of Agent to record anything in a loan account, or any error in doing so, shall not limit or otherwise affect the obligation of Borrowers to pay any amount owing hereunder. Entries in a loan account shall be presumptive evidence of the information contained therein. If information in a loan account is provided to or inspected by or on behalf of a Borrower, the information shall be conclusive and binding on Borrowers for all purposes absent manifest error, except to the extent Borrower Agent notifies Agent in writing within 30 days that specific information is subject to dispute.

## **5.8 Taxes**

### **5.8.1. Payments Free of Taxes; Obligation to Withhold; Tax Payment.**

(a) All payments of Obligations by Obligor shall be made without deduction or withholding for any Taxes, except as required by Applicable Law. If Applicable Law (as determined by Agent in its discretion) requires the deduction or withholding of any Tax from any such payment by Agent or an Obligor, then Agent or such Obligor shall be entitled to make such deduction or withholding based on information and documentation provided pursuant to **Section 5.9**.

(b) If Agent or any Obligor is required by the Code to withhold or deduct Taxes, including backup withholding and withholding taxes, from any payment, then (i) Agent shall pay the full amount that it determines is to be withheld or deducted to the relevant Governmental Authority pursuant to the Code, and (ii) to the extent the withholding or deduction is made on account of Indemnified Taxes, the sum payable by the applicable Obligor shall be increased as necessary so that the Recipient receives an amount equal to the sum it would have received had no such withholding or deduction been made.

(c) If Agent or any Obligor is required by any Applicable Law other than the Code to withhold or deduct Taxes from any payment, then (i) Agent or such Obligor, to the extent required by Applicable Law, shall timely pay the full amount to be withheld or deducted to the relevant Governmental Authority, and (ii) to the extent the withholding or deduction is made on account of Indemnified Taxes, the sum payable by the applicable Obligor shall be increased as necessary so that the Recipient receives an amount equal to the sum it would have received had no such withholding or deduction been made.

**5.8.2. Payment of Other Taxes.** Without limiting the foregoing, Borrowers shall timely pay to the relevant Governmental Authority in accordance with Applicable Law, or at Agent’s option, timely reimburse Agent for payment of, any Other Taxes.

### **5.8.3. Tax Indemnification.**

(a) Each Borrower shall indemnify and hold harmless, on a joint and several basis, each Recipient against any Indemnified Taxes (including those imposed or asserted on or attributable to amounts payable under this Section) payable or paid by a Recipient or required to be withheld or deducted from a payment to a Recipient, and any penalties, interest and reasonable expenses arising therefrom or with respect thereto, whether or not such Indemnified Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. Each Borrower shall indemnify and hold harmless Agent against any amount that a Lender or Issuing Bank fails for any reason to pay indefeasibly to Agent as required pursuant to this Section;

provided, however, that Borrowers shall not have any obligation to indemnify Agent against any such amount that is incurred due to Agent's gross negligence or willful misconduct. Each Borrower shall make payment within 10 Business Days after demand for any amount or liability payable under this Section. A certificate as to the amount of such payment or liability delivered to Borrowers by a Lender or Issuing Bank (with a copy to Agent), or by Agent on its own behalf or on behalf of any Recipient, shall be conclusive absent manifest error.

(b) Each Lender and Issuing Bank shall indemnify and hold harmless, on a several basis, (i) Agent against any Indemnified Taxes attributable to such Lender or Issuing Bank (but only to the extent Borrowers have not already paid or reimbursed Agent therefor and without limiting Borrowers' obligation to do so), (ii) Agent and Obligors, as applicable, against any Taxes attributable to such Lender's failure to maintain a Participant register as required hereunder, and (iii) Agent and Obligors, as applicable, against any Excluded Taxes attributable to such Lender or Issuing Bank, in each case, that are payable or paid by Agent or an Obligor in connection with any Obligations, and any reasonable expenses arising therefrom or with respect thereto, whether or not such Indemnified Taxes were correctly or legally imposed or asserted by the relevant Governmental Authority. Each Lender and Issuing Bank shall make payment within 10 Business Days after demand for any amount or liability payable under this Section. A certificate as to the amount of such payment or liability delivered to any Lender or Issuing Bank by Agent shall be conclusive absent manifest error.

5.8.4. Evidence of Payments. As soon as practicable after payment by an Obligor of any Taxes pursuant to this Section, Borrower Agent shall deliver to Agent the original or a certified copy of a receipt issued by the appropriate Governmental Authority evidencing the payment, a copy of any return required by Applicable Law to report the payment or other evidence of payment reasonably satisfactory to Agent.

5.8.5. Treatment of Certain Refunds. If a Recipient determines in its discretion that it has received a refund of Taxes that were indemnified by Borrowers or with respect to which a Borrower paid additional amounts pursuant to this Section, it shall pay the amount of such refund to Borrowers (but only to the extent of indemnity payments or additional amounts actually paid by Borrowers with respect to the Taxes giving rise to the refund), net of all out-of-pocket expenses (including Taxes) incurred by such Recipient and without interest (other than interest paid by the relevant Governmental Authority with respect to such refund). Borrowers shall, upon request by the Recipient, repay to the Recipient such amount paid over to Borrowers (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) if the Recipient is required to repay such refund to the Governmental Authority. Notwithstanding anything herein to the contrary, no Recipient shall be required to pay any amount to Borrowers if such payment would place it in a less favorable net after-Tax position than it would have been in if the Tax subject to indemnification and giving rise to such refund had not been deducted, withheld or otherwise imposed and the indemnification payments or additional amounts with respect to such Tax had never been paid. In no event shall Agent or any Recipient be required to make its tax returns (or any other information relating to its taxes that it deems confidential) available to any Obligor or other Person.

## **5.9 Lender Tax Information**

5.9.1. Status of Lenders. Any Lender that is entitled to an exemption from or reduction of withholding Tax with respect to payments of Obligations shall deliver to Borrowers and Agent properly completed and executed documentation reasonably requested by Borrowers or Agent as will permit such payments to be made without or at a reduced rate of withholding. In addition, any Lender, if reasonably requested by Borrowers or Agent, shall deliver such other documentation prescribed by Applicable Law or reasonably requested by Borrowers or Agent to enable them to determine whether such Lender is subject to backup withholding or information reporting requirements. Notwithstanding the foregoing, such

documentation (other than documentation described in **Sections 5.9.2(a), (b) and (d)**) shall not be required if a Lender reasonably believes delivery of the documentation would subject it to any material unreimbursed cost or expense or would materially prejudice its legal or commercial position.

5.9.2. Documentation. Without limiting the foregoing, if any Borrower is a U.S. Person,

(a) Any Lender that is a U.S. Person shall deliver to Borrowers and Agent on or prior to the date on which such Lender becomes a Lender hereunder (and from time to time thereafter upon reasonable request of Borrowers or Agent), executed copies of IRS Form W-9, certifying that such Lender is exempt from U.S. federal backup withholding Tax;

(b) Any Foreign Lender shall, to the extent it is legally entitled to do so, deliver to Borrowers and Agent (in such number of copies as shall be requested by the recipient) on or prior to the date on which such Foreign Lender becomes a Lender hereunder (and from time to time thereafter upon reasonable request of Borrowers or Agent), whichever of the following is applicable:

(i) in the case of a Foreign Lender claiming the benefits of an income tax treaty to which the United States is a party, (x) with respect to payments of interest under any Loan Document, executed copies of IRS Form W-8BENE establishing an exemption from or reduction of U.S. federal withholding Tax pursuant to the “interest” article of such tax treaty, and (y) with respect to other payments under the Loan Documents, IRS Form W-8BENE establishing an exemption from or reduction of U.S. federal withholding Tax pursuant to the “business profits” or “other income” article of such tax treaty;

(ii) executed copies of IRS Form W-8ECI;

(iii) in the case of a Foreign Lender claiming the benefits of the exemption for portfolio interest under Section 881(c) of the Code, (x) a certificate in form satisfactory to Agent to the effect that such Foreign Lender is not a “bank” within the meaning of Section 881(c)(3)(A) of the Code, a “10 percent shareholder” of any Borrower within the meaning of Section 881(c)(3)(B) of the Code, or a “controlled foreign corporation” described in Section 881(c)(3)(C) of the Code (“U.S. Tax Compliance Certificate”), and (y) executed copies of IRS Form W-8BENE; or

(iv) to the extent a Foreign Lender is not the beneficial owner, executed copies of IRS Form W-8IMY, accompanied by IRS Form W-8ECI, IRS Form W-8BENE, a U.S. Tax Compliance Certificate in form satisfactory to Agent, IRS Form W-9, and/or other certification documents from each beneficial owner, as applicable; provided, that if the Foreign Lender is a partnership and one or more of its direct or indirect partners is claiming the portfolio interest exemption, such Foreign Lender may provide a U.S. Tax Compliance Certificate on behalf of each such partner;

(c) any Foreign Lender shall, to the extent it is legally entitled to do so, deliver to Borrowers and Agent (in such number of copies as shall be requested by the recipient) on or prior to the date on which such Foreign Lender becomes a Lender hereunder (and from time to time thereafter upon reasonable request), executed copies of any other form prescribed by Applicable Law as a basis for claiming exemption from or a reduction in U.S. federal withholding Tax, duly completed, together with such supplementary documentation as may be prescribed by Applicable Law to permit Borrowers or Agent to determine the withholding or deduction required to be made; and

(d) if payment of an Obligation to a Lender would be subject to U.S. federal withholding Tax imposed by FATCA if such Lender were to fail to comply with the applicable reporting requirements of FATCA (including those contained in Section 1471(b) or 1472(b) of the Code), such Lender shall deliver to Borrowers and Agent, at the time(s) prescribed by law and otherwise upon reasonable request, such

documentation prescribed by Applicable Law (including Section 1471(b)(3)(C)(i) of the Code) and such additional documentation as may be appropriate for Borrowers or Agent to comply with their obligations under FATCA and to determine that such Lender has complied with its obligations under FATCA or to determine the amount to deduct and withhold from such payment. Solely for purposes of this clause (d), "FATCA" shall include any amendments made to FATCA after the date hereof.

5.9.3. Redelivery of Documentation. If any form or certification previously delivered by a Lender pursuant to this Section expires or becomes obsolete or inaccurate in any respect, such Lender shall promptly update the form or certification or notify Borrowers and Agent in writing of its inability to do so.

#### **5.10 Nature and Extent of Each Borrower's Liability**

5.10.1. Joint and Several Liability. Each Borrower agrees that it is jointly and severally liable for, and absolutely and unconditionally guarantees to Agent and Lenders the prompt payment and performance of, all Obligations, except its Excluded Swap Obligations. Each Borrower agrees that its guaranty obligations hereunder constitute a continuing guaranty of payment and not of collection, that such obligations shall not be discharged until Full Payment of the Obligations, and that such obligations are absolute and unconditional, irrespective of (a) the genuineness, validity, regularity, enforceability, subordination or any future modification of, or change in, any Obligations or Loan Document (made in accordance with the terms of the Loan Documents), or any other document, instrument or agreement to which any Obligor is or may become a party or be bound; (b) the absence of any action to enforce this Agreement (including this Section) or any other Loan Document, or any waiver, consent or indulgence of any kind by Agent or any Lender with respect thereto; (c) the existence, value or condition of, or failure to perfect a Lien or to preserve rights against, any security or guaranty for any Obligations or any action, or the absence of any action, by Agent or any Lender in respect thereof (including the release of any security or guaranty); (d) the insolvency of any Obligor; (e) any election by Agent or any Lender in an Insolvency Proceeding for the application of Section 1111(b)(2) of the Bankruptcy Code; (f) any borrowing or grant of a Lien by any other Borrower, as debtor-in-possession under Section 364 of the Bankruptcy Code or otherwise; (g) the disallowance of any claims of Agent or any Lender against any Obligor for the repayment of any Obligations under Section 502 of the Bankruptcy Code or otherwise; or (h) any other action or circumstances that might otherwise constitute a legal or equitable discharge or defense of a surety or guarantor, except Full Payment of the Obligations.

#### 5.10.2. Waivers.

(a) Each Borrower expressly waives all rights that it may have now or in the future under any statute, at common law, in equity or otherwise, to compel Agent or Lenders to marshal assets or to proceed against any Obligor, other Person or security for the payment or performance of any Obligations before, or as a condition to, proceeding against such Borrower. Each Borrower waives all defenses available to a surety, guarantor or accommodation co-obligor other than Full Payment of Obligations and waives, to the maximum extent permitted by law, any right to revoke any guaranty of Obligations as long as it is a Borrower. It is agreed among each Borrower, Agent and Lenders that the provisions of this Section are of the essence of the transaction contemplated by the Loan Documents and that, but for such provisions, Agent and Lenders would decline to make Loans and issue Letters of Credit. Each Borrower acknowledges that its guaranty pursuant to this Section is necessary to the conduct and promotion of its business, and can be expected to benefit such business.

(b) Agent and Lenders may, in their discretion, pursue such rights and remedies as they deem appropriate, including realization upon Collateral or any Real Estate by judicial foreclosure or nonjudicial sale or enforcement, without affecting any rights and remedies under this Section. If, in taking any action in connection with the exercise of any rights or remedies, Agent or any Lender shall forfeit any

other rights or remedies, including the right to enter a deficiency judgment against any Borrower or other Person, whether because of any Applicable Laws pertaining to “election of remedies” or otherwise, each Borrower consents to such action and waives any claim based upon it, even if the action may result in loss of any rights of subrogation that any Borrower might otherwise have had. Any election of remedies that results in denial or impairment of the right of Agent or any Lender to seek a deficiency judgment against any Borrower shall not impair any other Borrower’s obligation to pay the full amount of the Obligations. Each Borrower waives all rights and defenses arising out of an election of remedies, such as nonjudicial foreclosure with respect to any security for Obligations, even though that election of remedies destroys such Borrower’s rights of subrogation against any other Person. Agent may, to the extent permitted by Applicable Law, bid Obligations, in whole or part, at any foreclosure, trustee or other sale, including any private sale, and the amount of such bid need not be paid by Agent but shall be credited against the Obligations.

5.10.3. Extent of Liability: Contribution.

(a) Notwithstanding anything herein to the contrary, each Borrower’s liability under this Section shall not exceed the greater of (i) all amounts for which such Borrower is primarily liable, as described in clause (c) below, and (ii) such Borrower’s Allocable Amount.

(b) If any Borrower makes a payment under this Section of any Obligations (other than amounts for which such Borrower is primarily liable) (a “Guarantor Payment”) that, taking into account all other Guarantor Payments previously or concurrently made by any other Borrower, exceeds the amount that such Borrower would otherwise have paid if each Borrower had paid the aggregate Obligations satisfied by such Guarantor Payments in the same proportion that such Borrower’s Allocable Amount bore to the total Allocable Amounts of all Borrowers, then such Borrower shall be entitled to receive contribution and indemnification payments from, and to be reimbursed by, each other Borrower for the amount of such excess, ratably based on their respective Allocable Amounts in effect immediately prior to such Guarantor Payment. The “Allocable Amount” for any Borrower shall be the maximum amount that could then be recovered from such Borrower under this Section without rendering such payment voidable under Section 548 of the Bankruptcy Code or under any applicable state fraudulent transfer or conveyance act, or similar statute or common law.

(c) This Section shall not limit the liability of any Borrower to pay or guarantee Loans made directly or indirectly to it (including Loans advanced hereunder to any other Person and then re-loaned or otherwise transferred to, or for the benefit of, such Borrower), LC Obligations relating to Letters of Credit issued to support its business, Secured Bank Product Obligations incurred to support its business, and all accrued interest, fees, expenses and other related Obligations with respect thereto, for which such Borrower shall be primarily liable for all purposes hereunder.

(d) Each Obligor that is a Qualified ECP when its guaranty of or grant of Lien as security for a Swap Obligation becomes effective hereby jointly and severally, absolutely, unconditionally and irrevocably undertakes to provide funds or other support to each Specified Obligor with respect to such Swap Obligation as may be needed by such Specified Obligor from time to time to honor all of its obligations under the Loan Documents in respect of such Swap Obligation (but, in each case, only up to the maximum amount of such liability that can be hereby incurred without rendering such Qualified ECP’s obligations and undertakings under this Section voidable under any applicable fraudulent transfer or conveyance act). The obligations and undertakings of each Qualified ECP under this Section shall remain in full force and effect until Full Payment of all Obligations. Each Obligor intends this Section to constitute, and this Section shall be deemed to constitute, a guarantee of the obligations of, and a “keepwell, support or other agreement” for the benefit of, each Obligor for all purposes of the Commodity Exchange Act.

5.10.4. Joint Enterprise. Each Borrower has requested that Agent and Lenders make this credit facility available to Borrowers on a combined basis, in order to finance Borrowers’ business most

efficiently and economically. Borrowers' business is a mutual and collective enterprise, and the successful operation of each Borrower is dependent upon the successful performance of the integrated group. Borrowers believe that consolidation of their credit facility will enhance the borrowing power of each Borrower and ease administration of the facility, all to their mutual advantage. Borrowers acknowledge that Agent's and Lenders' willingness to extend credit and to administer the Collateral on a combined basis hereunder is done solely as an accommodation to Borrowers and at Borrowers' request.

5.10.5. Subordination. Each Borrower hereby subordinates any claims, including any rights at law or in equity to payment, subrogation, reimbursement, exoneration, contribution, indemnification or set off, that it may have at any time against any other Obligor, howsoever arising, to the Full Payment of its Obligations.

## SECTION 6. CONDITIONS PRECEDENT

**6.1 Conditions Precedent to Initial Loans**. In addition to the conditions set forth in **Section 6.2**, Lenders shall not be required to fund any requested Loan, issue any Letter of Credit, or otherwise extend credit to Borrowers hereunder, until the date ("Closing Date") that each of the following conditions has first been satisfied:

- (a) Each Loan Document shall have been duly executed and delivered to Agent by each of the signatories thereto.
- (b) Agent shall have received acknowledgments of all filings or recordations necessary to perfect its Liens in the Collateral, as well as UCC and Lien searches of the Obligors reasonably satisfactory to Agent that such Liens are the only Liens upon the Collateral, except Permitted Liens.
- (c) Agent shall have received Borrowers' draft financial statements for the period ending December 31, 2019 and such financial statements reflect Borrowers' achievement of its projected EBITDA for the fourth Fiscal Quarter of 2019.
- (d) Agent shall have received duly executed agreements establishing each Dominion Account and related lockbox, in form and substance, and with financial institutions, reasonably satisfactory to Agent.
- (e) Agent shall have received certificates, in form and substance reasonably satisfactory to it, from a Senior Officer of each Borrower certifying that, after giving effect to the initial Loans and transactions hereunder on the Closing Date, (i) such Borrower is Solvent; (ii) no Default or Event of Default exists; and (iii) the representations and warranties set forth in **Section 9** are true and correct in all material respects (except that any representation and warranty that is qualified by materiality or Material Adverse Effect shall be true and correct in all respects).
- (f) Agent shall have received a certificate of a duly authorized officer of each Obligor, certifying (i) that attached copies of such Obligor's Organic Documents are true and complete, and in full force and effect, without amendment except as shown; (ii) that an attached copy of resolutions authorizing execution and delivery of the Loan Documents is true and complete, and that such resolutions are in full force and effect, were duly adopted, have not been amended, modified or revoked, and constitute all resolutions adopted with respect to this credit facility; and (iii) to the title, name and signature of each Person authorized to sign the Loan Documents. Agent may conclusively rely on this certificate until it is otherwise notified by the applicable Obligor in writing.
- (g) Agent shall have received a written opinion of Latham & Watkins LLP, in form and substance reasonably satisfactory to Agent.
- (h) Agent shall have received copies of the charter documents of each Obligor, certified by the Secretary of State or other appropriate official of such Obligor's jurisdiction of organization. Agent shall

have received good standing certificates for each Obligor, issued by the Secretary of State or other appropriate official of such Obligor's jurisdiction of organization.

(i) Agent shall have received copies of policies or certificates of insurance for the insurance policies carried by Borrowers, all in compliance with the Loan Documents.

(j) Each Borrower shall have provided, in form and substance reasonably satisfactory to Agent and each Lender, all documentation and other information as Agent or any Lender reasonably requests at least 10 days prior to the Closing Date in connection with applicable "know your customer" and anti-money-laundering rules and regulations, including the Patriot Act and Beneficial Ownership Regulation. If any Borrower qualifies as a "legal entity customer" under the Beneficial Ownership Regulation, it shall have provided a Beneficial Ownership Certification to Agent and Lenders in relation to such Borrower.

(k) Agent shall have completed its business, financial and legal due diligence of Obligors, including a roll-forward of its previous field examination, with results reasonably satisfactory to Agent.

(l) No event shall have occurred that has had, or could reasonably be expected to have, a Material Adverse Effect since December 31, 2019.

(m) Borrowers shall have paid all fees and expenses to be paid to Agent and Lenders on the Closing Date that have been invoiced to the Borrowers at least 3 Business Days prior to the Closing Date.

(n) Agent shall have received a Borrowing Base Report as of December 31, 2019. Upon giving effect to the initial funding of Loans and issuance of Letters of Credit, and the payment by Borrowers of all fees and expenses incurred in connection herewith as well as any payables stretched beyond their customary payment practices, Liquidity shall be at least \$30,000,000, of which at least \$5,000,000 shall consist of Availability.

**6.2 Conditions Precedent to All Credit Extensions.** Agent, Issuing Bank and Lenders shall not be required to make any credit extension hereunder (including funding any Loan, or arranging any Letter of Credit), if the following conditions are not satisfied on such date and upon giving effect thereto:

(a) No Default or Event of Default exists;

(b) The representations and warranties of each Obligor in the Loan Documents are true and correct in all material respects (except for representations and warranties that expressly apply only on an earlier date and except that any representation and warranty that is qualified by materiality or Material Adverse Effect shall be true and correct in all respects); and

(c) With respect to a Letter of Credit issuance, all LC Conditions are satisfied.

Each request (or deemed request) by a Borrower for any credit extension shall constitute a representation by Borrowers that the foregoing conditions are satisfied on the date of the credit extension. As an additional condition to a credit extension, Agent may request any other information, certification, document, instrument or agreement as it deems appropriate.

## **SECTION 7. COLLATERAL**

**7.1 Grant of Security Interest.** To secure the prompt payment and performance of its Obligations, each Borrower hereby grants to Agent, for the benefit of Secured Parties, a continuing Lien on all Property of such Borrower, including the following, whether now owned or hereafter acquired, and wherever located:

(a) all Accounts;



- (b) all Chattel Paper, including electronic chattel paper;
- (c) all Commercial Tort Claims, including those shown on **Schedule 9.1.16**;
- (d) all Deposit Accounts;
- (e) all Documents;
- (f) all General Intangibles, including Intellectual Property;
- (g) all Goods, including Inventory, Equipment and fixtures;
- (h) all Instruments;
- (i) all Investment Property;
- (j) all Letter-of-Credit Rights;
- (k) all Supporting Obligations;
- (l) all monies, whether or not in the possession or under the control of Agent, a Lender, or a bailee or Affiliate of Agent or a Lender, including any Cash Collateral;
- (m) all accessions to, substitutions for, and all replacements, products, and cash and non-cash proceeds of the foregoing, including proceeds of and unearned premiums with respect to insurance policies, and claims against any Person for loss, damage or destruction of any Collateral; and
- (n) all books and records (including customer lists, files, correspondence, tapes, computer programs, print-outs and computer records) pertaining to the foregoing.

Notwithstanding the foregoing or anything herein to the contrary, the Collateral shall not include, and no Borrower shall be deemed to have granted a Lien on or security interest in any Excluded Property. Each representation, warranty and covenant regarding the Collateral shall be interpreted as giving effect to the exclusion of the Excluded Property.

## **7.2 Lien on Deposit Accounts; Cash Collateral**

7.2.1. Deposit Accounts. Agent's Lien hereunder encumbers all amounts credited to any Deposit Account of a Borrower, including sums in any blocked, lockbox, sweep or collection account, but in all events excluding all Excluded Property. Each Borrower hereby authorizes and directs each bank or other depository to deliver to Agent, upon request, all balances in any Deposit Account included in the Collateral that is maintained for such Borrower, without inquiry into the authority or right of Agent to make such request.

7.2.2. Cash Collateral. Cash Collateral may be invested, at Agent's discretion (with the consent of Borrowers, provided no Event of Default exists), but Agent shall have no duty to do so, regardless of any agreement or course of dealing with any Borrower, and shall have no responsibility for any investment or loss. As security for its Obligations, each Borrower hereby grants to Agent a security interest in and Lien upon all Cash Collateral delivered hereunder from time to time, whether held in a segregated cash collateral account or otherwise. Agent may apply Cash Collateral to payment of such Obligations as they become due, in accordance with the terms of this Agreement. All Cash Collateral and related deposit accounts shall be under the sole dominion and control of Agent, and no Borrower or other Person shall have any right to any Cash Collateral until Full Payment of the Obligations.

## **7.3 Reserved**

#### **7.4 Other Collateral**

7.4.1. Commercial Tort Claims. Borrowers shall promptly notify Agent in writing if any Borrower has a Commercial Tort Claim (other than a Commercial Tort Claim for less than \$1,000,000), shall promptly amend **Schedule 9.1.16** to include such claim, and shall take such actions as Agent deems appropriate to subject such claim to a duly perfected, first priority Lien in favor of Agent.

7.4.2. Certain After-Acquired Collateral. Borrowers shall (a) promptly notify Agent if a Borrower obtains an interest in any Copyright, Deposit Account, Chattel Paper, Document, Instrument, Investment Property or Letter-of-Credit Right, in each case, with a fair market value in excess of \$1,000,000 that is required to be included in the Collateral, (b) upon request, take such actions as Agent reasonably deems appropriate to effect its perfected, first priority Lien (subject to Permitted Liens) on the Collateral and (c) together with each Compliance Certificate delivered in connection with the Borrowers' annual audited financial statements, provide a list of all registered Intellectual Property required to be included in the Collateral that was created or acquired since the last such update (or the Closing Date in the case of the first such Compliance Certificate delivered after the Closing Date). If Collateral with a fair market value in excess of \$2,000,000 for any one third party is in the possession of a third party, Borrowers shall use commercially reasonable efforts to obtain an acknowledgment from such party that it holds the Collateral for the benefit of Agent.

7.5 Limitations. The Lien on Collateral granted hereunder is given as security only and shall not subject Agent or any Lender to, or in any way modify, any obligation or liability of Borrowers relating to any Collateral. In no event shall any Obligor's grant of a Lien under any Loan Document secure its Excluded Swap Obligations.

7.6 Further Assurances. All Liens granted to Agent under the Loan Documents are for the benefit of Secured Parties. Promptly upon request, Borrowers shall deliver such instruments and agreements, and shall take such actions, as Agent reasonably deems appropriate under Applicable Law to evidence or perfect its Lien on any Collateral, or otherwise to give effect to the intent of this Agreement. Each Borrower authorizes Agent to file any financing statement that describes the Collateral as "all assets" or "all personal property" of such Borrower, or words to similar effect, and ratifies any action taken by Agent before the Closing Date to effect or perfect its Lien on any Collateral.

### **SECTION 8. COLLATERAL ADMINISTRATION**

8.1 Borrowing Base Reports. By the 15th day of each month Borrowers shall deliver to Agent (and Agent shall promptly deliver same to Lenders) a Borrowing Base Report as of the close of business of the previous month, provided, that, at any time a Trigger Period is in effect, Borrowers shall deliver to Agent a Borrowing Base Report as of the third Business Day of each week prepared as of the close of business of the previous week. All information (including calculation of Availability) in a Borrowing Base Report shall be certified by Borrower Agent. Agent may from time to time adjust such report to the extent any information or calculation does not comply with this Agreement.

#### **8.2 Accounts**

8.2.1. Records and Schedules of Accounts. Each Borrower shall keep accurate and complete records of its Accounts in all material respects, including all payments and collections thereon and shall submit to Agent sales, collection, reconciliation and other reports in form reasonably satisfactory to Agent, on such periodic basis as Agent may reasonably request. Each Borrower shall also provide to Agent, on or before the 15th day of each month, a detailed aged trial balance of all Accounts as of the end of the preceding month, specifying each Account's Account Debtor name and address, amount, invoice date and due date, showing any discount, allowance, credit, authorized return or dispute, and including such proof of

delivery, copies of invoices and invoice registers, copies of related documents, repayment histories, status reports and other information as Agent may reasonably request. If Accounts in an aggregate face amount of \$500,000 or more cease to be Eligible Accounts, Borrowers shall notify Agent of such occurrence promptly (and in any event within one Business Day) after any Borrower has knowledge thereof.

8.2.2. Taxes. If an Account for any Borrower includes a charge for any Taxes, during the continuance of a Trigger Period, Agent is authorized, in its discretion, to pay the amount thereof to the proper taxing authority for the account of such Borrower and to charge Borrowers therefor; provided, that neither Agent nor Lenders shall be liable for any Taxes that may be due from Borrowers or relate to any Collateral.

8.2.3. Account Verification. Agent shall have the right at any time, in the name of Agent, any designee of Agent or any Borrower, to verify the validity, amount or any other matter relating to any Accounts of Borrowers by mail, telephone or otherwise. Borrowers shall use commercially reasonable efforts to cooperate with Agent in an effort to facilitate and promptly conclude any such verification process.

8.2.4. Maintenance of Dominion Account. Borrowers shall maintain Dominion Accounts pursuant to lockbox or other arrangements reasonably acceptable to Agent. Borrowers shall obtain an agreement (in form and substance reasonably satisfactory to Agent) from each lockbox servicer and Dominion Account bank, establishing Agent's control over and Lien in the lockbox or Dominion Account (which may be exercised by Agent only during a Trigger Period) requiring immediate deposit of all remittances received in the lockbox to a Dominion Account, and waiving offset rights of such servicer or bank, except for customary administrative charges. If a Dominion Account is not maintained with Bank of America, Agent may, during any Trigger Period, require immediate transfer of all funds in such account to a Dominion Account maintained with Bank of America. Agent and Lenders assume no responsibility to Borrowers for any lockbox arrangement or Dominion Account, including any claim of accord and satisfaction or release with respect to any Payment Items accepted by any bank.

8.2.5. Proceeds of Collateral. Borrowers shall request in writing and otherwise use commercially reasonable efforts to cause all payments on Accounts or otherwise relating to Collateral to be made directly to a Dominion Account (or a lockbox relating to a Dominion Account). If any Borrower or Subsidiary receives cash or Payment Items with respect to any Collateral, it shall hold same in trust for Agent and promptly (not later than the third Business Day after receipt thereof) deposit same into a Dominion Account.

### **8.3 Inventory**

8.3.1. Records and Reports of Inventory. Each Borrower shall keep accurate and complete records of its Inventory in all material respects, including costs and daily withdrawals and additions, and shall submit to Agent inventory and reconciliation reports to Agent, on such periodic basis as Agent may request but in no event more frequently than once per month; provided that Borrowers shall only be required to deliver such reports to the Agent if Inventory is being utilized in the Borrower Base at such time. Each Borrower shall conduct a physical inventory at least once per calendar year (and on a more frequent basis if requested by Agent when an Event of Default exists) and periodic cycle counts consistent with historical practices, and upon request of Agent shall provide to Agent a report based on each such inventory that results in a material adverse finding promptly upon completion thereof.

8.3.2. Returns of Inventory. Borrowers shall promptly notify Agent if at any time the aggregate Value of Eligible Inventory then included in the Borrowing Base returned by Borrowers to its vendors since the date of the most recently delivered Borrowing Base Report exceeds \$500,000.

8.3.3. Acquisition, Sale and Maintenance. Each Borrower shall take all steps to assure that all Inventory is produced in material accordance with Applicable Law, including the FLSA. No Borrower shall sell any Inventory located in the United States on consignment or approval or any other basis under which the customer may return or require a Borrower to repurchase such Inventory, except as disclosed to Agent in writing prior to the Closing Date or otherwise in the Ordinary Course of Business. Borrowers shall use, store and maintain all Inventory with reasonable care and caution, in accordance with applicable standards of any insurance and in material conformity with all Applicable Law, and shall make current rent payments (within applicable grace periods provided for in leases) at all locations where any Collateral is located.

#### **8.4 Equipment**

8.4.1. Records and Schedules of Equipment. Each Borrower shall keep accurate and complete records of its Equipment, including kind, quality, quantity, cost, acquisitions and dispositions thereof, and shall submit to Agent, upon Agent's request, but in no event more frequently than once per calendar year, a current schedule thereof.

8.4.2. [Reserved].

8.4.3. Condition of Equipment. The Equipment is in good operating condition and repair, reasonable wear and tear excepted.

**8.5 Deposit Accounts**. **Schedule 8.5** lists all Deposit Accounts maintained by Borrowers, including Dominion Accounts. Each Borrower shall take all actions necessary to establish Agent's first priority Lien on each Deposit Account (except Excluded Accounts). Borrowers shall be the sole account holders of each Deposit Account (except Excluded Accounts) and shall not allow any Person (other than Agent and the depository bank) to have control over their Deposit Accounts (except Excluded Accounts) or any Property deposited therein. Borrowers shall promptly notify Agent of any opening or closing of a Deposit Account and, with the consent of Agent, will amend **Schedule 8.5** to reflect the same.

#### **8.6 General Provisions**

8.6.1. Location of Collateral. All tangible items of Collateral, other than Inventory in transit and items of Collateral with an aggregate value not in excess of \$1,000,000 for any individual location, shall at all times be kept by Borrowers at the business locations set forth in **Schedule 8.6.1**, except that Borrowers may (a) make sales or other dispositions of Collateral in accordance with **Section 10.2.6**; and (b) move Collateral to another location, upon 10 Business Days (or such lesser period as Agent may agree) prior written notice to Agent (which notice shall be deemed to supplement **Schedule 8.6.1**).

8.6.2. Insurance of Collateral; Condemnation Proceeds.

(a) Each Borrower shall maintain insurance with respect to the Collateral, covering casualty, hazard, theft, malicious mischief, flood and other risks, in amounts, with endorsements and with financially sound and reputable insurers; provided, that if Real Estate secures any Obligations, flood hazard diligence, documentation and insurance for such Real Estate shall comply with all Flood Laws. From time to time upon request, Borrowers shall deliver to Agent copies of its insurance policies. Unless Agent shall agree otherwise, each policy shall include satisfactory endorsements (i) showing Agent as loss payee; (ii) requiring 30 days (or 10 days in the case of cancellation for non-payment) prior written notice to Agent in the event of cancellation of the policy for any reason whatsoever; and (iii) to the extent available from such insurer, specifying that the interest of Agent shall not be impaired or invalidated by any act or neglect of any Borrower or the owner of the Property, nor by the occupation of the premises for purposes more hazardous than are permitted by the policy. If any Borrower fails to provide and pay for any insurance, Agent may, in its Permitted Discretion, procure the insurance and charge Borrowers therefor. Each Borrower agrees to

deliver to Agent, promptly as rendered, copies of all reports made to insurance companies. While no Event of Default exists, Borrowers may settle, adjust or compromise any insurance claim, as long as the proceeds are delivered to Agent. If an Event of Default exists, unless Agent otherwise agrees, only Agent may settle, adjust and compromise such claims.

(b) [Reserved].

(c) So long as no Trigger Period is in effect, Borrowers may use any insurance proceeds or condemnation awards relating to any loss or destruction of Equipment or Real Estate proceeds or awards to repair or replace such Equipment or Real Estate (and until so used, the proceeds shall be held by Agent as Cash Collateral). At any time during a Trigger Period, any proceeds of insurance (other than workers' compensation or D&O insurance) and any awards arising from condemnation of Collateral shall be paid directly to Agent for application to the Obligations.

8.6.3. Protection of Collateral. All reasonable and documented expenses of protecting, storing, warehousing, insuring, handling, maintaining and shipping any Collateral, all Taxes payable with respect to any Collateral (including any sale thereof), and all other payments required to be made by Agent to any Person to realize upon any Collateral, shall be borne and paid by Borrowers. Agent shall not be liable or responsible in any way for the safekeeping of any Collateral, for any loss or damage thereto (except for reasonable care in its custody while Collateral is in Agent's actual possession), for any diminution in the value thereof, or for any act or default of any warehouseman, carrier, forwarding agency or other Person whatsoever, but the same shall be at Borrowers' sole risk.

8.6.4. Defense of Title. Each Borrower shall defend its title to Collateral and Agent's Liens therein against all Persons, claims and demands, except Permitted Liens.

**8.7 Power of Attorney**. Each Borrower hereby irrevocably constitutes and appoints Agent (and all Persons designated by Agent) as such Borrower's true and lawful attorney (and agent-in-fact) for the purposes provided in this Section. Agent, or Agent's designee, may (in its discretion), without notice and in either its or a Borrower's name, but at the cost and expense of Borrowers:

(a) At any time a Trigger Period exists, endorse a Borrower's name on any Payment Item or other proceeds of Collateral (including proceeds of insurance) that come into Agent's possession or control; and

(b) After the occurrence and during the continuance of an Event of Default, (i) notify any Account Debtors of the assignment of their Accounts, demand and enforce payment of Accounts by legal proceedings or otherwise, and generally exercise any rights and remedies with respect to Accounts; (ii) settle, adjust, modify, compromise, discharge or release any Accounts or other Collateral, or any legal proceedings brought to collect Accounts or Collateral; (iii) sell or assign any Accounts and other Collateral upon such terms, for such amounts and at such times as Agent deems advisable; (iv) collect, liquidate and receive balances in Deposit Accounts or investment accounts, in each case that constitute Collateral, and take control, in any manner, of proceeds of Collateral; (v) prepare, file and sign a Borrower's name to a proof of claim or other document in a bankruptcy of an Account Debtor, or to any notice, assignment or satisfaction of Lien or similar document; (vi) receive, open and dispose of mail addressed to a Borrower, and notify postal authorities to deliver any such mail to an address designated by Agent; (vii) endorse any Chattel Paper, Document, Instrument, bill of lading, or other document or agreement relating to any Accounts that constitute Collateral, Inventory that constitutes Collateral or any other Collateral; (viii) use a Borrower's stationery and sign its name to verifications of Accounts that constitute Collateral and notices to Account Debtors; (ix) use information contained in any data processing, electronic or information systems relating to Collateral; (x) make and adjust claims under insurance policies; (xi) take any action as may be necessary or appropriate to obtain payment under any letter of credit, banker's acceptance or other instrument for which a Borrower

is a beneficiary, in each case, that constitutes Collateral; (xii) exercise any voting or other rights relating to Investment Property that constitutes Collateral; and (xiii) take all other actions as Agent reasonably deems appropriate to fulfill any Borrower's obligations under the Loan Documents.

## SECTION 9. REPRESENTATIONS AND WARRANTIES

**9.1 General Representations and Warranties.** To induce Agent and Lenders to enter into this Agreement and to make available the Commitments, Loans and Letters of Credit, each Borrower represents and warrants that:

9.1.1. Organization and Qualification. Each Borrower and Subsidiary is duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization. Each Borrower and Subsidiary is duly qualified, authorized to do business and in good standing as a foreign corporation in each jurisdiction where failure to be so qualified could reasonably be expected to have a Material Adverse Effect. No Obligor is an EEA Financial Institution. The information included in the Beneficial Ownership Certification most recently provided to Agent and Lenders (if any) is true and complete in all respects.

9.1.2. Power and Authority. Each Obligor is duly authorized to execute, deliver and perform its Loan Documents. The execution, delivery and performance of the Loan Documents have been duly authorized by all necessary action, and do not (a) require any consent or approval of any holders of Equity Interests of any Obligor, except those already obtained; (b) contravene the Organic Documents of any Obligor; (c) violate or cause a default under any Applicable Law or Material Contract except as could not reasonably be expected to result in a Material Adverse Effect; or (d) result in or require imposition of a Lien (other than a Permitted Lien) on any Obligor's Property.

9.1.3. Enforceability. Each Loan Document is a legal, valid and binding obligation of each Obligor party thereto, enforceable in accordance with its terms, except as enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the enforcement of creditors' rights generally and the availability of equitable remedies.

9.1.4. Capital Structure. **Schedule 9.1.4** shows, as of the Closing Date, for each Borrower and Subsidiary, its name, jurisdiction of organization, authorized and issued Equity Interests, holders of its Equity Interests, and agreements binding on such holders with respect to such Equity Interests. Except as disclosed on **Schedule 9.1.4**, in the five years preceding the Closing Date, no Borrower or Subsidiary has acquired any substantial assets from any other Person nor been the surviving entity in a merger or combination. Each Borrower has good title to its Equity Interests in its Subsidiaries, subject only to Permitted Liens, and all such Equity Interests are duly issued, fully paid and non-assessable. Except as disclosed on **Schedule 9.1.4**, there are no outstanding purchase options, warrants, subscription rights, agreements to issue or sell, convertible interests, phantom rights or powers of attorney relating to Equity Interests of any Subsidiary of any Borrower.

9.1.5. Title to Properties; Priority of Liens. Each Borrower and Subsidiary has good and marketable title to (or valid leasehold interests in) all of its Real Estate, and good title to all of its personal Property, including all Property reflected in any financial statements delivered to Agent or Lenders, in each case free of Liens except Permitted Liens, except (a) those which have been disposed of by the Borrowers and their Subsidiaries subsequent to such date which dispositions have been in the Ordinary Course of Business or as otherwise permitted hereunder and (b) for such defects of title that could not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. As of the Closing Date, no Real Estate is located in a special flood hazard zone, except as disclosed on **Schedule 9.1.5**. Each Borrower and Subsidiary has paid and discharged all lawful claims (other than any claims being Properly Contested) that, if unpaid, could become a Lien on its Properties, other than Permitted Liens. This Agreement creates in favor of Agent, for the benefit of the Secured Parties, a valid and enforceable security interest in the Collateral

described herein, except as enforceability may be limited by bankruptcy, insolvency, reorganization or similar laws affecting the enforcement of creditors' rights generally and the availability of equitable remedies and (a) when the certificated Equity Interests and Instruments that constitute Collateral are delivered to Agent, the Lien created under this Agreement shall constitute a fully perfected first priority Lien on, and security interest in, all right, title and interest of the Borrowers in such certificated Equity Interests and Instruments, in each case prior and superior in right to any other Person, and (b) when financing statements in appropriate form are filed in the appropriate offices, the Liens created under this Agreement will constitute fully perfected Liens on, and security interests in, all right, title and interest of the Borrowers in such Collateral (other than Intellectual Property and Deposit Accounts) as to which a Lien may be perfected in such filing offices, in each case prior and superior in right to any other Person, other than with respect to Permitted Liens. Upon the recordation of a short-form security agreement in form and substance reasonably satisfactory to Borrower Agent and Agent with the USPTO and USCO, together with the financing statements in appropriate form filed in the appropriate offices, the Liens created under this Agreement shall constitute fully perfected Liens on, and security interests in, all right, title and interest of the Borrowers in the Intellectual Property constituting Collateral in which a security interest may be perfected by filing in the United States and its territories and possessions, in each case prior and superior in right to any other Person (it being understood that subsequent recordings in the USPTO and USCO may be necessary to perfect a Lien on registered trademarks and patents, trademark and patent applications and registered copyrights acquired by the Borrowers after the date hereof), other than with respect to Permitted Liens.

9.1.6. Accounts. Agent may rely on all statements and representations made by Borrowers with respect to the Eligible Accounts. Borrowers warrant, with respect to each Account shown as an Eligible Account in a Borrowing Base Report, that:

- (a) it is genuine and in all respects what it purports to be;
- (b) it arises out of a completed, bona fide sale and delivery of goods or rendition of services in the Ordinary Course of Business, and substantially in accordance with any purchase order, contract or other document relating thereto;
- (c) it is for a sum certain, maturing as stated in the applicable invoice, a copy of which has been furnished or is available to Agent on request;
- (d) it is not subject to any offset, Lien (other than Agent's Lien), deduction, defense, dispute, counterclaim or other adverse condition except as arising in the Ordinary Course of Business and disclosed to Agent; and it is absolutely owing by the Account Debtor, without contingency of any kind;
- (e) no purchase order, agreement, document or Applicable Law restricts assignment of the Account to Agent (regardless of whether, under the UCC, the restriction is ineffective), and the applicable Borrower is the sole payee or remittance party shown on the invoice;
- (f) no extension, compromise, settlement, modification, credit, deduction or return has been authorized or is in process with respect to the Account, except discounts or allowances granted in the Ordinary Course of Business for prompt payment that are reflected on the face of the invoice related thereto and in the reports submitted to Agent hereunder; and
- (g) to the Borrowers' knowledge, (i) there are no facts or circumstances that are reasonably likely to impair the enforceability or collectability of such Account; and (ii) the Account Debtor had the capacity to contract when the Account arose, continues to meet the applicable Borrower's customary credit standards, is Solvent, is not contemplating or subject to an Insolvency Proceeding, and has not failed, or suspended or ceased doing business.

9.1.7. Financial Statements. The consolidated and consolidating balance sheets, and related statements of income, cash flow and shareholders equity, of Borrowers and Subsidiaries that have been and are hereafter delivered to Agent and Lenders, are prepared in accordance with GAAP in all material respects, and fairly present in all material respects the financial positions and results of operations of Borrowers and Subsidiaries at the dates and for the periods indicated. All projections delivered from time to time to Agent and Lenders have been prepared in good faith, based on reasonable assumptions in light of the circumstances at such time (it being recognized by Agent and Lenders that such projections are not to be viewed as facts and that the actual results during the period or periods covered by such projections may vary from such projections and that such differences may be material and that such projections are not a guarantee of financial performance). Since December 31, 2019, there has been no event, change or occurrence that could reasonably be expected to have a Material Adverse Effect. As of the Closing Date, the Borrowers and their Subsidiaries, on a consolidated basis, are Solvent. No financial statement delivered to Agent or Lender at any time contains any untrue statement of a material fact, nor fails to disclose any material fact necessary to make such statement not materially misleading.

9.1.8. Reserved.

9.1.9. Taxes. Each Borrower and Subsidiary has filed all federal and other material tax returns and other reports that it is required by law to file, and has paid, or made provision for the payment of, all material Taxes upon it, its income and its Properties that are due and payable, except to the extent being Properly Contested. The provision for Taxes on the books of each Borrower and Subsidiary is adequate for all years not closed by applicable statutes and for its current Fiscal Year.

9.1.10. Brokers. There are no brokerage commissions, finder's fees or investment banking fees payable in connection with any transactions contemplated by the Loan Documents.

9.1.11. Intellectual Property. Except as could not reasonably be expected to have a Material Adverse Effect, each Borrower and Subsidiary owns or has the lawful right to use all Intellectual Property necessary for the conduct of its business, without conflict with any rights of others. Except as could not reasonably be expected to have a Material Adverse Effect, there is no pending or, to any Borrower's knowledge, threatened in writing Intellectual Property Claim with respect to any Borrower, any Subsidiary or any of their Property (including any Intellectual Property). Except as disclosed on **Schedule 9.1.11**, no Borrower or Subsidiary pays or owes any royalty or other compensation to any Person with respect to any Intellectual Property in relation to any Eligible Inventory. All registered Intellectual Property owned by any Borrower or Subsidiary as of the Closing Date is shown on **Schedule 9.1.11**.

9.1.12. Governmental Approvals. Except as could not reasonably be expected to have a Material Adverse Effect, each Borrower and Subsidiary has, is in compliance with, and is in good standing with respect to, all Governmental Approvals necessary to conduct its business and to own, lease and operate its Properties. All necessary import, export or other licenses, permits or certificates for the import or handling of any goods or other Collateral have been procured and are in effect, and Borrowers and Subsidiaries have complied with all foreign and domestic laws with respect to the shipment and importation of any goods or Collateral, except where noncompliance could not reasonably be expected to have a Material Adverse Effect.

9.1.13. Compliance with Laws. Each Borrower and Subsidiary has duly complied, and its Properties and business operations are in compliance, in all material respects with all Applicable Law, except where noncompliance could not reasonably be expected to have a Material Adverse Effect. No Inventory has been produced in material violation of the FLSA.

9.1.14. Compliance with Environmental Laws. Except as disclosed on **Schedule 9.1.14** or as could not reasonably be expected to result in a Material Adverse Effect, no Borrower's or Subsidiary's past or present operations, Real Estate or other Properties are subject to any federal, state or local investigation



to determine whether any remedial action is needed to address any environmental pollution, hazardous material or environmental clean-up. Except as disclosed on **Schedule 9.1.14** or as could not reasonably be expected to result in a Material Adverse Effect, no Borrower or Subsidiary has received any Environmental Notice. Except as disclosed on **Schedule 9.1.14** or as could not reasonably be expected to result in a Material Adverse Effect, no Borrower or Subsidiary has any contingent liability with respect to any Environmental Release, environmental pollution or hazardous material on any Real Estate now or previously owned, leased or operated by it.

9.1.15. **Burdensome Contracts.** As of the Closing Date, no Borrower or Subsidiary is party or subject to any Restrictive Agreement, except as shown on **Schedule 9.1.15**. No such Restrictive Agreement prohibits the execution, delivery or performance of any Loan Document by an Obligor.

9.1.16. **Litigation.** Except as shown on **Schedule 9.1.16**, there are no proceedings or investigations pending or, to any Borrower's knowledge, threatened in writing against any Borrower or Subsidiary, or any of their businesses, operations or Properties, that (a) relate to any Loan Documents; or (b) could reasonably be expected to have a Material Adverse Effect if determined adversely to any Borrower or Subsidiary. Except as shown on such Schedule (as amended from time to time in accordance with **Section 7.4.1**), no Obligor has a Commercial Tort Claim (other than a Commercial Tort Claim for less than \$1,000,000). Except as could not reasonably be expected to result in a Material Adverse Effect, no Borrower or Subsidiary is in default with respect to any order, injunction or judgment of any Governmental Authority.

9.1.17. **No Defaults.** No event or circumstance has occurred or exists that constitutes a Default or Event of Default. No Borrower or Subsidiary is in default, and no event or circumstance has occurred or exists that with the passage of time or giving of notice would constitute a default, under any Material Contract (other than a Material Contract related to Debt), except for any such default that could not reasonably be expected to result in a Material Adverse Effect. There is no basis upon which any party (other than a Borrower or Subsidiary) could terminate a Material Contract (other than a Material Contract related to Debt) prior to its scheduled termination date, except for any such termination that could not reasonably be expected to result in a Material Adverse Effect.

9.1.18. **ERISA.** Except as disclosed on **Schedule 9.1.18**:

(a) Except as would not reasonably be expected to result in a Material Adverse Effect, each Plan is in compliance in all material respects with the applicable provisions of ERISA, the Code, and other federal and state laws. Except as would not reasonably be expected to result in a Material Adverse Effect, each Plan that is intended to qualify under Section 401(a) of the Code has received a favorable determination letter from the IRS, is entitled to rely on an opinion letter from the Internal Revenue Service to a prototype plan sponsor or an application for a determination letter is currently being processed by the IRS with respect thereto and, to the knowledge of Borrowers, nothing has occurred which would prevent, or cause the loss of, the qualification of such Plan. Each Obligor and ERISA Affiliate has met all applicable requirements under the Code, ERISA and the Pension Protection Act of 2006, and no application for a waiver of the minimum funding standards or an extension of any amortization has been made with respect to any Pension Plan.

(b) There are no pending or, to the knowledge of Borrowers, threatened claims, actions or lawsuits, or action by any Governmental Authority, with respect to any Plan that could reasonably be expected to have a Material Adverse Effect. There has been no prohibited transaction or violation of the fiduciary responsibility rules with respect to any Plan that has resulted in or could reasonably be expected to have a Material Adverse Effect. No Borrower is or will be using "plan assets" (within the meaning of ERISA Section 3(42)) of one or more Benefit Plans with respect to its entrance into, participation in, administration of and performance of the Loans, Letter of Credits, Commitments or Loan Documents.

(c) No ERISA Event has occurred or is reasonably expected to occur. As of the most recent valuation date for any Pension Plan, the funding target attainment percentage (as defined in Section 430(d)(2) of the Code) is at least 60%, and no Obligor or ERISA Affiliate knows of any reason that such percentage could reasonably be expected to drop below 60%. No Obligor or ERISA Affiliate has incurred any liability to the PBGC except for the payment of premiums, and no premium payments are due and unpaid. No Obligor or ERISA Affiliate has engaged in a transaction that could be subject to Section 4069 or 4212(c) of ERISA. No Pension Plan has been terminated by its plan administrator or the PBGC, and no fact or circumstance exists that could reasonably be expected to cause the PBGC to institute proceedings to terminate a Pension Plan.

(d) With respect to any Foreign Plan, and except as would not reasonably be expected to result in a Material Adverse Effect, (i) all employer and employee contributions required by law or by the terms of the Foreign Plan have been made, or, if applicable, accrued, in accordance with normal accounting practices; (ii) the fair market value of the assets of each funded Foreign Plan, the liability of each insurer for any Foreign Plan funded through insurance, or the book reserve established for any Foreign Plan, together with any accrued contributions, is sufficient to procure or provide for the accrued benefit obligations with respect to all current and former participants in such Foreign Plan according to the actuarial assumptions and valuations most recently used to account for such obligations in accordance with applicable generally accepted accounting principles; and (iii) it has been registered as required and has been maintained in good standing with applicable regulatory authorities.

9.1.19. [Reserved].

9.1.20. Labor Relations. Except as described on **Schedule 9.1.20** or as set forth in a Compliance Certificate delivered to Agent after the Closing Date, no Borrower or Subsidiary is party to or bound by any collective bargaining agreement. Except as could not reasonably be expected to result in a Material Adverse Effect, there are no material grievances, disputes or controversies with any union or other organization of any Borrower's or Subsidiary's employees, or, to any Borrower's knowledge, any asserted or threatened strikes, work stoppages or demands for collective bargaining.

9.1.21. [Reserved].

9.1.22. Not a Regulated Entity. No Obligor is (a) an "investment company" or a "person directly or indirectly controlled by or acting on behalf of an investment company" within the meaning of the Investment Company Act of 1940; or (b) subject to regulation under the Federal Power Act, the Interstate Commerce Act, any public utilities code or any other Applicable Law regarding its authority to incur Debt.

9.1.23. Margin Stock. No Borrower or Subsidiary is engaged, principally or as one of its important activities, in the business of extending credit for the purpose of purchasing or carrying any Margin Stock. No Loan proceeds or Letters of Credit will be used by Borrowers to purchase or carry, or to reduce or refinance any Debt incurred to purchase or carry, any Margin Stock or for any related purpose governed by Regulations T, U or X of the Federal Reserve Board of Governors.

9.1.24. OFAC. No Borrower, Subsidiary, or, to the knowledge of any Borrower, any director, officer, employee, agent, affiliate or representative thereof, is or is owned or controlled by any individual or entity that is currently the target of any Sanction or is located, organized or resident in a Designated Jurisdiction.

**9.2 Complete Disclosure**. No financial statement, material report, material certificate or other written material information furnished by or on behalf of any Borrower or any Subsidiary thereof to Agent or any Lender in connection with the transactions contemplated hereby or delivered hereunder (as modified or supplemented by other written information so furnished), taken together as a whole, contains any untrue

statement of a material fact or omits to state any material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading (as modified or supplemented by other written information so furnished); provided that: (a) no representation is made with respect to projected financial information, estimated financial information and other projected or estimated information, except that such information was prepared in good faith based upon assumptions believed to be reasonable at the time (it being recognized by Agent and Lenders that projections are not to be viewed as facts and that the actual results during the period or periods covered by such projections, many of which are beyond the control of the Borrowers and their Subsidiaries, may vary from such projections and that such difference may be material and that such projections are not a guarantee of financial performance); and (b) no representation is made with respect to information of a general economic or general industry nature. There is no fact or circumstance that any Obligor has failed to disclose to Agent in writing that could reasonably be expected to have a Material Adverse Effect.

## **SECTION 10. COVENANTS AND CONTINUING AGREEMENTS**

**10.1 Affirmative Covenants.** As long as any Commitment or Obligations are outstanding, each Borrower shall, and shall cause each Subsidiary to:

### **10.1.1. Inspections; Appraisals.**

(a) Permit Agent from time to time, subject (unless an Event of Default exists) to reasonable notice and normal business hours, to visit and inspect the Properties of any Borrower or Subsidiary, inspect, audit and make extracts from any Borrower's or Subsidiary's books and records, and discuss with its officers, employees, agents, advisors and independent accountants (provided that representatives of the Borrowers shall be permitted to be present at any discussion with the independent accountants) such Borrower's or Subsidiary's business, financial condition, assets, prospects and results of operations. Lenders may participate in any such visit or inspection, at their own expense. Each Borrower and its Subsidiaries may place reasonable limits on access to information, the disclosure of which is subject to attorney-client or attorney work product privileges and neither any Borrower nor any Subsidiary shall be required to disclose any trade secrets. Secured Parties shall have no duty to any Obligor to make any inspection, nor to share any results of any inspection, appraisal or report with any Obligor. Borrowers acknowledge that all inspections, appraisals and reports are prepared by Agent and Lenders for their purposes, and Borrowers shall not be entitled to rely upon them.

(b) Reimburse Agent for all its reasonable and documented charges, costs and expenses in connection with (i) examinations of Obligors' books and records or any other financial or Collateral matters as it reasonably deems appropriate, up to one (1) time per Loan Year; and (ii) appraisals of Inventory, up to one (1) time per Loan Year; provided, that if an examination or appraisal is initiated during a Trigger Period, all reasonable and documented charges, costs and expenses relating thereto shall be reimbursed by Borrowers without regard to such limits. Borrowers shall pay Agent's then standard charges for examination activities, including charges for its internal examination and appraisal groups, as well as the reasonable and documented charges of any third party used for such purposes. No Borrowing Base calculation shall include Collateral acquired in a Permitted Acquisition until completion of applicable field examinations and appraisals (which shall not be included in the limits provided above) satisfactory to Agent.

**10.1.2. Financial and Other Information.** Keep adequate records and books of account with respect to its business activities, in which proper entries are made in accordance with GAAP in all material respects reflecting all financial transactions; and furnish to Agent and Lenders:

(a) as soon as available, and in any event within 90 days after the close of each Fiscal Year, balance sheets as of the end of such Fiscal Year and the related statements of income, cash flow and shareholders equity for such Fiscal Year, on a consolidated basis for Borrowers and Subsidiaries, which

consolidated statements shall be audited and certified (without any “going concern” or similar qualification, notation or exception (other than a qualification related to the maturity of any Indebtedness within one year from the date such opinion is delivered or actual or prospective breach of any financial covenants) or any qualification as to the scope of such audit) by a “big-4” firm of independent accountants, Grant Thornton, BDO or another firm of independent certified public accountants of recognized standing selected by Borrowers and reasonably acceptable to Agent, and shall set forth in comparative form corresponding figures for the preceding Fiscal Year; provided that Borrowers’ notice to Agent of a public filing with the Securities and Exchange Commission of any required audited financial statements on Form 10-K will satisfy the requirements under this **Section 10.1.2(a)**;

(b) as soon as available, and in any event within 45 days after the end of each Fiscal Quarter, unaudited balance sheets as of the end of such Fiscal Quarter and the related statements of income and cash flow for such Fiscal Quarter and for the portion of the Fiscal Year then elapsed, on a consolidated basis for Borrowers and Subsidiaries, setting forth in comparative form corresponding figures for the preceding Fiscal Year and certified by a Senior Officer of Borrower Agent as prepared in accordance with GAAP in all material respects and fairly presenting in all material respects the financial position and results of operations for such Fiscal Quarter and period, subject to normal year end adjustments and the absence of footnotes; provided that Borrowers’ notice to Agent of a public filing with the Securities and Exchange Commission of any required audited financial statements on Form 10-K or required unaudited financial statements on Form 10-Q, in each case, will satisfy the requirements under this **Section 10.1.2(b)**;

(c) concurrently with delivery of financial statements under clauses (a) and (b) above, a Compliance Certificate executed by the chief financial officer of Borrower Agent;

(d) concurrently with delivery of financial statements under clause (a) above, copies of all management letters and other material reports submitted to Borrowers by their accountants in connection with such financial statements;

(e) not later than (i) 30 days prior to the end of each Fiscal Year, draft projections of Borrowers’ consolidated balance sheets, results of operations and cash flow for the next Fiscal Year, Fiscal Quarter by Fiscal Quarter and (ii) within 10 days after its approval by the board of directors of Borrower, the board approved projections of Borrowers’ consolidated balance sheets, results of operations and cash flow for the next Fiscal Year, Fiscal Quarter by Fiscal Quarter;

(f) at Agent’s request, which shall not be made more frequently than once a month, a listing of each Borrower’s trade payables, specifying the trade creditor and balance due, and a detailed trade payable aging, all in form and substance satisfactory to Agent;

(g) promptly after the sending or filing thereof, copies of any proxy statements, financial statements or reports that any Borrower has made generally available to its shareholders; copies of any regular, periodic and special reports or registration statements or prospectuses that any Borrower files with the Securities and Exchange Commission; and copies of any press releases or other statements made available by a Borrower to the public concerning material changes to or developments in the business of such Borrower; provided, however, that such reports, proxy statements, filings and other materials required to be delivered pursuant to this **Section 10.1.2(d)** shall be deemed delivered for purposes of this Agreement when Borrowers notify Agent that such information is posted to the website of any of the Borrowers or the website of the SEC;

(h) promptly after the sending or filing thereof, copies of any annual report to be filed in connection with each Plan or Foreign Plan; and

(i) such other reports and information (financial or otherwise) as Agent may reasonably request from time to time in connection with any Collateral or any Borrower's, Subsidiary's or other Obligor's financial condition, ownership or business.

10.1.3. Notices. Notify Agent and Lenders in writing, promptly after a Borrower's obtaining knowledge thereof, of any of the following that affects an Obligor: (a) the threat or commencement of any proceeding or investigation, whether or not covered by insurance, if an adverse determination could have a Material Adverse Effect; (b) any pending or threatened labor dispute, strike or walkout, or the expiration of any material labor contract that could reasonably be expected to result in a Material Adverse Effect; (c) any default under or termination of a Material Contract that could reasonably be expected to result in a Material Adverse Effect; (d) the existence of any Default or Event of Default; (e) any judgment in an amount exceeding \$1,000,000; (f) the assertion of any Intellectual Property Claim, if an adverse resolution could have a Material Adverse Effect; (g) any violation or asserted violation of any Applicable Law (including ERISA, OSHA, FLSA, or any Environmental Laws), if an adverse resolution could have a Material Adverse Effect; (h) any Environmental Release by an Obligor or on any Property owned, leased or occupied by an Obligor; or receipt of any Environmental Notice, in each case, that could reasonably be expected to result in a Material Adverse Effect; (i) the occurrence of any ERISA Event that could reasonably be expected to result in a Material Adverse Effect; or (j) the opening of any new place of business by a Borrower at which the Borrower reasonably anticipates maintaining Collateral with an aggregate fair market value in excess of \$1,000,000, at least 30 days (or such later date as Agent may agree) prior to such opening.

10.1.4. Landlord and Storage Agreements. Upon reasonable request, and subject to any applicable confidentiality restrictions, provide Agent with copies of all agreements, between an Obligor and any landlord, warehouseman, processor, shipper, bailee or other Person that owns any premises at which any material Collateral may be kept or that otherwise may possess or handle any material Collateral.

10.1.5. Compliance with Laws. Comply with all Applicable Laws, including ERISA, Environmental Laws, FLSA, OSHA, Anti-Terrorism Laws, and laws regarding collection and payment of Taxes, and maintain all Governmental Approvals necessary to the ownership of its Properties or conduct of its business, unless failure to comply (other than failure to comply with Anti-Terrorism Laws) or maintain could not reasonably be expected to have a Material Adverse Effect. Without limiting the generality of the foregoing, if any Environmental Release occurs at or on any Properties of any Borrower or Subsidiary that could reasonably be expected to result in a Material Adverse Effect, it shall act promptly and diligently to investigate and report to Agent and all appropriate Governmental Authorities the extent of, and to make appropriate remedial action to eliminate, such Environmental Release, whether or not directed to do so by any Governmental Authority.

10.1.6. Taxes. Pay and discharge all material Taxes prior to the date on which they become delinquent or penalties attach, unless such Taxes are being Properly Contested.

10.1.7. Insurance. In addition to the insurance required hereunder with respect to Collateral, maintain insurance with financially sound and reputable insurers, with respect to the Properties and business of Borrowers and Subsidiaries of such type (including product liability, workers' compensation, larceny, embezzlement, or other criminal misappropriation insurance), in such amounts, and with such coverages and deductibles as are customary for companies similarly situated.

10.1.8. Licenses. Keep each License affecting any Collateral (including the manufacture, distribution or disposition of Inventory) or any other material Property of Borrowers and Subsidiaries in full force and effect; promptly notify Agent of any proposed modification to any such License, or entry into any new License, in each case at least 30 days prior to its effective date; pay all royalties and other amounts when due under any License; and notify Agent of any default or breach asserted by any Person to have occurred

under any License, in each case, except as could not reasonably be expected to result in a Material Adverse Effect.

10.1.9. Future Subsidiaries. Promptly notify Agent upon any Person becoming a Subsidiary and, if such Person is not an Excluded Subsidiary, cause it to guaranty the Obligations pursuant to documentation in form reasonably satisfactory to Agent, and to execute and deliver such documents, instruments and agreements and to take such other actions as Agent shall reasonably require to evidence and perfect a Lien in favor of Agent on all assets of such Person that are required to constitute Collateral hereunder, including delivery of such legal opinions, in form and substance reasonably satisfactory to Agent, as it shall deem appropriate.

**10.2 Negative Covenants**. As long as any Commitment or Obligations are outstanding, each Borrower shall not, and shall cause each Subsidiary not to:

10.2.1. Permitted Debt. Create, incur, guarantee or suffer to exist any Debt, except:

- (a) the Obligations;
- (b) Subordinated Debt;
- (c) Permitted Purchase Money Debt;
- (d) existing Borrowed Money not satisfied with the initial Loan proceeds, including without limitation, obligations in respect of the SVB Letter of Credit and the SVB Bank Products;
- (e) Debt with respect to Bank Products incurred in the Ordinary Course of Business;
- (f) Debt that is in existence when a Person becomes a Subsidiary or that is secured by an asset when acquired by a Borrower or Subsidiary, as long as such Debt was not incurred in contemplation of such Person becoming a Subsidiary or such acquisition, and does not exceed \$1,000,000 in the aggregate at any time;
- (g) Permitted Contingent Obligations;
- (h) Refinancing Debt as long as each Refinancing Condition is satisfied;
- (i) unsecured intercompany Debt:
  - (i) owed by any Obligor to another Obligor;
  - (ii) owed by any Obligor to any Subsidiary that is not an Obligor (provided that such Debt shall be subordinated to the Obligations in a manner reasonably satisfactory to Agent);
  - (iii) owed by any Subsidiary that is not an Obligor to any other Subsidiary that is not an Obligor; and
  - (iv) owed by any Subsidiary that is not an Obligor to any Obligor to the extent constituting an Investment permitted hereunder (provided that any such Indebtedness shall be evidenced by a note in form and substance reasonably satisfactory to Agent and shall be pledged and delivered to Agent pursuant to this Agreement)
- (j) Debt under performance bonds, surety bonds, release, appeal and similar bonds, statutory obligations or with respect to workers' compensation claims, in each case incurred in the Ordinary Course of Business, and reimbursement obligations in respect of any of the foregoing;

(k) to the extent constituting Debt, obligations in respect of purchase price adjustments, earn-outs, non-competition agreements, and other similar arrangements, or other deferred payments of a similar nature, representing consideration for a Permitted Acquisition and incurred in connection with any Permitted Acquisition;

(l) customer advances or deposits received in the ordinary course of business;

(m) Indebtedness representing installment insurance premiums owing in the Ordinary Course of Business; and

(n) other Debt up to \$1,000,000 in the aggregate at any time.

10.2.2. Permitted Liens. Create or suffer to exist any Lien upon any of its Property, except the following (collectively, "Permitted Liens"):

(a) Liens in favor of Agent;

(b) Purchase Money Liens securing Permitted Purchase Money Debt;

(c) Liens for Taxes, levies, assessments and other governmental charges or levies not yet due or not yet delinquent or being Properly Contested;

(d) statutory Liens including claims or Liens of materialmen, mechanics, carriers, warehousemen, processors, suppliers, landlords and other similar Liens for labor, materials, supplies or rentals, and other similar amounts (other than Liens for Taxes or imposed under ERISA) which: (i) are not overdue for a period of more than thirty (30) days, or if more than thirty (30) days overdue, no action has been taken to enforce such Liens and such Liens are being Properly Contested; and (ii) do not, individually or in the aggregate, materially impair the use thereof in the operation of the business of the Borrower or any of its Subsidiaries;

(e) (i) Liens incurred or deposits made in the Ordinary Course of Business in connection with or to secure the performance of bids, trade and commercial contracts and leases and the payment of rent (other than Indebtedness), statutory obligations, surety bonds (other than bonds related to judgments or litigation), performance bonds, government tenders, bids, contracts, statutory obligations and other similar obligations incurred in the Ordinary Course of Business (including workers' compensation, unemployment insurance and other types of social security or similar legislation) and (ii) deposits or pledges in respect of letters of credit, bank guarantees, or similar instruments that have been posted in the ordinary course of business of any Borrower or any Subsidiary, in each case, so long as no foreclosure sale or similar proceeding has been commenced with respect to any portion of the Collateral on account thereof;

(f) Liens arising in the Ordinary Course of Business that are subject to Lien Waivers;

(g) Liens arising by virtue of a judgment or judicial order against any Borrower or Subsidiary, or any Property of a Borrower or Subsidiary, as long as such Liens are in existence for less than 30 consecutive days or being Properly Contested;

(h) easements, rights-of-way, restrictions, covenants or other agreements of record, and other similar charges or encumbrances on Real Estate, that do not secure any monetary obligation and do not interfere with the Ordinary Course of Business;

(i) normal and customary statutory and common law Liens and rights of setoff and recoupment upon deposits in favor of depository institutions, and Liens of a collecting bank on Payment Items in the course of collection;

(j) Liens arising from the filing of precautionary UCC financing statements relating solely to personal property leased pursuant to operating leases entered into in the Ordinary Course of Business of the Borrowers and their Subsidiaries;

(k) contractual or statutory Liens of landlords to the extent relating to the property and assets relating to any lease agreements with such landlord; and (ii) contractual Liens of suppliers (including sellers of goods) or customers granted in the Ordinary Course of Business to the extent limited to the property or assets relating to such contract;

(l) any interest or title of a licensor, sublicensor, lessor or sublessor with respect to any assets under any inbound license or lease agreement entered into by any Borrower or any Subsidiary in the Ordinary Course of Business and not prohibited by this Agreement;

(m) any license, sublicense, lease, or sublease granted by the Borrower or any Subsidiary to third parties in the ordinary course of its business and in accordance with any applicable terms of the Security Documents which do not: (i) interfere in any material respect with the ordinary conduct of the business of the Borrower or its Subsidiaries or materially detract from the value of the relevant assets of the Borrower or its Subsidiaries; or (ii) secure any Indebtedness;

(n) to the extent constituting Liens, any option or other agreement to purchase any asset of any Borrower or any of its Subsidiaries, the disposition of which is expressly permitted under this Agreement;

(o) reasonable customary initial deposits and margin deposits to the extent required by Applicable Law, which secure Debt under Bank Products;

(p) Liens solely on any cash earnest money deposits or escrow arrangements made by any Borrower or any Subsidiary in connection with any letter of intent or purchase or merger agreement for any Acquisition permitted under this Agreement;

(q) Liens in the nature of: (i) customary setoff rights in favor of any counterparty to any Swaps expressly permitted under this Agreement, and (ii) setoff rights granted to third parties pursuant to trade and other similar contracts with any Borrower or any Subsidiary and limited to payments owed to any Borrower or any Subsidiary under such contracts that do not constitute Debt;

(r) Liens on insurance policies and the proceeds thereof securing the financing of the premiums with respect thereto, so long as no foreclosure sale or similar proceeding has been commenced with respect to any portion of the Collateral on account thereof;

(s) Liens on assets (other than Eligible Accounts and Eligible Inventory then included in the Borrowing Base) acquired in a Permitted Acquisition, securing Debt permitted by **Section 10.2.1(f)**;

(t) existing Liens shown on **Schedule 10.2.2** and the replacement, renewal or extension thereof (including Liens incurred, assumed or suffered to exist in connection with any refinancing, refunding, renewal or extension of Debt pursuant to **Section 10.2.1(h)** (solely to the extent that such Liens were in existence on the Closing Date); provided that the scope of any such Lien shall not be increased, or otherwise expanded, to cover any additional property or type of asset, as applicable, beyond that in existence on the Closing Date, except for products and proceeds of the foregoing; and

(u) other Liens (not attaching to Accounts or Inventory) securing amounts not in excess of \$1,000,000 at any one time outstanding.

10.2.3. Reserved.



10.2.4. Distributions. Declare or make any Distributions, except Upstream Payments and Permitted Distributions.

10.2.5. Restricted Investments. Make any Restricted Investment.

10.2.6. Disposition of Assets. Make any Asset Disposition, except a Permitted Asset Disposition, a disposition of Equipment under **Section 8.4.2**, or a transfer of Property by a Subsidiary or Obligor to an Obligor or by a Subsidiary that is not an Obligor to any other Subsidiary that is not an Obligor.

10.2.7. [Reserved].

10.2.8. Restrictions on Payment of Certain Debt. Make any payments (whether voluntary or mandatory, or a prepayment, redemption, retirement, defeasance or acquisition) with respect to any (i) Subordinated Debt (except regularly scheduled payments of principal, interest and fees, but only to the extent permitted under any subordination agreement relating to such Debt (and a Senior Officer of Borrower Agent shall certify to Agent, on or prior to the date of payment, that all conditions under such agreement have been satisfied)), or (ii) Borrowed Money (other than the Obligations) prior to its due date under the agreements evidencing such Debt (except in the case of a refinancing with Refinancing Debt if the Refinancing Conditions are satisfied), unless the Payment Conditions are satisfied with respect to each such payment on Borrowed Money.

10.2.9. Fundamental Changes. (i) Change its name or its form or state of organization without 30 days (or such later date as may be agreed by Agent) prior written notice to Agent; or (ii) liquidate, wind up its affairs or dissolve itself; consummate a statutory division; or merge, combine or consolidate with any Person, whether in a single transaction or in a series of related transactions, except for (a) any Subsidiary of a Borrower may be merged, amalgamated, or consolidated with or into, or be dissolved or liquidated into, a Borrower (provided that a Borrower shall be the continuing or surviving entity); (b) any Subsidiary of a Borrower (other than a Borrower) may be merged, amalgamated, or consolidated with or into, or be dissolved or liquidated into, any Guarantor (provided that a Guarantor shall be the continuing or surviving entity); (c) Permitted Acquisitions; (d) any Subsidiary that is not an Obligor may be merged, amalgamated or consolidated with or into, or be dissolved or liquidated into, any other Subsidiary that is not an Obligor; (e) any Subsidiary may dispose of all or substantially all of its assets (upon voluntary liquidation, division, dissolution, winding up or otherwise) to any Obligor, or any Subsidiary that will become an Obligor substantially concurrently with such transaction; and (f) any Subsidiary that is not an Obligor may dispose of all or substantially all of its assets (upon voluntary liquidation, division, dissolution, winding up or otherwise) to any other Subsidiary that is not an Obligor.

10.2.10. Subsidiaries. Form or acquire any Subsidiary after the Closing Date, except in compliance with **Sections 10.1.9, 10.2.5 and 10.2.9**.

10.2.11. Organic Documents. Amend, modify or otherwise change any of its Organic Documents, except as would not be materially adverse to the interests of Lenders.

10.2.12. Tax Consolidation. File or consent to the filing of any consolidated income tax return with any Person other than Borrowers and Subsidiaries.

10.2.13. Accounting Changes. Make any material change in accounting treatment or reporting practices, except in accordance with **Section 1.2**; or change its Fiscal Year (provided that the Fiscal Year of any Subsidiary of Calix may be changed to match the Fiscal Year of Calix).

10.2.14. Restrictive Agreements. Become a party to any Restrictive Agreement, except a Restrictive Agreement (a) in effect on the Closing Date (and any amendment, modification, or extension thereof that does not expand the scope of any such restriction or requirement and is not more adverse to the

rights or interests of the Lenders than such restriction or requirement in effect prior to such amendment, modification, or extension); (b) relating to secured Debt permitted hereunder, as long as the restrictions apply only to collateral for such Debt; (c) relating to any other Debt permitted hereby, so long as the restrictions are no more restrictive, taken as a whole, than the Loan Documents; (d) constituting customary restrictions on assignment in leases, licenses and other contracts; (e) customary provisions in joint venture agreements and other similar agreements applicable to joint ventures permitted hereunder and applicable solely to such joint venture and customary restrictions on the transfer of Equity Interests in any joint venture; (f) pursuant to any agreement, document, or instrument of any Subsidiary imposing restrictions or requirements with respect to any Property in existence at the time such Subsidiary or Property was acquired, so long as such restrictions or requirements are not entered into in contemplation of such Person becoming a Subsidiary or the acquisition of such Property (and any amendment, modification, or extension thereof that does not expand the scope of any such restriction or requirement and is not more adverse to the rights or interests of the Lenders than such restriction or requirement in effect prior to such amendment, modification, or extension); (g) customary restrictions and conditions contained in an agreement related to the sale or other disposition of any Property permitted hereunder that limit the transfer of such Property pending the consummation of such sale or disposition, solely as to Property being sold or disposed of; and (h) customary restrictions contained in the organizational documents of any Subsidiary that is not an Obligor or in any other agreement of any Subsidiary that is not an Obligor that applies solely to Subsidiaries that are not Obligors.

10.2.15. Swaps. Enter into any Swap, except to hedge risks arising in the Ordinary Course of Business and not for speculative purposes.

10.2.16. Conduct of Business. Engage in any business, other than its business as conducted on the Closing Date and any business activities reasonably related, incidental, complementary, or ancillary thereto.

10.2.17. Affiliate Transactions. Enter into or be party to any transaction with an Affiliate, except (a) transactions expressly permitted by the Loan Documents; (b) employment, severance, and other similar compensation arrangements (including equity incentive plans and employee benefit plans and arrangements) with their respective directors, officers, and employees in the Ordinary Course of Business; (c) payment of customary fees and reasonable out of pocket costs to, and indemnities for the benefit of, directors, officers and employees of the Borrowers and their Subsidiaries in the Ordinary Course of Business to the extent attributable to the ownership or operation of the Borrowers and their Subsidiaries; (d) transactions solely among Obligors and their Subsidiaries to the extent not otherwise prohibited under this Agreement; (e) transactions with Affiliates consummated prior to the Closing Date, as shown on **Schedule 10.2.17**; and (f) transactions with Affiliates upon fair and reasonable terms no less favorable than would be obtained in a comparable arm's-length transaction with a non-Affiliate (as determined in good faith by Borrower Agent).

10.2.18. Post-Closing Date Requirements. Borrowers shall deliver to Agent each of the following within the specified time period, each in form and substance satisfactory to Agent in its Permitted Discretion:

(a) Insurance Endorsements. By no later than 45 days after the Closing Date (or such later date as determined by Agent), Borrowers shall deliver to Agent insurance endorsements as required under **Section 8.6.2**.

10.2.19. Amendments to Subordinated Debt. Amend, supplement or otherwise modify any document, instrument or agreement relating to any Subordinated Debt, if such modification would not be permitted by the terms of the subordination agreement applicable thereto.

**10.3 Financial Covenants**. As long as any Commitment or Obligations are outstanding, Borrowers shall:

10.3.1. Liquidity. Maintain the sum of (a) Liquidity and (b) Availability in an aggregate amount not less than \$25,000,000, of which at least \$5,000,000 shall consist of Availability. Such covenant shall be measured monthly as of the last day of each month, until Borrowers achieve a Fixed Charge Coverage Ratio of at least 1.00:1.00 for the Fiscal Quarter ending December 31, 2019 or thereafter for a period of two (2) consecutive Fiscal Quarters.

10.3.2. Fixed Charge Coverage Ratio. Commencing with the last day of the Fiscal Quarter ending immediately after the Liquidity covenant set forth in **Section 10.3.1** above is last measured (such date shall be referred to herein as the “Start Date”), at any time that a Financial Covenant Trigger Period is in effect, measured for the most recent period for which financial statements were delivered hereunder prior to the Financial Covenant Trigger Period and each period ending thereafter until the Financial Covenant Trigger Period is no longer in effect, maintain a Fixed Charge Coverage Ratio as of the last day of each Fiscal Quarter ending during a Financial Covenant Trigger Period of at least 1.00:1.00.

## **SECTION 11. EVENTS OF DEFAULT; REMEDIES ON DEFAULT**

**11.1 Events of Default.** Each of the following shall be an “Event of Default” if it occurs for any reason whatsoever, whether voluntary or involuntary, by operation of law or otherwise:

(a) Any Borrower (i) fails to pay the principal of any Loan when due (whether at stated maturity, on demand, upon acceleration or otherwise) or (ii) fails to pay any other Obligation when due (whether at stated maturity, on demand, upon acceleration or otherwise) and such failure continues for a period of three Business Days;

(b) Any representation, warranty or other written statement of fact of an Obligor made in connection with any Loan Documents is incorrect or misleading in any material respect when given;

(c) A Borrower breaches or fail to perform any covenant contained in **Section 8.1, 8.2.4, 8.2.5, 10.1.1(a), 10.1.2 (other than clauses (d), (g) and (h)), 10.2 or 10.3;**

(d) An Obligor breaches or fails to perform any other covenant (other than those contemplated by clauses (a), (b) and (c) above) contained in any Loan Documents, and such breach or failure is not cured within 30 days (or in the case of a breach or failure of Section 8.6.2, 5 Business Days) after a Senior Officer of such Obligor has knowledge thereof or receives notice thereof from Agent, whichever is sooner;

(e) A Guarantor repudiates, revokes or attempts to revoke, in writing, its Guaranty; an Obligor denies or contests in writing the validity or enforceability of any Loan Documents or Obligations, or the perfection or priority of any Lien granted to Agent on any material portion of the Collateral; or any material provision of any Loan Document ceases to be in full force or effect for any reason (in each case in this clause (e), other than pursuant to the terms of the Loan Documents or a waiver or release by Agent and Lenders);

(f) Any Borrower or Subsidiary shall default under (i) any Swap; or (ii) any instrument or agreement to which it is a party relating to any Debt (other than the Obligations), in either case with an aggregate outstanding principal amount (or Swap Termination Value, as applicable) in excess of \$5,000,000, if the maturity of or any payment with respect to such Debt may be accelerated or demanded due to such breach (with any applicable grace period having expired); provided that this clause (g) shall not apply to: (A) secured Debt that becomes due as a result of the voluntary sale or transfer of the property or assets securing such Debt, if such sale or transfer is permitted hereunder and under the documents providing for such Debt; or (B) Debt of a Person acquired in connection with a Permitted Acquisition that has become due and payable as a result of such Acquisition;

(g) Any judgment or order for the payment of money is entered against an Obligor in an amount that exceeds, individually or cumulatively with all unsatisfied judgments or orders against all Obligors,

\$5,000,000 (net of insurance coverage therefor that has not been denied by the insurer), and continues without having been discharged, vacated or stayed for a period of 30 consecutive days;

(h) [Reserved];

(i) An Obligor is enjoined, restrained or in any way prevented by any Governmental Authority from conducting any material part of its business;

(j) An Insolvency Proceeding is commenced by an Obligor; an Obligor makes an offer of settlement, extension or composition to its unsecured creditors generally; a trustee is appointed to take possession of any substantial Property of or to operate any of the business of an Obligor; or an Insolvency Proceeding is commenced against an Obligor and: the Obligor consents to institution of the proceeding, the petition commencing the proceeding is not timely contested by the Obligor, the petition is not dismissed within 60 days after filing, or an order for relief is entered in the proceeding;

(k) An ERISA Event occurs with respect to a Pension Plan or Multiemployer Plan that has resulted or could reasonably be expected to result in liability of an Obligor to a Pension Plan, Multiemployer Plan or PBGC, or that constitutes grounds for appointment of a trustee for or termination by the PBGC of any Pension Plan or Multiemployer Plan; an Obligor or ERISA Affiliate fails to pay when due any installment payment with respect to its withdrawal liability under Section 4201 of ERISA under a Multiemployer Plan; or any event similar to the foregoing occurs or exists with respect to a Foreign Plan, in each case, which could reasonably be expected to result in a Material Adverse Effect;

(l) An Obligor or any of its Senior Officers is criminally convicted (i) of a felony committed in and related to, the conduct of the Obligor's business and in the case of a Senior Officer, such Senior officer is not removed from his job duties within 30 days of such conviction or (ii) of violating any state or federal law (including the Controlled Substances Act, money Laundering Act of 1986 and Illegal Exportation of War Materials Act), in each case, that would reasonably be expected to lead to forfeiture of any material portion of the Collateral; or

(m) A Change of Control occurs.

**11.2 Remedies upon Default.** If an Event of Default described in **Section 11.1(j)** occurs with respect to any Borrower, then to the extent permitted by Applicable Law, all Obligations (including Secured Bank Product Obligations only to the extent provided in applicable agreements) shall become automatically due and payable and all Commitments shall terminate, without any action by Agent or notice of any kind. In addition, or if any other Event of Default exists and is continuing, Agent may in its discretion (and shall upon written direction of Required Lenders) do any one or more of the following from time to time:

(a) declare any Obligations (other than Secured Bank Product Obligations) immediately due and payable, whereupon they shall be due and payable without diligence, presentment, demand, protest or notice of any kind, all of which are hereby waived by Borrowers to the fullest extent permitted by law;

(b) terminate, reduce or condition any Commitment or adjust the Borrowing Base;

(c) require Obligors to Cash Collateralize their LC Obligations, and if Obligors fail to deposit such Cash Collateral, Agent may (and shall upon the direction of Required Lenders) advance the required Cash Collateral as Loans (whether or not an Overadvance exists or is created thereby, or the conditions in Section 6 are satisfied); and

(d) exercise any other rights or remedies afforded under any agreement, by law, at equity or otherwise, including the rights and remedies of a secured party under the UCC. Such rights and remedies include the rights to (i) take possession of any Collateral; (ii) require Borrowers to assemble Collateral, at Borrowers' expense, and make it available to Agent at a place designated by Agent; (iii) enter any premises

where Collateral is located and store Collateral on such premises until sold (and if the premises are owned or leased by a Borrower, Borrowers agree not to charge for such storage); and (iv) sell or otherwise dispose of any Collateral in its then condition, or after any further manufacturing or processing thereof, at public or private sale, with such notice as may be required by Applicable Law, in lots or in bulk, at such locations, all as Agent, in its discretion, deems advisable. Each Borrower agrees that 10 days' notice of any proposed sale or other disposition of Collateral by Agent shall be reasonable, and that any sale conducted on the internet or to a licensor of Intellectual Property shall not be deemed to be commercially unreasonable solely due to being so conducted. Agent may conduct sales on any Obligor's premises, without charge, and any sale may be adjourned from time to time in accordance with Applicable Law. Agent shall have the right to sell, lease or otherwise dispose of any Collateral for cash, credit or any combination thereof, and Agent may purchase any Collateral at public or, if permitted by law, private sale and, in lieu of actual payment of the purchase price, may credit bid and set off the amount of such price against the Obligations.

**11.3 License.** Agent is hereby granted an irrevocable, non-exclusive license or other right to use, license or sub-license (without payment of royalty or other compensation to any Person) any or all Intellectual Property of Borrowers, computer hardware and software, trade secrets, brochures, customer lists, promotional and advertising materials, labels, packaging materials and other Property, in each case, that constitutes Collateral, in advertising for sale, marketing, selling, collecting, completing manufacture of, or otherwise exercising any rights or remedies with respect to, any Collateral after the occurrence and during the continuance of an Event of Default. Each Borrower's rights and interests under Intellectual Property shall inure to Agent's benefit.

**11.4 Setoff.** At any time during an Event of Default, Agent, Issuing Bank, Lenders, and any of their Affiliates are authorized, to the fullest extent permitted by Applicable Law, to set off and apply any and all deposits (general or special, time or demand, provisional or final, in whatever currency) at any time held and other obligations (in whatever currency) at any time owing by Agent, Issuing Bank, such Lender or such Affiliate to or for the credit or the account of an Obligor against its Obligations, whether or not Agent, Issuing Bank, such Lender or such Affiliate shall have made any demand under this Agreement or any other Loan Document and although such Obligations may be contingent or unmatured or are owed to a branch or office of Agent, Issuing Bank, such Lender or such Affiliate different from the branch or office holding such deposit or obligated on such indebtedness. The rights of Agent, Issuing Bank, each Lender and each such Affiliate under this Section are in addition to other rights and remedies (including other rights of setoff) that such Person may have.

**11.5 Remedies Cumulative; No Waiver**

11.5.1. **Cumulative Rights.** All agreements, warranties, guaranties, indemnities and other undertakings of Obligors under the Loan Documents are cumulative and not in derogation of each other. The rights and remedies of Agent, Issuing Bank and Lenders under the Loan Documents are cumulative, may be exercised at any time and from time to time, concurrently or in any order, and are not exclusive of any other rights or remedies available by agreement, by law, at equity or otherwise. All such rights and remedies shall continue in full force and effect until Full Payment of all Obligations.

11.5.2. **Waivers.** No waiver or course of dealing shall be established by (a) the failure or delay of Agent, Issuing Bank or any Lender to require strict performance by any Obligor under any Loan Document, or to exercise any rights or remedies with respect to Collateral or otherwise; (b) the making of any Loan or issuance of any Letter of Credit during a Default, Event of Default or other failure to satisfy any conditions precedent; or (c) acceptance by Agent, Issuing Bank or any Lender of any payment or performance by an Obligor under any Loan Documents in a manner other than that specified therein. Any failure to satisfy a financial covenant on a measurement date shall not be cured or remedied by satisfaction of such covenant on a subsequent date.

## SECTION 12. AGENT

### 12.1 Appointment, Authority and Duties of Agent

12.1.1. Appointment and Authority. Each Secured Party appoints and designates Bank of America as Agent under all Loan Documents. Agent may, and each Secured Party authorizes Agent to, enter into all Loan Documents to which Agent is intended to be a party and accept all Security Documents. Any action taken by Agent in accordance with the provisions of the Loan Documents, and the exercise by Agent of any rights or remedies set forth therein, together with all other powers reasonably incidental thereto, shall be authorized by and binding upon all Secured Parties. Without limiting the generality of the foregoing, Agent shall have the sole and exclusive authority to, in accordance with the Loan Documents, (a) act as the disbursing and collecting agent for Lenders with respect to all payments and collections arising in connection with the Loan Documents; (b) execute and deliver as Agent each Loan Document, including any intercreditor or subordination agreement, and accept delivery of each Loan Document; (c) act as collateral agent for Secured Parties for purposes of perfecting and administering Liens under the Loan Documents, and for all other purposes stated therein; (d) manage, supervise or otherwise deal with Collateral; and (e) take any Enforcement Action or otherwise exercise any rights or remedies with respect to any Collateral or under any Loan Documents, Applicable Law or otherwise. Agent alone is authorized to determine eligibility and applicable advance rates under the Borrowing Base, whether to impose or release any reserve, or whether any conditions to funding or issuance of a Letter of Credit have been satisfied, which determinations and judgments, if exercised in good faith, shall exonerate Agent from liability to any Secured Party for any error in judgment.

12.1.2. Duties. The title of “Agent” is used solely as a matter of market custom and the duties of Agent are administrative in nature only. Agent has no duties except those expressly set forth in the Loan Documents, and in no event does Agent have any agency, fiduciary or implied duty to or relationship with any Secured Party or other Person by reason of any Loan Document or related transaction. The conferral upon Agent of any right shall not imply a duty to exercise such right, unless instructed to do so by Lenders in accordance with this Agreement.

12.1.3. Agent Professionals. Agent may perform its duties through employees and agents. Agent may consult with and employ Agent Professionals, and shall be entitled to act upon, and shall be fully protected in any action taken in good faith reliance upon, any advice given by an Agent Professional. Agent shall not be responsible for the negligence or misconduct of any agents, employees or Agent Professionals selected by it with reasonable care.

12.1.4. Instructions of Required Lenders. The rights and remedies conferred upon Agent under the Loan Documents may be exercised without the necessity of joining any other party, unless required by Applicable Law. In determining compliance with a condition for any action hereunder, including satisfaction of any condition in **Section 6**, Agent may presume that the condition is satisfactory to a Secured Party unless Agent has received notice to the contrary from such Secured Party before Agent takes the action. Agent may request instructions from Required Lenders or other Secured Parties with respect to any act (including the failure to act) in connection with any Loan Documents or Collateral, and may seek assurances to its satisfaction from Secured Parties of their indemnification obligations against Claims that could be incurred by Agent. Agent may refrain from any act until it has received such instructions or assurances, and shall not incur liability to any Person by reason of so refraining. Instructions of Required Lenders shall be binding upon all Secured Parties, and no Secured Party shall have any right of action whatsoever against Agent as a result of Agent acting or refraining from acting pursuant to instructions of Required Lenders. Notwithstanding the foregoing, instructions by and consent of specific parties shall be required to the extent provided in **Section 14.1.1**. In no event shall Agent be required to take any action that it determines in its

discretion is contrary to Applicable Law or any Loan Documents or could subject any Agent Indemnitee to liability.

## **12.2 Agreements Regarding Collateral and Borrower Materials**

12.2.1. Lien Releases; Care of Collateral. Secured Parties authorize Agent to release any Lien on any Collateral (a) upon Full Payment of the Obligations; (b) that is the subject of a disposition or Lien that is a Permitted Asset Disposition or a Permitted Lien entitled to priority over Agent's Liens (and Agent may rely conclusively on a certificate of the Borrower Agent to such effect without further inquiry); (c) that does not constitute a material part of the Collateral; (d) that is owned by an Obligor that is released from its obligations under the Loan Documents in accordance with the terms of the Loan Documents; or (d) subject to **Section 14.1**, with the consent of Required Lenders. Secured Parties authorize Agent to subordinate its Liens to any Purchase Money Lien or other Lien entitled to priority hereunder. Secured Parties authorize Agent to release any Obligor from its obligations under the Loan Documents if such Person is no longer required to be an Obligor as a result of a transaction permitted under the Loan Documents. Agent has no obligation to assure that any Collateral exists or is owned by an Obligor, or is cared for, protected or insured, nor to assure that Agent's Liens have been properly created, perfected or enforced, or are entitled to any particular priority, nor to exercise any duty of care with respect to any Collateral.

12.2.2. Possession of Collateral. Agent and Secured Parties appoint each Secured Party as agent (for the benefit of Secured Parties) for the purpose of perfecting Liens in Collateral held or controlled by it, to the extent such Liens are perfected by possession or control. If a Secured Party obtains possession or control of any Collateral, it shall notify Agent thereof and, promptly upon Agent's request, deliver such Collateral to Agent or otherwise deal with it in accordance with Agent's instructions.

12.2.3. Reports. Agent shall promptly provide to Lenders, when complete, any field examination, audit or appraisal report prepared for Agent with respect to any Obligor or Collateral ("Report"). Reports and Borrower Materials may be made available to Lenders by providing access to them on the Platform, but Agent shall not be responsible for system failures or access issues that may occur from time to time. Each Lender agrees (a) that Reports are not intended to be comprehensive audits or examinations, and that Agent or any other Person performing an audit or examination will inspect only limited information and will rely significantly upon Borrowers' books, records and representations; (b) that Agent makes no representation or warranty as to the accuracy or completeness of any Report or Borrower Materials and shall not be liable for any information contained in or omitted from any Report or Borrower Materials, including any Report; and (c) to keep all Reports and Borrower Materials confidential and strictly for such Lender's internal use, not to distribute any Report or Borrower Materials (or the contents thereof) to any Person (except to such Lender's Participants, attorneys and accountants), and to use all Reports and Borrower Materials solely for administration of the Obligations. Each Lender shall indemnify and hold harmless Agent and any other Person preparing a Report from any action such Lender may take as a result of or any conclusion it may draw from any Report or Borrower Materials, as well as from any Claims arising as a direct or indirect result of Agent furnishing same to such Lender, via the Platform or otherwise.

**12.3 Reliance By Agent**. Agent shall be entitled to rely, and shall be fully protected in relying, upon any certification, notice or other communication (including those by telephone, telex, telegram, telecopy, e-mail or other electronic means) believed by it to be genuine and correct and to have been signed, sent or made by the proper Person. Agent shall have a reasonable and practicable amount of time to act upon any instruction, notice or other communication under any Loan Document, and shall not be liable for any delay in acting.

**12.4 Action Upon Default**. Agent shall not be deemed to have knowledge of any Default or Event of Default, or of any failure to satisfy any conditions in **Section 6**, unless it has received written notice from a Borrower or Required Lenders specifying the occurrence and nature thereof. If a Lender acquires

knowledge of a Default, Event of Default or failure of such conditions, it shall promptly notify Agent and the other Lenders thereof in writing. Each Secured Party agrees that, except as otherwise provided in any Loan Documents or with the written consent of Agent and Required Lenders, it will not take any Enforcement Action, accelerate Obligations (other than Secured Bank Product Obligations) or assert any rights relating to any Collateral.

**12.5 Ratable Sharing.** If any Lender obtains any payment or reduction of any Obligation, whether through set-off or otherwise, in excess of its ratable share of such Obligation, such Lender shall forthwith purchase from Secured Parties participations in the affected Obligation as are necessary to share the excess payment or reduction on a Pro Rata basis or in accordance with **Section 5.5.2**, as applicable. If any of such payment or reduction is thereafter recovered from the purchasing Lender, the purchase shall be rescinded and the purchase price restored to the extent of such recovery, but without interest. Notwithstanding the foregoing, if a Defaulting Lender obtains a payment or reduction of any Obligation, it shall immediately turn over the full amount thereof to Agent for application under **Section 4.2.2** and it shall provide a written statement to Agent describing the Obligation affected by such payment or reduction. No Lender shall set off against a Dominion Account without Agent's prior consent.

**12.6 Indemnification.** EACH SECURED PARTY SHALL INDEMNIFY AND HOLD HARMLESS AGENT INDEMNITEES AND ISSUING BANK INDEMNITEES, TO THE EXTENT NOT REIMBURSED BY OBLIGORS, ON A PRO RATA BASIS, AGAINST ALL CLAIMS THAT MAY BE INCURRED BY OR ASSERTED AGAINST ANY SUCH INDEMNITEE, PROVIDED THAT ANY CLAIM AGAINST AN AGENT INDEMNITEE RELATES TO OR ARISES FROM ITS ACTING AS OR FOR AGENT (IN THE CAPACITY OF AGENT). In Agent's discretion, it may reserve for any Claims made against an Agent Indemnitee or Issuing Bank Indemnitee, and may satisfy any judgment, order or settlement relating thereto, from proceeds of Collateral prior to making any distribution of Collateral proceeds to Secured Parties. If Agent is sued by any receiver, trustee or other Person for any alleged preference or fraudulent transfer, then any monies paid by Agent in settlement or satisfaction of such proceeding, together with all interest, costs and expenses (including attorneys' fees) incurred in the defense of same, shall be promptly reimbursed to Agent by each Secured Party to the extent of its Pro Rata share.

**12.7 Limitation on Responsibilities of Agent.** Agent shall not be liable to any Secured Party for any action taken or omitted to be taken under the Loan Documents, except for losses directly and solely caused by Agent's bad faith, gross negligence or willful misconduct or to the extent determined in a non-appealable judgment by a court of competent jurisdiction, a material breach of the Loan Documents. Agent does not assume any responsibility for any failure or delay in performance or any breach by any Obligor, Lender or other Secured Party of any obligations under the Loan Documents. Agent does not make any express or implied representation, warranty or guarantee to Secured Parties with respect to any Obligations, Collateral, Liens, Loan Documents or Obligor. No Agent Indemnitee shall be responsible to Secured Parties for any recitals, statements, information, representations or warranties contained in any Loan Documents, Reports or Borrower Materials; the execution, validity, genuineness, effectiveness or enforceability of any Loan Documents; the genuineness, enforceability, collectability, value, sufficiency, location or existence of any Collateral, or the validity, extent, perfection or priority of any Lien therein; the validity, enforceability or collectability of any Obligations; or the assets, liabilities, financial condition, results of operations, business, creditworthiness or legal status of any Obligor or Account Debtor. No Agent Indemnitee shall have any obligation to any Secured Party to ascertain or inquire into the existence of any Default or Event of Default, the observance by any Obligor of any terms of the Loan Documents, or the satisfaction of any conditions precedent contained in any Loan Documents.



## **12.8 Successor Agent and Co-Agents**

12.8.1. Resignation; Successor Agent. Agent may resign at any time by giving at least 30 days written notice thereof to Lenders and Borrowers. Required Lenders may, with the consent of the Borrowers (provided no Event of Default exists and is continuing), appoint a successor that is (a) a Lender or Affiliate of a Lender; or (b) another financial institution reasonably acceptable to Required Lenders. If no successor is appointed by the effective date of Agent's resignation, then on such date, Agent may, with the consent of the Borrowers (provided no Event of Default exists and is continuing), appoint a successor acceptable to it in its discretion (which shall be a Lender unless no Lender accepts the role) or, in the absence of such appointment, Required Lenders shall automatically assume all rights and duties of Agent. The successor Agent shall thereupon succeed to and become vested with all the powers and duties of the retiring Agent without further act. The retiring Agent shall be discharged from its duties hereunder on the effective date of its resignation, but shall continue to have all rights and protections available to Agent under the Loan Documents with respect to actions, omissions, circumstances or Claims relating to or arising while it was acting or transferring responsibilities as Agent or holding any Collateral on behalf of Secured Parties, including indemnification under **Sections 12.6** and **14.2**, and all rights and protections under this **Section 12**. Any successor to Bank of America by merger or acquisition of stock shall continue to be Agent hereunder without further act on the part of any Secured Party or Obligor.

12.8.2. Co-Collateral Agent. If appropriate under Applicable Law, Agent may appoint a Person to serve as a co-collateral agent or separate collateral agent under any Loan Document. Each right, remedy and protection intended to be available to Agent under the Loan Documents shall also be vested in such agent. Secured Parties shall execute and deliver any instrument or agreement that Agent may request to effect such appointment. If any such agent shall die, dissolve, become incapable of acting, resign or be removed, then all the rights and remedies of the agent, to the extent permitted by Applicable Law, shall vest in and be exercised by Agent until appointment of a new agent.

**12.9 Due Diligence and Non-Reliance.** Each Lender acknowledges and agrees that it has, independently and without reliance upon Agent or any other Lenders, and based upon such documents, information and analyses as it has deemed appropriate, made its own credit analysis of each Obligor and its own decision to enter into this Agreement and to fund Loans and participate in LC Obligations hereunder. Each Secured Party has made such inquiries as it feels necessary concerning the Loan Documents, Collateral and Obligors. Each Secured Party acknowledges and agrees that the other Secured Parties have made no representations or warranties concerning any Obligor, any Collateral or the legality, validity, sufficiency or enforceability of any Loan Documents or Obligations. Each Secured Party will, independently and without reliance upon any other Secured Party, and based upon such financial statements, documents and information as it deems appropriate at the time, continue to make and rely upon its own credit decisions in making Loans and participating in LC Obligations, and in taking or refraining from any action under any Loan Documents. Except for notices, reports and other information expressly requested by a Lender, Agent shall have no duty or responsibility to provide any Secured Party with any notices, reports or certificates furnished to Agent by any Obligor or any credit or other information concerning the affairs, financial condition, business or Properties of any Obligor (or any of its Affiliates) which may come into possession of Agent or its Affiliates.

## **12.10 Remittance of Payments and Collections**

12.10.1. Remittances Generally. Payments by any Secured Party to Agent shall be made by the time and date provided herein, in immediately available funds. If no time for payment is specified or if payment is due on demand and request for payment is made by Agent by 1:00 p.m. on a Business Day, then payment shall be made by the Secured Party by 3:00 p.m. on such day, and if request is made after 1:00 p.m., then payment shall be made by 11:00 a.m. on the next Business Day. Payment by Agent to any Secured

Party shall be made by wire transfer, in the type of funds received by Agent. Any such payment shall be subject to Agent's right of offset for any amounts due from such payee under the Loan Documents.

12.10.2. Failure to Pay. If any Secured Party fails to deliver when due any amount payable by it to Agent hereunder, such amount shall bear interest, from the due date until paid in full, at the greater of the Federal Funds Rate or the rate determined by Agent as customary for interbank compensation for two Business Days and thereafter at the Default Rate for Base Rate Loans. No Obligor shall be entitled to credit for any interest paid by a Secured Party to Agent nor shall a Defaulting Lender be entitled to interest on amounts held by Agent pursuant to **Section 4.2**.

12.10.3. Recovery of Payments. If Agent pays an amount to a Secured Party in the expectation that a related payment will be received by Agent from an Obligor and such related payment is not received, then Agent may recover such amount from the Secured Party. If Agent determines that an amount received by it must be returned or paid to an Obligor or other Person pursuant to Applicable Law or otherwise, then Agent shall not be required to distribute such amount to any Secured Party. If Agent is required to return any amounts applied by it to Obligations held by a Secured Party, such Secured Party shall pay to Agent, **on demand**, its share of the amounts required to be returned.

**12.11 Individual Capacities**. As a Lender, Bank of America shall have the same rights and remedies under the Loan Documents as any other Lender, and the terms "Lenders," "Required Lenders" or any similar term shall include Bank of America in its capacity as a Lender. Agent, Lenders and their Affiliates may accept deposits from, lend money to, provide Bank Products to, act as financial or other advisor to, and generally engage in any kind of business with, Obligors and their Affiliates, as if they were not Agent or Lenders hereunder, without any duty to account therefor to any Secured Party. In their individual capacities, Agent, Lenders and their Affiliates may receive information regarding Obligors, their Affiliates and their Account Debtors (including information subject to confidentiality obligations), and shall have no obligation to provide such information to any Secured Party.

**12.12 Titles**. Each Lender, other than Bank of America, that is designated in connection with this credit facility as an "Arranger," "Bookrunner" or "Agent" of any kind shall have no right or duty under any Loan Documents other than those applicable to all Lenders, and shall in no event have any fiduciary duty to any Secured Party.

### **12.13 Certain ERISA Matters**

12.13.1. Lender Representations. Each Lender represents and warrants, as of the date it became a Lender party hereto, and covenants, from the date it became a Lender party hereto to the date it ceases being a Lender party hereto, for the benefit of, Agent and not, for the avoidance of doubt, to or for the benefit of the Obligors, that at least one of the following is and will be true: (a) Lender is not using "plan assets" (within the meaning of ERISA Section 3(42) or otherwise) of one or more Benefit Plans with respect to Lender's entrance into, participation in, administration of and performance of the Loans, Letters of Credit, Commitments or Loan Documents; (b) the transaction exemption set forth in one or more PTEs, such as PTE 84-14 (a class exemption for certain transactions determined by independent qualified professional asset managers), PTE 95-60 (a class exemption for certain transactions involving insurance company general accounts), PTE 90-1 (a class exemption for certain transactions involving insurance company pooled separate accounts), PTE 91-38 (a class exemption for certain transactions involving bank collective investment funds) or PTE 96-23 (a class exemption for certain transactions determined by in-house asset managers), is applicable with respect to Lender's entrance into, participation in, administration of and performance of the Loans, Letters of Credit, Commitments and Loan Documents; (c) (i) Lender is an investment fund managed by a "Qualified Professional Asset Manager" (within the meaning of Part VI of PTE 84-14), (ii) such Qualified Professional Asset Manager made the investment decision on behalf of Lender to enter into, participate in, administer and perform the Loans, Letters of Credit, Commitments and Loan Documents, (iii) the entrance

into, participation in, administration of and performance of the Loans, Letters of Credit, Commitments and Loan Documents satisfies the requirements of sub-sections (b) through (g) of Part I of PTE 84-14, and (iv) to the best knowledge of Lender, the requirements of subsection (a) of Part I of PTE 84-14 are satisfied with respect to Lender's entrance into, participation in, administration of and performance of the Loans, Letters of Credit, Commitments and Loan Documents; or (d) such other representation, warranty and covenant as may be agreed in writing between Agent, in its discretion, and Lender.

12.13.2. **Further Lender Representation.** Unless **Section 12.13.1(a)** or **(d)** is true with respect to a Lender, such Lender further represents and warrants, as of the date it became a Lender hereunder, and covenants, from the date it became a Lender to the date it ceases to be a Lender hereunder, for the benefit of, Agent and not, for the avoidance of doubt, to or for the benefit of any Obligor, that Agent is not a fiduciary with respect to the assets of such Lender involved in its entrance into, participation in, administration of and performance of the Loans, Letters of Credit, Commitments and Loan Documents (including in connection with the reservation or exercise of any rights by Agent under any Loan Document).

**12.14 Bank Product Providers.** Each Secured Bank Product Provider, by delivery of a notice to Agent of a Bank Product, agrees to be bound by the Loan Documents, including **Sections 5.5**, **12**, **14.3.3** and **14.16**, and agrees to indemnify and hold harmless Agent Indemnitees, to the extent not reimbursed by Obligors, against all Claims that may be incurred by or asserted against any Agent Indemnitee in connection with such provider's Secured Bank Product Obligations. No Secured Bank Product Provider that obtains the benefits of **Section 5.5** or any Collateral by virtue of the provisions hereof or of any Security Document shall have any right to notice of any action or to consent to, direct or object to any action hereunder or under any other Loan Document or otherwise in respect of the Collateral (including the release or impairment of any Collateral) other than in its capacity as a Lender and, in such case, only to the extent expressly provided in the Loan Documents.

**12.15 No Third Party Beneficiaries.** This **Section 12** is an agreement solely among Secured Parties and Agent, and shall survive Full Payment of the Obligations. This **Section 12** does not confer any rights or benefits upon Borrowers or any other Person (except as expressly provided in **Section 12.8**).

### **SECTION 13. BENEFIT OF AGREEMENT; ASSIGNMENTS**

**13.1 Successors and Assigns.** This Agreement shall be binding upon and inure to the benefit of Borrowers, Agent, Lenders, Secured Parties, and their respective successors and assigns, except that (a) no Obligor may assign or delegate its rights or obligations under any Loan Documents; (b) assignment by a Lender must be made in compliance with **Section 13.3**; and (c) assignment by Agent must be made in compliance with **Section 12.8**. Agent may treat the Person which made any Loan as the owner thereof for all purposes until such Person makes an assignment in accordance with **Section 13.3**. Any authorization or consent of a Lender shall be conclusive and binding on any subsequent transferee or assignee of such Lender.

#### **13.2 Participations**

13.2.1. **Permitted Participants; Effect.** Subject to Section 13.3.3, any Lender may sell to a financial institution ("Participant") a participating interest in the rights and obligations of such Lender under any Loan Documents. Despite any sale by a Lender of participating interests to a Participant, such Lender's obligations under the Loan Documents shall remain unchanged, it shall remain solely responsible to the other parties hereto for performance of such obligations, it shall remain the holder of its Loans and Commitments for all purposes, all amounts payable by Borrowers shall be determined as if it had not sold such participating interests, and Borrowers and Agent shall continue to deal solely and directly with such Lender in connection with the Loan Documents. Each Lender shall be solely responsible for notifying its Participants of any matters under the Loan Documents, and Agent and the other Lenders shall not have any

obligation or liability to any such Participant. A Participant that would be a Foreign Lender if it were a Lender shall not be entitled to the benefits of **Section 5.8** unless Borrowers agree otherwise in writing.

13.2.2. **Voting Rights.** Each Lender shall retain the sole right to approve, without the consent of any Participant, any amendment, waiver or other modification of a Loan Document other than that which forgives principal, interest or fees, or reduces the stated interest rate or fees, in each case, payable with respect to any Loan or Commitment in which such Participant has an interest, postpones the Termination Date or any date fixed for any regularly scheduled payment of principal, interest or fees on such Loan or Commitment, or releases any Borrower, substantially all Guarantors or substantially all Collateral.

13.2.3. **Participant Register.** Each Lender that sells a participation shall, acting as a non-fiduciary agent of Borrowers (solely for tax purposes), maintain a register in which it enters the Participant's name, address and interest in Commitments, Loans (and stated interest) and LC Obligations. Entries in the register shall be conclusive, absent manifest error, and such Lender shall treat each Person recorded in the register as the owner of the participation for all purposes, notwithstanding any notice to the contrary. No Lender shall have an obligation to disclose any information in such register except to the extent necessary to establish that a Participant's interest is in registered form under the Code.

13.2.4. **Benefit of Setoff.** Each Participant shall have a right of set-off in respect of its participating interest to the same extent as if such interest were owing directly to a Lender, and each Lender shall also retain the right of set-off with respect to any participating interests sold by it. By exercising any right of set-off, a Participant agrees to share with Lenders all amounts received through its set-off, in accordance with **Section 12.5** as if such Participant were a Lender.

### **13.3 Assignments**

13.3.1. **Permitted Assignments.** A Lender may assign to an Eligible Assignee any of its rights and obligations under the Loan Documents, as long as (a) each assignment is of a constant, and not a varying, percentage of the transferor Lender's rights and obligations under the Loan Documents and, in the case of a partial assignment, is in a minimum principal amount of \$5,000,000 (unless otherwise agreed by Agent and, unless an Event of Default has occurred and is continuing, Borrower Agent in their discretion) and integral multiples of \$1,000,000 in excess of that amount; (b) except in the case of an assignment in whole of a Lender's rights and obligations, the aggregate amount of the Commitments retained by the transferor Lender is at least \$5,000,000 (unless otherwise agreed by Agent and, unless an Event of Default has occurred and is continuing, Borrower Agent in their discretion); and (c) the parties to each such assignment shall execute and deliver an Assignment to Agent for acceptance and recording. Nothing herein shall limit the right of a Lender to pledge or assign any rights under the Loan Documents to secure obligations of such Lender, including a pledge or assignment to a Federal Reserve Bank; provided, that no such pledge or assignment shall release the Lender from its obligations hereunder nor substitute the pledgee or assignee for such Lender as a party hereto.

13.3.2. **Effect; Effective Date.** Upon delivery to Agent of an assignment notice in the form of Exhibit B and a processing fee of \$3,500 (unless otherwise agreed by Agent in its discretion), the assignment shall become effective as specified in the notice, if it complies with this **Section 13.3**. From such effective date, the Eligible Assignee shall for all purposes be a Lender under the Loan Documents, and shall have all rights and obligations of a Lender thereunder. Upon consummation of an assignment, the transferor Lender, Agent and Borrowers shall, if requested by the transferor Lender, make appropriate arrangements for issuance of replacement and/or new notes, if applicable. The transferee Lender shall comply with **Section 5.9** and deliver, upon request, an administrative questionnaire satisfactory to Agent.

13.3.3. **Certain Assignees.** No assignment or participation may be made to a Borrower, Affiliate of a Borrower, Defaulting Lender or natural person or a holding company, investment vehicle or

trust for, or owned and operated for the primary benefit of, a natural Person. Agent shall have no obligation to determine whether any assignment is permitted under the Loan Documents. Any assignment by a Defaulting Lender must be accompanied by satisfaction of its outstanding obligations under the Loan Documents in a manner satisfactory to Agent, including payment by the Defaulting Lender or Eligible Assignee of an amount sufficient upon distribution (through direct payment, purchases of participations or other methods acceptable to Agent in its discretion) to satisfy all funding and payment liabilities of the Defaulting Lender. If any assignment by a Defaulting Lender (by operation of law or otherwise) does not comply with the foregoing, the assignee shall be deemed a Defaulting Lender for all purposes until compliance occurs.

13.3.4. **Register.** Agent, acting as a non-fiduciary agent of Borrowers (solely for tax purposes), shall maintain (a) a copy (or electronic equivalent) of each Assignment and Acceptance delivered to it, and (b) a register for recordation of the names, addresses and Commitments of, and the Loans, interest and LC Obligations owing to, each Lender. Entries in the register shall be conclusive, absent manifest error, and Borrowers, Agent and Lenders shall treat each Person recorded in such register as a Lender for all purposes under the Loan Documents, notwithstanding any notice to the contrary. Agent may choose to show only one Borrower as the borrower in the register, without any effect on the liability of any Obligor with respect to the Obligations. The register shall be available for inspection by Borrowers or any Lender, from time to time upon reasonable notice.

**13.4 Replacement of Certain Lenders.** If a Lender (a) within the last 120 days failed to give its consent to any amendment, waiver or action for which consent of all Lenders or all affected Lenders was required and Required Lenders consented, (b) is a Defaulting Lender, or (c) within the last 120 days gave a notice under **Section 3.5** or requested payment or compensation under **Section 3.7** or **5.8** (and has not designated a different Lending Office pursuant to **Section 3.8**), then Agent or Borrower Agent may, upon 3 Business Days' notice to such Lender, require it to assign its rights and obligations under the Loan Documents to Eligible Assignee(s), pursuant to appropriate Assignment(s), within 3 Business Day after the notice. Agent is irrevocably appointed as attorney-in-fact to execute any such Assignment if the Lender fails to execute it. Such Lender shall be entitled to receive, in cash, concurrently with such assignment, all amounts owed to it under the Loan Documents through the date of assignment.

## **SECTION 14. MISCELLANEOUS**

### **14.1 Consents, Amendments and Waivers**

14.1.1. **Amendment.** No modification of any Loan Document, including any extension or amendment of a Loan Document or any waiver of a Default or Event of Default, shall be effective without the prior written agreement of the Required Lenders (or the Agent with the consent of the Required Lenders) and each Obligor party to such Loan Document; provided, that

(a) without the prior written consent of Agent, no modification shall alter any provision in a Loan Document that relates to any rights, duties or discretion of Agent;

(b) without the prior written consent of Issuing Bank, no modification shall alter **Section 2.2** or any other provision in a Loan Document that relates to Letters of Credit or any rights, duties or discretion of Issuing Bank;

(c) without the prior written consent of each directly adversely affected Lender, including such a Defaulting Lender, no modification shall (i) increase the Commitment of such Lender; (ii) reduce the amount of, or waive or delay payment of, any principal, interest or fees payable to such Lender (except as provided in **Section 1.5** or **Section 4.2**); (iii) extend the Termination Date applicable to such Lender's Obligations; (iv) amend the definition of Pro Rata or Required Lenders; or (v) amend this clause

(c) (it being understood that (A) a waiver of any condition precedent of the waiver of any Default or Event of Default or mandatory prepayment shall not constitute an extension, waiver, delay or increase of any Commitment of any Lender and (B) only the consent of the Required Lenders shall be required to waive the application of any default interest or the making of any mandatory prepayment);

(d) without the prior written consent of all Lenders (except any Defaulting Lender), no modification shall (i) alter **Section 5.5.2** or **14.1.1**; (ii) amend the definition of Borrowing Base (or any defined term as used in such definition) if the effect of such amendment is to increase borrowing availability; (iii) reserved; (iv) release all or substantially all Collateral; or (v) except in connection with a merger, disposition or similar transaction expressly permitted hereby, release any Borrower from liability for any Obligations or all or substantially all of the Guarantors; and

(e) without the prior written consent of a Secured Bank Product Provider, no modification shall affect its relative payment priority under **Section 5.5.2**.

14.1.2. Limitations. Only the consent of the parties to any agreement relating to fees or a Bank Product shall be required for modification of such agreement, and no Bank Product provider (in such capacity) shall have any right to consent to modification of any Loan Document. Any waiver or consent granted by Agent, Issuing Bank or Lenders hereunder shall be effective only if in writing and only for the matter specified.

14.1.3. Payment for Consents. No Borrower will, directly or indirectly, pay any remuneration or other thing of value, whether by way of additional interest, fee or otherwise, to any Lender (in its capacity as a Lender hereunder) as consideration for agreement by such Lender with any modification of any Loan Documents, unless such remuneration or value is concurrently paid or made available to be paid, on the same terms, on a Pro Rata basis to all Lenders providing their consent.

**14.2 Indemnity. EACH BORROWER SHALL INDEMNIFY AND HOLD HARMLESS THE INDEMNITEES AGAINST ANY CLAIMS THAT MAY BE INCURRED BY OR ASSERTED AGAINST ANY INDEMNITEE, INCLUDING CLAIMS ASSERTED BY ANY OBLIGOR OR OTHER PERSON OR ARISING FROM THE NEGLIGENCE OF AN INDEMNITEE.** In no event shall any party to a Loan Document have any obligation thereunder to indemnify or hold harmless an Indemnitee with respect to a Claim that (A) is determined by a court of competent jurisdiction in a final nonappealable judgment to have resulted from the gross negligence, bad faith or willful misconduct of such Indemnitee or any of its Related Parties; (B) result from a material breach of such Indemnitee's or its Related Parties' obligations under this Agreement or under any other Loan Document as determined by a court of competent jurisdiction by final and nonappealable judgment; or (C) any disputes solely among the Indemnitees (other than disputes involving claims against any arranger, the Agent, or any similar Person in its respective capacity as such) that do not arise from any act or omission of any Obligor or any of its Affiliates. For purposes of this Section 14.2, "Related Parties" of any Person shall mean such Person's Affiliates and its and such Affiliates' officers, directors, employees, agents, representatives and advisors.

### **14.3 Notices and Communications**

14.3.1. Notice Address. Subject to **Section 14.3.2**, all notices and other communications by or to a party hereto shall be in writing (including via electronic mail) and shall be given to any Borrower, at Borrower Agent's address shown on the signature pages hereof, and to any other Person at its address shown on the signature pages hereof (or, in the case of a Person who becomes a Lender after the Closing Date, at the address shown on its Assignment), or at such other address as a party may hereafter specify by notice in accordance with this **Section 14.3**. Each communication shall be effective only (a) if given by facsimile transmission, when transmitted to the applicable facsimile number, if confirmation of receipt is received; (b) if given by mail, three Business Days after deposit in the U.S. mail, with first-class postage

pre-paid, addressed to the applicable address; (c) if given by electronic mail, shall be deemed received upon the sender's receipt of an acknowledgement from the intended recipient (such as by the "return receipt requested" function, as available, return e-mail or other written acknowledgement); or (d) if given by personal delivery, when duly delivered to the notice address with receipt acknowledged. Notwithstanding the foregoing, no notice to Agent pursuant to **Section 2.1.4, 2.2, 3.1.2 or 4.1.1** shall be effective until actually received by the individual to whose attention at Agent such notice is required to be sent. Any written communication that is not sent in conformity with the foregoing provisions shall nevertheless be effective on the date actually received by the noticed party. Any notice received by Borrower Agent shall be deemed received by all Borrowers.

14.3.2. **Communications.** Electronic and telephonic communications (including e-mail, messaging, voice mail and websites) may be used only in a manner acceptable to Agent. Secured Parties make no assurance as to the privacy or security of electronic or telephonic communications. Voice mail shall not be effective notice under the Loan Documents.

14.3.3. **Platform.** Borrower Materials may be delivered pursuant to procedures approved by Agent, including electronic delivery (if possible) upon request by Agent to an electronic system maintained by Agent ("**Platform**"). Borrower Agent shall notify Agent of each posting of Borrower Materials by the Borrowers on the Platform and the materials shall be deemed received by Agent only upon its receipt of such notice. Borrower Materials and other information relating to this credit facility may be made available to Secured Parties on the Platform. The Platform is provided "as is" and "as available." Agent does not warrant the accuracy or completeness of any information on the Platform nor the adequacy or functioning of the Platform, and expressly disclaims liability for any errors or omissions in the Borrower Materials or any issues involving the Platform. NO WARRANTY OF ANY KIND, EXPRESS, IMPLIED OR STATUTORY, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT OF THIRD PARTY RIGHTS, OR FREEDOM FROM VIRUSES OR OTHER CODE DEFECTS, IS MADE BY AGENT WITH RESPECT TO BORROWER MATERIALS OR THE PLATFORM. No Agent Indemnitee shall have any liability to Borrowers, Secured Parties or any other Person for losses, claims, damages, liabilities or expenses of any kind (whether in tort, contract or otherwise) relating to use by any Person of the Platform, including any unintended recipient, nor for delivery of Borrower Materials and other information via the Platform, internet, e-mail, or any other electronic platform or messaging system, except to the extent arising from the bad faith, gross negligence or willful misconduct of any Agent Indemnitee.

14.3.4. **Public Information.** Secured Parties acknowledge that Reports and Borrower Materials may include Obligor's material non-public information, and should not be made available to personnel who do not wish to receive such information or may be engaged in investment or other market-related activities with respect to an Obligor's securities.

14.3.5. **Non-Conforming Communications.** Agent and Lenders may rely upon any communications purportedly given by or on behalf of any Borrower even if they were not made in a manner specified herein, were incomplete or were not confirmed, or if the terms thereof, as understood by the recipient, varied from a later confirmation. Each Borrower shall indemnify and hold harmless each Indemnitee from any liabilities, losses, costs and expenses arising from any electronic or telephonic communication purportedly given by or on behalf of a Borrower, except to the extent arising from the bad faith, gross negligence or willful misconduct of such Indemnitee.

**14.4 Performance of Borrowers' Obligations.** Agent may, in its discretion at any time and from time to time, at Borrowers' expense, pay any amount or do any act required of a Borrower under any Loan Documents or otherwise lawfully requested by Agent to (a) after the occurrence and during the continuance of an Event of Default, enforce any Loan Documents or collect any Obligations; (b) protect,

insure, maintain or, after the occurrence and during the continuance of an Event of Default, realize upon any Collateral; or (c) defend or maintain the validity or priority of Agent's Liens in any Collateral, including any payment of a judgment, insurance premium, warehouse charge, finishing or processing charge, or landlord claim, or any discharge of a Lien. All payments, costs and expenses (including Extraordinary Expenses) of Agent under this Section shall be reimbursed to Agent by Borrowers, **on demand**, with interest from the date incurred until paid in full, at the Default Rate applicable to Base Rate Loans. Any payment made or action taken by Agent under this Section shall be without prejudice to any right to assert an Event of Default or to exercise any other rights or remedies under the Loan Documents.

**14.5 Credit Inquiries.** Agent and Lenders may (but shall have no obligation) to respond to usual and customary credit inquiries from third parties concerning any Obligor or Subsidiary.

**14.6 Severability.** Wherever possible, each provision of the Loan Documents shall be interpreted in such manner as to be valid under Applicable Law. If any provision is found to be invalid under Applicable Law, it shall be ineffective only to the extent of such invalidity and the remaining provisions of the Loan Documents shall remain in full force and effect.

**14.7 Cumulative Effect; Conflict of Terms.** The provisions of the Loan Documents are cumulative. The parties acknowledge that the Loan Documents may use several limitations or measurements to regulate similar matters, and they agree that these are cumulative and that each must be performed as provided. Except as otherwise provided in another Loan Document (by specific reference to the applicable provision of this Agreement), if any provision contained herein is in direct conflict with any provision in another Loan Document, the provision herein shall govern and control.

**14.8 Counterparts; Execution.** Any Loan Document may be executed in counterparts, each of which shall constitute an original, but all of which when taken together shall constitute a single contract. This Agreement shall become effective when Agent has received counterparts bearing the signatures of all parties hereto. Agent may (but shall have no obligation to) accept any signature, contract formation or record-keeping through electronic means, which shall have the same legal validity and enforceability as manual or paper-based methods, to the fullest extent permitted by Applicable Law, including the Federal Electronic Signatures in Global and National Commerce Act, the New York State Electronic Signatures and Records Act, or any similar state law based on the Uniform Electronic Transactions Act. Upon request by Agent, any electronic signature or delivery shall be promptly followed by a manually executed or paper document.

**14.9 Entire Agreement.** Time is of the essence with respect to all Loan Documents and Obligations. The Loan Documents constitute the entire agreement, and supersede all prior understandings and agreements, among the parties relating to the subject matter thereof.

**14.10 Relationship with Lenders.** The obligations of each Lender hereunder are several, and no Lender shall be responsible for the obligations or Commitments of any other Lender. It shall not be necessary for Agent or any other Lender to be joined as an additional party in any proceeding for such purposes. Nothing in this Agreement and no action of Agent, Lenders or any other Secured Party pursuant to the Loan Documents or otherwise shall be deemed to constitute Agent and any Secured Party to be a partnership, joint venture or similar arrangement, nor to constitute control of any Obligor.

**14.11 No Advisory or Fiduciary Responsibility.** In connection with all aspects of each transaction contemplated by any Loan Document, Borrowers acknowledge and agree that (a)(i) this credit facility and any arranging or other services by Agent, any Lender, any of their Affiliates or any arranger are arm's-length commercial transactions between Borrowers and their Affiliates, on one hand, and Agent, any Lender, any of their Affiliates or any arranger, on the other hand; (ii) Borrowers have consulted their own legal, accounting, regulatory and tax advisors to the extent they have deemed appropriate; and (iii) Borrowers are capable of evaluating, and understand and accept, the terms, risks and conditions of the transactions



contemplated by the Loan Documents; (b) each of Agent, Lenders, their Affiliates and any arranger is and has been acting solely as a principal and, except as expressly agreed in writing by the relevant parties, has not been, is not, and will not be acting as an advisor, agent or fiduciary for Borrowers, their Affiliates or any other Person, and has no obligation with respect to the transactions contemplated by the Loan Documents except as expressly set forth therein; and (c) Agent, Lenders, their Affiliates and any arranger may be engaged in a broad range of transactions that involve interests that differ from those of Borrowers and their Affiliates, and have no obligation to disclose any of such interests to Borrowers or their Affiliates. To the fullest extent permitted by Applicable Law, each Borrower hereby waives and releases any claims that it may have against Agent, Lenders, their Affiliates and any arranger with respect to any breach of agency or fiduciary duty in connection with any transaction contemplated by a Loan Document.

**14.12 Confidentiality.** Each of Agent, Lenders and Issuing Bank shall maintain the confidentiality of all Information (as defined below), except that Information may be disclosed (a) to its Affiliates, and to its and their partners, directors, officers, employees, agents, auditors, advisors and representatives (provided they are informed of the confidential nature of the Information and instructed to keep it confidential); (b) to the extent requested by any governmental, regulatory or self-regulatory authority purporting to have jurisdiction over it or its Affiliates; (c) to the extent required by Applicable Law or by any subpoena or other legal process (provided that to the extent permitted by Applicable Law, Borrower Agent is notified promptly upon such disclosure); (d) to any other party hereto; (e) in connection with any action or proceeding relating to any Loan Documents or Obligations; (f) subject to an agreement containing provisions substantially the same as this Section, to any Transferee or any actual or prospective party (or its advisors) to any Bank Product or to any swap, derivative or other transaction under which payments are to be made by reference to an Obligor or Obligor's obligations; (g) to the extent such Information (i) becomes publicly available other than as a result of a breach of this Section or (ii) is available to Agent, any Lender, Issuing Bank or any of their Affiliates on a nonconfidential basis from a source other than Borrowers or their Subsidiaries; (h) on a confidential basis to a provider of a Platform; or (i) with the consent of Borrower Agent. The Obligors consent to the publication by Agent and Lenders of customary advertising material relating to transactions contemplated hereby, using the names or logos of the Obligors. In addition, Agent and Lenders may disclose information regarding this Agreement and the credit facility hereunder to market data collectors, similar service providers to the lending industry, and service providers to Agent and Lenders in connection with the Loan Documents and Commitments. As used herein, "Information" means information received from an Obligor or Subsidiary relating to it or its business. A Person required to maintain the confidentiality of Information pursuant to this Section shall be deemed to have complied if it exercises a degree of care similar to that accorded its own confidential information. Each of Agent, Lenders and Issuing Bank acknowledges that (i) Information may include material non-public information; (ii) it has developed compliance procedures regarding the use of such information; and (iii) it will handle the material non-public information in accordance with Applicable Law.

**14.13 Reserved.**

**14.14 GOVERNING LAW. THIS AGREEMENT, THE OTHER LOAN DOCUMENTS (EXCEPT AS OTHERWISE EXPRESSLY PROVIDED THEREIN) AND ALL CLAIMS SHALL BE GOVERNED BY THE LAW OF THE STATE OF NEW YORK, WITHOUT GIVING EFFECT TO ANY CONFLICT OF LAW PRINCIPLES EXCEPT FEDERAL LAWS RELATING TO NATIONAL BANKS.**

**14.15 Consent to Forum; Bail-In of EEA Financial Institutions**

**14.15.1. Forum. EACH PARTY HERETO HEREBY CONSENTS TO THE EXCLUSIVE JURISDICTION OF ANY STATE COURT SITTING IN NEW YORK COUNTY, NEW YORK, OR THE UNITED STATES DISTRICT COURT OF THE SOUTHERN DISTRICT OF NEW**

**YORK, IN ANY DISPUTE, ACTION, LITIGATION OR OTHER PROCEEDING RELATING IN ANY WAY TO ANY LOAN DOCUMENTS, AND AGREES THAT ANY DISPUTE, ACTION, LITIGATION OR OTHER PROCEEDING SHALL BE BROUGHT BY IT SOLELY IN ANY SUCH COURT. EACH PARTY HERETO IRREVOCABLY AND UNCONDITIONALLY WAIVES ALL CLAIMS, OBJECTIONS AND DEFENSES THAT IT MAY HAVE REGARDING ANY SUCH COURT'S PERSONAL OR SUBJECT MATTER JURISDICTION, VENUE OR INCONVENIENT FORUM. EACH PARTY HERETO IRREVOCABLY AND UNCONDITIONALLY SUBMITS TO THE JURISDICTION OF SUCH COURTS AND CONSENTS TO SERVICE OF PROCESS IN THE MANNER PROVIDED FOR NOTICES IN SECTION 14.3.1.** A final judgment in any proceeding of any such court shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or any other manner provided by Applicable Law.

14.15.2. Other Jurisdictions. Nothing herein shall limit the right of Agent or any Lender to bring proceedings against any Obligor in any other court, nor limit the right of any party to serve process in any other manner permitted by Applicable Law. Nothing in this Agreement shall be deemed to preclude enforcement by Agent of any judgment or order obtained in any forum or jurisdiction.

14.15.3. Acknowledgement and Consent to Bail-In of EEA Financial Institutions. Notwithstanding anything to the contrary in any Loan Document or in any other agreement, arrangement or understanding among the parties, each party hereto (including each Secured Party) acknowledges that, with respect to any Secured Party that is an EEA Financial Institution, any liability of such Secured Party arising under a Loan Document, to the extent such liability is unsecured, may be subject to the Write-Down and Conversion Powers of an EEA Resolution Authority, and each party hereto agrees and consents to, and acknowledges and agrees to be bound by, (a) the application of any Write-Down and Conversion Powers by an EEA Resolution Authority to any such liability which may be payable to it by such Secured Party; and (b) the effects of any Bail-In Action on any such liability, including (i) a reduction in full or in part or cancellation of any such liability; (ii) a conversion of all, or a portion of, such liability into shares or other instruments of ownership in such EEA Financial Institution, its parent entity, or a bridge institution that may be issued to it or otherwise conferred on it, and that such shares or other instruments of ownership will be accepted by it in lieu of any rights with respect to any such liability under any Loan Document; or (iii) the variation of the terms of such liability in connection with the exercise of any Write-Down and Conversion Powers.

**14.16 Waivers. To the fullest extent permitted by Applicable Law, (a) each party hereto waives the right to trial by jury (which each Secured Party hereby also waives) in any proceeding or dispute of any kind relating in any way to any Loan Documents, Obligations or Collateral; (b) each Borrower waives presentment, demand, protest and notice of presentment; (c) notice prior to taking possession or control of any Collateral except as required by the Loan Documents; (d) each Borrower waives any bond or security that might be required by a court prior to allowing Agent to exercise any rights or remedies; (e) to the extent permitted by law, each Borrower waives the benefit of all valuation, appraisal and exemption laws; (f) each party hereto waives any claim against an Indemnitee, on any theory of liability, for special, indirect, consequential, exemplary or punitive damages (as opposed to direct or actual damages) in any way relating to any Enforcement Action, Obligations, Loan Documents or transactions relating thereto; and (g) each Borrower waives notice of acceptance hereof.** Each Borrower acknowledges that the foregoing waivers are a material inducement to Agent, Issuing Bank and Lenders entering into this Agreement and that they are relying upon the foregoing in their dealings with Borrowers. Each Borrower has reviewed the foregoing waivers with its legal counsel and has knowingly and voluntarily waived its jury trial and other rights following consultation with legal counsel. In the event of litigation, this Agreement may be filed as a written consent to a trial by the court.

**14.17 Patriot Act Notice.** Agent and Lenders hereby notify Borrowers that pursuant to the Patriot Act, Agent and Lenders are required to obtain, verify and record information that identifies each Borrower, including its legal name, address, tax ID number and other information that will allow Agent and Lenders to identify it in accordance with the Patriot Act. Agent and Lenders will also require information regarding any personal guarantor and may require information regarding Borrowers' management and owners, such as legal name, address, social security number and date of birth. Borrowers shall, promptly upon request, provide all documentation and other information as Agent, Issuing Bank or any Lender may request from time to time for purposes of complying with any "know your customer," anti-money laundering rules and regulations, or other requirements of Applicable Law, including the Patriot Act and Beneficial Ownership Regulation.

**14.18 NO ORAL AGREEMENT. THIS AGREEMENT AND THE OTHER LOAN DOCUMENTS REPRESENT THE FINAL AGREEMENT BETWEEN THE PARTIES AND MAY NOT BE CONTRADICTED BY EVIDENCE OF PRIOR, CONTEMPORANEOUS OR SUBSEQUENT ORAL AGREEMENTS BETWEEN THE PARTIES. THERE ARE NO UNWRITTEN AGREEMENTS BETWEEN THE PARTIES.**

**14.19 Agreement Regarding any Supported QFCs.** To the extent that the Loan Documents provide support, through a guarantee or otherwise, for any hedging agreement or any other agreement or instrument that is a QFC (such support, "QFC Credit Support", and each such QFC, a "Supported QFC"), the parties acknowledge and agree as follows with respect to the resolution power of the Federal Deposit Insurance Corporation under the Federal Deposit Insurance Act and Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act (together with the regulations promulgated thereunder, the "U.S. Special Resolution Regimes") in respect of such Supported QFC and QFC Credit Support (with the provisions below applicable notwithstanding that the Loan Documents and any Supported QFC may in fact be stated to be governed by the laws of the State of New York and/or of the United States or any other state of the United States):

(a) In the event a Covered Entity that is party to a Supported QFC (each, a "Covered Party") becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer of such Supported QFC and the benefit of such QFC Credit Support (and any interest and obligation in or under such Supported QFC and such QFC Credit Support, and any rights in property securing such Supported QFC or such QFC Credit Support) from such Covered Party will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if the Supported QFC and such QFC Credit Support (and any such interest, obligation and rights in property) were governed by the laws of the United States or a state of the United States. In the event a Covered Party or a BHC Act Affiliate of a Covered Party becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under the Loan Documents that might otherwise apply to such Supported QFC or any QFC Credit Support that may be exercised against such Covered Party are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if the Supported QFC and the Loan Documents were governed by the laws of the United States or a state of the United States. Without limitation of the foregoing, it is understood and agreed that rights and remedies of the parties with respect to a Defaulting Lender shall in no event affect the rights of any Covered Party with respect to a Supported QFC or any QFC Credit Support.

(b) As used in this **Section 14.19**, the following terms have the following meanings:

"BHC Act Affiliate" of a party means an "affiliate" (as such term is defined under, and interpreted in accordance with, 12 U.S.C. 1841(k)) of such party.

“Covered Entity” means any of the following: (i) a “covered entity” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b); (ii) a “covered bank” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or (iii) a “covered FSI” as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b).

“Default Right” has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable.

“QFC” has the meaning assigned to the term “qualified financial contract” in, and shall be interpreted in accordance with, 12 U.S.C. 5390(c)(8)(D).

*[Remainder of page intentionally left blank; signatures begin on following page]*

IN WITNESS WHEREOF, this Agreement has been executed and delivered as of the date set forth above.

**BORROWERS:**

**CALIX, INC.**, a Delaware corporation

By: /s/ Cory Sindelar

Name: Cory Sindelar

Title: Chief Financial Officer

Address:

2777 Orchard Parkway  
San Jose, California 95134

Attention: Cory Sindelar

LOAN AND SECURITY AGREEMENT  
(CALIX)  
SIGNATURE PAGE

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**AGENT AND LENDERS:**

**BANK OF AMERICA, N.A.,**  
as Agent and Lender

By: /s/ Brett German  
Name: Brett German  
Title: Senior Vice President

Address:  
Bank of America, N.A.  
ORI-129-10-01  
121 SW Morrison St, Floor 17  
Portland, OR 97204  
Attention: Asset Based Portfolio Specialist  
-- Calix, Inc.  
Telecopy:

### Omitted Attachments

Certain exhibits and schedules listed on page iv of this Agreement have been omitted pursuant to Item 601(a)(5) of Regulation S-K. Calix will furnish copies of such omitted exhibits and schedules to the Securities and Exchange Commission or its staff upon request.

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Schedule 1.1  
to  
Loan and Security Agreement

**COMMITMENTS OF LENDERS**

| <b>Name of Lender</b> | <b>Amount of Commitment</b> |
|-----------------------|-----------------------------|
| Bank of America, N.A. | \$35,000,000                |



**WAIVER AGREEMENT**

THIS WAIVER AGREEMENT (this “**Agreement**”) is entered into this 27<sup>th</sup> day of January, 2020, by and between SILICON VALLEY BANK, a California corporation (“**Bank**”), and CALIX, INC., a Delaware corporation (“**Borrower**”).

**RECITALS**

- A. Bank and Borrower have entered into that certain Loan and Security Agreement dated as of August 7, 2017 (as the same may from time to time be amended, modified, supplemented or restated, the “**Loan Agreement**”).
- B. Bank has extended credit to Borrower for the purposes permitted in the Loan Agreement.
- C. Borrower is currently in default of Section 6.9(a) of the Loan Agreement for failing to comply with the Adjusted Quick Ratio financial covenant during the fiscal quarter ended December 31, 2019 (the “**Existing Event of Default**”).
- D. Borrower has requested that Bank waive the Existing Event of Default.
- E. Bank has agreed to so waive the Existing Event of Default in accordance with the terms, subject to the conditions and in reliance upon the representations and warranties set forth below.

**AGREEMENT**

**NOW, THEREFORE**, in consideration of the foregoing recitals and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, and intending to be legally bound, the parties hereto agree as follows:

1. **Definitions.** Capitalized terms used but not defined in this Agreement shall have the meanings given to them in the Loan Agreement.
  2. **Waiver of Existing Event of Default.** Borrower acknowledges and agrees that unless the Existing Event of Default is waived by Bank, the Existing Event of Default would constitute an Event of Default under the Loan Documents. The Bank hereby waives, effective as of December 31, 2019, the Existing Event of Default. Bank’s agreement to waive the Existing Event of Default shall in no way obligate Bank to make any other modifications to the Loan Agreement or to waive Borrower’s compliance with any other terms of the Loan Documents, and shall not limit or impair Bank’s right to demand strict performance of all other terms and covenants as of any date. The waiver set forth above shall not be deemed or otherwise construed to constitute a waiver of any other provisions of the Loan Agreement in connection with any other transaction.
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### 3. Limitation of Waiver.

**3.1** The waiver set forth in Section 2, above, is effective for the purposes set forth herein and shall be limited precisely as written and shall not be deemed to (1) be a consent to any amendment, waiver or modification of any other term or condition of any Loan Document, or (1) otherwise prejudice any right or remedy which Bank may now have or may have in the future under or in connection with any Loan Document.

**3.2** This Agreement shall be construed in connection with and as part of the Loan Documents and all terms, conditions, representations, warranties, covenants and agreements set forth in the Loan Documents, except as herein amended, are hereby ratified and confirmed and shall remain in full force and effect.

**3.3** In addition to those Events of Default specifically enumerated in the Loan Documents, the failure to comply with the terms of any covenant or agreement contained herein shall constitute an Event of Default and shall entitle Bank to exercise all rights and remedies provided to Bank under the terms of any of the other Loan Documents as a result of the occurrence of the same.

**4. Representations and Warranties.** To induce Bank to enter into this Agreement, Borrower hereby represents and warrants to Bank as follows:

**4.1** Immediately after giving effect to this Agreement (1) the representations and warranties contained in the Loan Documents are true, accurate and complete in all material respects as of the date hereof (except to the extent such representations and warranties relate to an earlier date, in which case they are true and correct as of such date), and (1) no Event of Default has occurred and is continuing;

**4.2** Borrower has the power and authority to execute and deliver this Agreement and to perform its obligations under the Loan Agreement;

**4.3** The organizational documents of Borrower delivered to Bank on the Effective Date remain true, accurate and complete and have not been amended, supplemented or restated and are and continue to be in full force and effect;

**4.4** The execution and delivery by Borrower of this Agreement and the performance by Borrower of its obligations under the Loan Agreement have been duly authorized;

**4.5** The execution and delivery by Borrower of this Agreement and the performance by Borrower of its obligations under the Loan Agreement do not and will not contravene (1) any material law or regulation binding on or affecting Borrower, (1) any contractual restriction with a Person binding on Borrower in any material respects, (1) in any material respects, any order, judgment or decree of any court or other governmental or public body or authority, or subdivision thereof, binding on Borrower, or (1) the organizational documents of Borrower;

**4.6** The execution and delivery by Borrower of this Agreement and the performance by Borrower of its obligations under the Loan Agreement do not require any order, consent, approval, license, authorization or validation of, or filing, recording or registration with, or exemption by any governmental or public body or authority, or subdivision thereof, binding on Borrower, except as already has been obtained or made; and

**4.7** This Agreement has been duly executed and delivered by Borrower and is the binding obligation of Borrower, enforceable against Borrower in accordance with its terms, except as such enforceability may be limited by bankruptcy, insolvency, reorganization, liquidation, moratorium or other similar laws of general application and equitable principles relating to or affecting creditors' rights.

**5. Integration.** This Agreement and the Loan Documents represent the entire agreement about this subject matter and supersede prior negotiations or agreements. All prior agreements, understandings, representations, warranties, and negotiations between the parties about the subject matter of this Agreement and the Loan Documents merge into this Agreement and the Loan Documents.

**6. Counterparts.** This Agreement may be executed in any number of counterparts and all of such counterparts taken together shall be deemed to constitute one and the same instrument.

**7. Effectiveness.** This Agreement shall be deemed effective upon (1) the due execution and delivery to Bank of this Agreement by each party hereto, and (b) payment of Bank's legal fees and expenses in connection with the negotiation and preparation of this Agreement.

[Signature page follows.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered as of the date first written above.

**BORROWER:**

CALIX, INC.

By: /s/ Cory Sindelar

Name: Cory Sindelar

Title: Chief Financial Officer

**BANK:**

SILICON VALLEY BANK

By: /s/ Stephen Chang

Name: Stephen Chang

Title: Director

**SUBSIDIARIES OF THE REGISTRANT**

| <b><u>Entity Name</u></b>                               | <b><u>Jurisdiction</u></b> |
|---|----------------------------|
| Calix Networks Canada, Inc.                             | Canada                     |
| Calix Network Technology Development (Nanjing) Co. Ltd. | China                      |
| Calix Networks UK, Ltd                                  | England, UK                |
| Calix Brasil Servicos Ltda                              | Brazil                     |

**Consent of Independent Registered Public Accounting Firm**

The Board of Directors  
Calix, Inc.:

We consent to the incorporation by reference in the registration statement (No. 333-234355, 333-230023, 333-226682, 333-223637, 333-218066, 333-216323, 333-209732, 333-202496, 333-194054, 333-185025, 333-172379, 333-166245) on Form S-8 of Calix, Inc. of our report dated February 21, 2020, with respect to the consolidated balance sheets of Calix, Inc. as of December 31, 2019 and 2018, the related consolidated statements of comprehensive loss, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2019, which report appears in the December 31, 2019 annual report on Form 10-K of Calix, Inc. Our report refers to the change in method of accounting for leases as of January 1, 2019 due to the adoption of Financial Accounting Standard Board (FASB) Accounting Standard Codification No. 842, *Leases*.

/s/ KPMG LLP

San Francisco, California  
February 21, 2020

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER  
PURSUANT TO SECTION 302 OF  
THE SARBANES-OXLEY ACT OF 2002**

I, Carl Russo, certify that:

1. I have reviewed this annual report on Form 10-K of Calix, Inc. for the year ended December 31, 2019;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting;
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2020

/s/ Carl Russo

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Carl Russo

Chief Executive Officer

(Principal Executive Officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER  
PURSUANT TO SECTION 302 OF  
THE SARBANES-OXLEY ACT OF 2002**

I, Cory Sindelar, certify that:

1. I have reviewed this annual report on Form 10-K of Calix, Inc. for the year ended December 31, 2019;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting;
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 21, 2020

/s/ Cory Sindelar

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Cory Sindelar  
Chief Financial Officer  
(Principal Financial Officer)



**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER  
PURSUANT TO 18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO  
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Carl Russo, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Calix, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2019 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of the Company.

Date: February 21, 2020

/s/ Carl Russo

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Carl Russo

Chief Executive Officer  
(Principal Executive Officer)

I, Cory Sindelar, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Calix, Inc. (the "Company") on Form 10-K for the fiscal year ended December 31, 2019 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents in all material respects the financial condition and results of operations of the Company.

Date: February 21, 2020

/s/ Cory Sindelar

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Cory Sindelar

Chief Financial Officer  
(Principal Financial Officer)

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Calix, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.