

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

FORM 10-Q

(Mark One)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2017

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)

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

1035 N. McDowell Blvd., Petaluma, CA 94954
(Address of Principal Executive Offices) (Zip Code)

(707) 766-3000
(Registrant's Telephone Number, Including Area Code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post 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"/> (Do not check if a smaller reporting company)	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:

As of November 2, 2017, there were 50,394,757 shares of the Registrant's common stock, par value \$0.025 outstanding.

Calix, Inc.
Form 10-Q
TABLE OF CONTENTS

PART I. FINANCIAL INFORMATION	3
Item 1. Financial Statements (Unaudited)	3
Condensed Consolidated Balance Sheets	3
Condensed Consolidated Statements of Comprehensive Income (Loss)	4
Condensed Consolidated Statements of Cash Flows	5
Notes to Condensed Consolidated Financial Statements	6
Item 2. Management’s Discussion and Analysis of Financial Condition and Results of Operations	17
Overview	18
Critical Accounting Policies and Estimates	19
Results of Operations	19
Liquidity and Capital Resources	23
Item 3. Quantitative and Qualitative Disclosures About Market Risk	25
Item 4. Controls and Procedures	26
PART II. OTHER INFORMATION	27
Item 1. Legal Proceedings	27
Item 1A. Risk Factors	27
Item 2. Unregistered Sales of Equity Securities and Use of Proceeds	42
Item 3. Defaults Upon Senior Securities	42
Item 4. Mine Safety Disclosures	42
Item 5. Other Information	42
Item 6. Exhibits	43
SIGNATURES	44

PART I. FINANCIAL INFORMATION

ITEM 1. Financial Statements

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

	September 30, 2017	December 31, 2016
	(Unaudited)	(See Note 1)
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 64,184	\$ 50,359
Marketable securities	6,598	27,748
Accounts receivable, net	44,227	51,336
Inventory	36,321	44,545
Deferred cost of revenue	22,859	34,763
Prepaid expenses and other current assets	11,504	10,571
Total current assets	185,693	219,322
Property and equipment, net	16,997	17,984
Goodwill	116,175	116,175
Other assets	777	1,994
	\$ 319,642	\$ 355,475
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 29,576	\$ 23,827
Accrued liabilities	59,401	69,715
Deferred revenue	28,228	27,854
Line of credit	30,000	—
Total current liabilities	147,205	121,396
Long-term portion of deferred revenue	21,173	20,237
Other long-term liabilities	881	878
Total liabilities	169,259	142,511
Commitments and contingencies (See Note 7)		
Stockholders' equity:		
Preferred stock, \$0.025 par value; 5,000 shares authorized; no shares issued and outstanding as of September 30, 2017 and December 31, 2016	—	—
Common stock, \$0.025 par value; 100,000 shares authorized; 55,712 shares issued and 50,382 shares outstanding as of September 30, 2017, and 54,722 shares issued and 49,392 shares outstanding as of December 31, 2016	1,393	1,368
Additional paid-in capital	843,811	836,563
Accumulated other comprehensive loss	(344)	(656)
Accumulated deficit	(654,491)	(584,325)
Treasury stock, 5,330 shares as of September 30, 2017 and December 31, 2016	(39,986)	(39,986)
Total stockholders' equity	150,383	212,964
	\$ 319,642	\$ 355,475

See accompanying notes to condensed consolidated financial statements.

CALIX, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In thousands, except per share data)
(Unaudited)

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Revenue:				
Products	\$ 106,442	\$ 114,029	\$ 305,395	\$ 305,853
Services	22,385	7,158	67,073	21,134
Total revenue	<u>128,827</u>	<u>121,187</u>	<u>372,468</u>	<u>326,987</u>
Cost of revenue:				
Products ⁽¹⁾	55,494	60,662	171,166	159,856
Services ⁽¹⁾	28,700	6,981	78,969	18,099
Total cost of revenue	<u>84,194</u>	<u>67,643</u>	<u>250,135</u>	<u>177,955</u>
Gross profit	44,633	53,544	122,333	149,032
Operating expenses:				
Research and development ⁽¹⁾	32,633	28,119	99,391	75,925
Sales and marketing ⁽¹⁾	18,448	20,575	59,306	58,850
General and administrative ⁽¹⁾	10,203	8,615	30,161	32,940
Amortization of intangible assets	—	—	—	1,701
Restructuring charges	612	—	2,268	—
Litigation settlement gain	—	(4,500)	—	(4,500)
Total operating expenses	<u>61,896</u>	<u>52,809</u>	<u>191,126</u>	<u>164,916</u>
Income (loss) from operations	(17,263)	735	(68,793)	(15,884)
Interest and other income (expense), net:				
Interest income (expense), net	(60)	80	88	274
Other income (expense), net	(305)	30	(386)	145
Income (loss) before provision for income taxes	(17,628)	845	(69,091)	(15,465)
Provision for income taxes	225	209	1,075	454
Net income (loss)	<u>\$ (17,853)</u>	<u>\$ 636</u>	<u>\$ (70,166)</u>	<u>\$ (15,919)</u>
Net income (loss) per common share:				
Basic	<u>\$ (0.35)</u>	<u>\$ 0.01</u>	<u>\$ (1.40)</u>	<u>\$ (0.33)</u>
Diluted	<u>\$ (0.35)</u>	<u>\$ 0.01</u>	<u>\$ (1.40)</u>	<u>\$ (0.33)</u>
Weighted-average number of shares used to compute net income (loss) per common share:				
Basic	<u>50,336</u>	<u>48,773</u>	<u>49,960</u>	<u>48,578</u>
Diluted	<u>50,336</u>	<u>49,309</u>	<u>49,960</u>	<u>48,578</u>
Net income (loss)	\$ (17,853)	\$ 636	\$ (70,166)	\$ (15,919)
Other comprehensive income (loss), net of tax:				
Unrealized gains (losses) on available-for-sale				
marketable securities, net	4	(9)	3	97
Foreign currency translation adjustments, net	116	(87)	309	(128)
Total other comprehensive income, net of tax	<u>120</u>	<u>(96)</u>	<u>312</u>	<u>(31)</u>
Comprehensive income (loss)	<u>\$ (17,733)</u>	<u>\$ 540</u>	<u>\$ (69,854)</u>	<u>\$ (15,950)</u>

⁽¹⁾ Includes stock-based compensation as follows:

Cost of revenue:				
Products	\$ 137	\$ 120	\$ 349	\$ 338
Services	69	54	200	146

Research and development	1,215	1,573	3,663	3,719
Sales and marketing	816	1,661	2,581	3,323
General and administrative	759	1,269	2,521	2,840

See accompanying notes to condensed consolidated financial statements.

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

	Nine Months Ended	
	September 30, 2017	September 24, 2016
Operating activities:		
Net loss	\$ (70,166)	\$ (15,919)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Stock-based compensation	9,314	10,366
Depreciation and amortization	7,632	6,282
Amortization of intangible assets	813	4,991
Loss on retirement of property and equipment	148	—
Amortization of premium (discount) related to available-for-sale securities	(7)	337
Changes in operating assets and liabilities:		
Accounts receivable, net	7,109	(10,104)
Inventory	8,224	7,477
Deferred cost of revenue	11,904	(9,800)
Prepaid expenses and other assets	(320)	(6,058)
Accounts payable	5,543	(356)
Accrued liabilities	(10,132)	13,974
Deferred revenue	1,310	4,383
Other long-term liabilities	3	(313)
Net cash provided by (used in) operating activities	(28,625)	5,260
Investing activities:		
Purchases of property and equipment	(6,786)	(5,364)
Purchases of marketable securities	(8,732)	—
Sales of marketable securities	5,051	—
Maturities of marketable securities	24,841	20,170
Net cash provided by investing activities	14,374	14,806
Financing activities:		
Proceeds from exercise of stock options	29	14
Proceeds from employee stock purchase plan	673	2,905
Payments for repurchases of common stock	—	(12,809)
Taxes paid for awards vested under equity incentive plan	(2,743)	(1,787)
Proceeds from line of credit	68,534	—
Repayment of line of credit	(38,534)	—
Payments to originate the line of credit	(186)	—
Net cash provided by (used in) financing activities	27,773	(11,677)
Effect of exchange rate changes on cash and cash equivalents	303	(251)
Net increase in cash and cash equivalents	13,825	8,138
Cash and cash equivalents at beginning of period	50,359	23,626
Cash and cash equivalents at end of period	\$ 64,184	\$ 31,764

See accompanying notes to condensed consolidated financial statements.

CALIX, INC.

**NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
(Unaudited)**

1. Company and Basis of Presentation

Company

Calix, Inc. (together with its subsidiaries, “Calix,” the “Company,” “our,” “we,” or “us”) was incorporated in August 1999, and is a Delaware corporation. The Company is a leading global provider of broadband communications access platforms, systems and software for fiber- and copper-based network architectures and a pioneer in software defined access and cloud products focused on access networks and the subscriber. Calix’s portfolio combines Access eXtensible Operating System (“AXOS”), a software platform for access, with Calix Cloud, the Company’s innovative cloud products for network data analytics and subscriber experience assurance. Together they enable communications service providers (“CSPs”) to transform their networks and enhance how they connect to their residential and business subscribers. The Company enables 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 solely 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

The accompanying unaudited condensed consolidated financial statements, including the accounts of Calix, Inc. and its wholly-owned subsidiaries, have been prepared in accordance with the requirements of the U.S. Securities and Exchange Commission (“SEC”) for interim reporting. As permitted under those rules, certain footnotes or other financial information that are normally required by U.S. generally accepted accounting principles (“GAAP”) can be condensed or omitted. In the opinion of management, the financial statements include all normal and recurring adjustments that are considered necessary for the fair presentation of the Company’s financial position and operating results. All significant intercompany balances and transactions have been eliminated in consolidation. The Condensed Consolidated Balance Sheet at December 31, 2016 has been derived from the audited financial statements at that date.

The results of the Company’s operations can vary during each quarter of the year. Therefore, the results and trends in these interim financial statements may not be the same as those for the full year or any future periods. The information included in this Quarterly Report on Form 10-Q should be read in conjunction with the audited financial statements included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2016 .

The Company’s fiscal year begins on January 1st and ends on December 31st. Quarterly periods are based on a 4-4-5 calendar with the first, second and third quarters ending on the 13th Saturday of each fiscal period. As a result, the Company had five more days in the nine months ended September 30, 2017 than in the nine months ended September 24, 2016 . The preparation of financial statements in conformity with GAAP for interim financial reporting requires management to make estimates and assumptions that affect the amounts reported in the condensed consolidated financial statements and accompanying notes. Actual results could differ from those estimates.

Prior Period Recast

The Company’s revenue from services for the three and nine months ended September 30, 2017 represents more than 10% of its total revenue; hence, the services revenue and the associated cost of revenue are presented separately in the accompanying Condensed Consolidated Statements of Comprehensive Income (Loss). Services include professional services, customer support, software maintenance, extended warranty subscriptions, training and managed services. Accordingly, revenue and cost of revenue for the three and nine months ended September 24, 2016 are recast solely to conform with the current period presentation. The recast does not affect total revenue, total cost of revenue, gross profit, operating expenses or net income (loss).

2. Significant Accounting Policies

The Company’s significant accounting policies are disclosed in its Annual Report on Form 10-K for the year ended December 31, 2016 . The Company’s significant accounting policies did not change during the nine months ended September 30, 2017 , except for those impacted by the newly adopted accounting standards below.

Newly Adopted Accounting Standards

Stock-Based Compensation

In March 2016, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update No. 2016-09, Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting (“ASU 2016-09”), which simplifies several aspects of the accounting for employee share-based payment transactions for both public and nonpublic entities, including the accounting for income taxes, forfeitures, and statutory tax withholding requirements, as well as classification in the statement of cash flows. The Company adopted ASU 2016-09 in the first quarter of 2017 and had the following impact:

- a. Accounting for Income Taxes - The primary impact of the adoption was the recognition of excess tax benefits and tax deficiencies through the statement of operations when the awards vest or are settled rather than through paid-in capital. The new guidance eliminates the requirement to delay the recognition of excess tax benefits until it reduces current taxes payable and requires the

recognition of excess tax benefits and tax deficiencies in the period they arise. The Company adopted this guidance on a modified retrospective basis beginning on January 1, 2017, and the adoption had a cumulative-effect adjustment to the beginning balance of deferred tax asset and was fully offset by the corresponding valuation allowance as of January 1, 2017. The adoption had no cumulative-effect adjustment on January 1, 2017 accumulated deficit as the Company's net operating loss carryforwards are offset by a full valuation allowance.

- b. Classification of Excess Tax Benefits on the Statement of Cash Flows - ASU 2016-09 requires all tax-related cash flows resulting from share-based payments to be reported as operating activities on the statement of cash flows, a change from the current requirement to present windfall tax benefits as an inflow from financing activities and an outflow from operating activities. The Company adopted this guidance prospectively beginning on January 1, 2017. The adoption of ASU 2016-09 as it relates to this matter had no impact to the Company's consolidated financial statements.
- c. Forfeitures - The Company has historically recognized stock-based compensation expense net of estimated forfeitures on all unvested awards and elected to continuously do so with the adoption of this new guidance. Hence, the adoption of ASU 2016-09 as it relates to this matter had no impact to the Company's consolidated financial statements.
- d. Minimum Statutory Tax Withholding Requirements - ASU 2016-09 allows companies to withhold an amount up to the employee's maximum individual tax rate in the relevant jurisdiction without resulting in liability classification of the award. The Company adopted this guidance using a modified retrospective approach. The adoption had no impact on the January 1, 2017 accumulated deficit as the Company had no outstanding liability awards that would otherwise qualify for equity classification under this new guidance.
- e. Classification of Employee Taxes Paid on the Statement of Cash Flows When an Employer Withholds Shares for Tax-Withholding Purposes - ASU 2016-09 clarifies that all cash payments made to taxing authorities on the employees' behalf for withheld shares should be presented as financing activities on the statement of cash flows. The Company has historically presented the taxes paid related to net share settlement of equity awards as a financing activity on the statements of cash flows. Hence, the adoption of ASU 2016-09 as it relates to this matter had no impact to the Company's consolidated financial statements.

Inventory

In July 2015, the FASB issued Accounting Standards Update No. 2015-11, Inventory (Topic 330): Simplifying the Measurement of Inventory ("ASU 2015-11"), which requires measurement of inventory at lower of cost and net realizable value, versus lower of cost or market. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. The Company adopted ASU 2015-11 prospectively beginning on January 1, 2017. The adoption of this standard had no material impact on the Company's consolidated financial statements.

Recent Accounting Pronouncements Not Yet Adopted

Leases

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, Leases (Topic 842) ("ASU 2016-02"), which requires recognition of an asset and liability for lease arrangements longer than twelve months. ASU 2016-02 will be effective for the Company beginning in the first quarter of 2019. Early application is permitted, and it is required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. The Company is not planning to early adopt, and accordingly, it will adopt the new standard effective January 1, 2019. The Company intends to elect the available practical expedients on adoption. The Company is currently assessing the potential impact of adopting this new guidance on its consolidated financial statements. The Company expects its assets and liabilities to increase as the new standard requires recognition of right-of-use assets and lease liabilities for operating leases, but does not expect any material impact on its income (loss) from operations or net income (loss) as a result of the adoption of this standard.

Revenue from Contracts with Customers

In May 2014, the FASB issued Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (Topic 606) ("ASU 2014-09"), which provides guidance for revenue recognition. ASU 2014-09 supersedes the revenue recognition requirements in Topic 605, Revenue Recognition, and most industry-specific guidance. Additionally, it supersedes some cost guidance included in Subtopic 605-35, Revenue Recognition-Construction-Type and Production-Type Contracts, and creates new Subtopic 340-40, Other Assets and Deferred Costs-Contracts with Customers. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. In doing so, companies will need to use more judgment and make more estimates than under the previous guidance. These may include identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. On August 12, 2015, the FASB issued Accounting Standards Update No. 2015-14, Revenue from Contracts with Customers (Topic 606), Deferral of the Effective Date ("ASU 2015-14") to defer the effective date of ASU 2014-09 by one year. ASU 2015-14 permits early adoption of the new revenue standard, but not before its original effective date. In April 2016, the FASB issued Accounting Standards Update No. 2016-10, Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing ("ASU 2016-10") which further clarifies guidance related to identifying performance obligations and licensing implementation guidance contained in ASU 2014-09. In May 2016, the FASB issued Accounting Standards Update No. 2016-12, Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients ("ASU 2016-12") which addresses narrow-scope improvements to the guidance on collectibility, non-cash consideration, and completed contracts at transition and provides a practical expedient for contract modifications at transition and an accounting policy election related to the presentation of sales taxes and other similar taxes collected from customers.

The new standard permits adoption either by using (i) a full retrospective approach for all periods presented in the period of adoption or (ii) a modified retrospective approach with the cumulative effect of initially applying the new standard recognized at the date of initial application and providing certain additional disclosures. The Company will adopt the new standard effective January 1, 2018 using the modified retrospective transition method applied to those contracts which are not completed as of that date.

The Company has reached preliminary conclusions on key accounting assessments related to the standard and is in the process of evaluating the impact of the new standard on its accounting policies, processes and system requirements. The Company has assigned internal resources in addition to the engagement of third party service providers to assist in its evaluation. Additionally, the Company expects to make investments in new systems or enhancement of existing systems to enable timely and accurate reporting under the new standard. While the Company continues to perform further assessment of all potential impacts under the new standard, the Company expects the timing of revenue recognition to be accelerated for certain performance obligations related to certain revenue arrangements which are currently deferred until customer acceptance. Depending on the outcome of the Company's final evaluation, the timing of when revenue is recognized could change significantly for those revenue arrangements under the new standard.

In connection with the adoption of the new revenue standard, the Company will also adopt ASC 340-40, Other Assets and Deferred Costs - Contracts with Customers, with respect to capitalization and amortization of incremental costs of obtaining a contract effective January 1, 2018. As a result, the Company may need to capitalize additional costs of obtaining a contract, including sales commissions, as the guidance requires the capitalization of all incremental costs incurred to obtain a contract with a customer that it would not have incurred if the contract had not been obtained, provided it expects to recover the costs. The Company expects that sales commissions as a result of obtaining customer contracts are recoverable, and as a result, the Company will defer certain sales commissions and amortize them over the period that the related revenue is recognized.

While the Company continues to assess all the potential impacts of the new standard, including the areas described above, and anticipates this quantifiable impact on its consolidated financial statements, the Company is not able to quantify or cannot reasonably estimate quantitative information related to the impact of the new standard on its consolidated financial statements at this time.

Concentration of Customer Risk

The Company had one customer that accounted for more than 10% of its total revenue for the three months ended September 30, 2017 and two customers that each accounted for more than 10% of its total revenue for the nine months ended September 30, 2017. These two customers each accounted for more than 10% of the Company's total revenue for the three and nine months ended September 24, 2016. These two customers together represented 41% and 43% of the Company's total revenue for the three and nine months ended September 30, 2017, respectively, and 37% and 34% for the three and nine months ended September 24, 2016, respectively. One of these two customers represented more than 10% of the Company's accounts receivable as of September 30, 2017 and each of these two customers represented more than 10% of the Company's accounts receivable as of December 31, 2016.

3. Cash, Cash Equivalents and Marketable Securities

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.

Cash equivalents are stated at amounts that approximate fair value based on quoted market prices. Marketable securities are recorded at their fair values.

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 accumulated other comprehensive income (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 income (loss) to results of operations as other income (expense).

The Company, to date, has not determined that any of the unrealized losses on its investments are considered to be other-than-temporary. The Company reviews its investment portfolio to determine if any security is other-than-temporarily impaired, which would require the Company to record an impairment charge in the period any such determination is made. In making this judgment, the Company evaluates, among other things: the duration and extent to which the fair value of a security is less than its cost; the financial condition of the issuer and any changes thereto; and the Company's intent and ability to hold its investment for a period of time sufficient to allow for any anticipated recovery in market value, or whether the Company will more likely than not be required to sell the security before recovery of its amortized cost basis. The Company has evaluated its investments as of September 30, 2017 and has determined that no investments with unrealized losses are other-than-temporarily impaired. No investments have been in a continuous loss position for greater than one year.

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

	September 30, 2017	December 31, 2016
Cash and cash equivalents:		
Cash	\$ 55,058	\$ 34,340
Money market funds	9,126	15,020
Commercial paper	—	999
Total cash and cash equivalents	<u>64,184</u>	<u>50,359</u>
Marketable securities:		
Corporate debt securities	—	17,272
Commercial paper	2,400	6,275
U.S. government agency securities	4,198	4,201
Total marketable securities	<u>6,598</u>	<u>27,748</u>
	<u>\$ 70,782</u>	<u>\$ 78,107</u>

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

As of September 30, 2017, all marketable securities were due in one year or less; and the amortized cost and fair value of marketable securities were as follows (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Commercial paper	\$ 2,401	\$ —	\$ (1)	\$ 2,400
U.S. government agency securities	4,200	—	(2)	4,198
	<u>\$ 6,601</u>	<u>\$ —</u>	<u>\$ (3)</u>	<u>\$ 6,598</u>

As of December 31, 2016, the amortized cost and fair value of marketable securities were as follows (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Corporate debt securities	\$ 17,279	\$ 1	\$ (8)	\$ 17,272
Commercial paper	6,275	—	—	6,275
U.S. government agency securities	4,200	1	—	4,201
	<u>\$ 27,754</u>	<u>\$ 2</u>	<u>\$ (8)</u>	<u>\$ 27,748</u>

4. 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 following table sets forth the Company's financial assets measured at fair value on a recurring basis as of September 30, 2017 and December 31, 2016, based on the three-tier fair value hierarchy (in thousands):

As of September 30, 2017	Level 1	Level 2	Total
Money market funds	\$ 9,126	\$ —	\$ 9,126
Commercial paper	—	2,400	2,400
U.S. government agency securities	—	4,198	4,198
	<u>\$ 9,126</u>	<u>\$ 6,598</u>	<u>\$ 15,724</u>

As of December 31, 2016	Level 1	Level 2	Total
Money market funds	\$ 15,020	\$ —	\$ 15,020
Corporate debt securities	—	17,272	17,272
Commercial paper	—	7,274	7,274
U.S. government agency securities	—	4,201	4,201
	<u>\$ 15,020</u>	<u>\$ 28,747</u>	<u>\$ 43,767</u>

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 fair values of corporate debt securities, commercial paper and U.S. government agency securities classified as Level 2 were derived from quoted market prices for similar instruments indexed to prevailing market yield rates. The Company has no level 3 financial assets. The Company did not have any transfers between Level 1 and Level 2 of the fair value hierarchy during the nine months ended September 30, 2017 and September 24, 2016.

5. Goodwill

Goodwill was recorded as a result of the Company's acquisitions of Occam Networks, Inc. ("Occam") in February 2011 and Optical Solutions, Inc. in February 2006. This goodwill is not deductible for tax purposes, and there have been no adjustments to goodwill since the acquisition dates.

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 at the end of the second quarter of each year. Management has determined that the Company operates as a single reporting unit and, therefore, evaluates goodwill impairment at the enterprise level. Management assessed qualitative factors to determine whether it was more likely than not (that is, a likelihood of more than 50 percent) that the fair value of the Company was less than its carrying amount, including goodwill, as of July 1, 2017. In assessing the qualitative factors, management considered 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. Management concluded that the fair value of the Company was more likely than not greater than its carrying amount as of July 1, 2017. As such, it was not necessary to perform the two-step goodwill impairment test at the time.

There have been no significant events or changes in circumstances subsequent to the 2017 annual impairment test that would more likely than not indicate that the carrying value of goodwill may have been impaired as of September 30, 2017. Therefore, there was no impairment to the carrying value of the Company's goodwill as of September 30, 2017.

6. Balance Sheet Details

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

	September 30, 2017	December 31, 2016
Accounts receivable	\$ 45,630	\$ 52,792
Allowance for doubtful accounts	(550)	(518)
Product return reserve	(853)	(938)
	<u>\$ 44,227</u>	<u>\$ 51,336</u>

Inventory consisted of the following (in thousands):

	September 30, 2017	December 31, 2016
Raw materials	\$ 1,082	\$ 1,827
Finished goods	35,239	42,718
	<u>\$ 36,321</u>	<u>\$ 44,545</u>

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

	September 30, 2017	December 31, 2016
Test equipment	\$ 46,580	\$ 43,580
Computer equipment and software	33,652	30,306
Furniture and fixtures	2,890	2,831
Leasehold improvements	6,759	6,898
Total	89,881	83,615
Accumulated depreciation and amortization	(72,884)	(65,631)
	<u>\$ 16,997</u>	<u>\$ 17,984</u>

Accrued liabilities consisted of the following (in thousands):

	September 30, 2017	December 31, 2016
Accrued compensation and related benefits	\$ 23,890	\$ 19,541
Accrued professional and consulting fees	12,222	8,205
Accrued warranty and retrofit	8,454	12,214
Advance customer payments	5,211	20,726
Accrued excess and obsolete inventory at contract manufacturers	1,819	1,327
Accrued customer rebates	828	1,931
Accrued restructuring charges	195	—
Accrued other	6,782	5,771
	<u>\$ 59,401</u>	<u>\$ 69,715</u>

Advance customer payments as of September 30, 2017 and December 31, 2016 primarily included \$3.4 million and \$20.3 million, respectively, which the Company received as payments in advance of completion of final customer acceptance of the products and services provided in connection with turnkey network improvement projects for a customer.

Deferred revenue consisted of the following (in thousands):

	September 30, 2017	December 31, 2016
Current:		
Products and services	\$ 24,512	\$ 24,472
Extended warranty	3,716	3,382
	<u>28,228</u>	<u>27,854</u>
Long-term:		
Products and services	18	22
Extended warranty	21,155	20,215
	<u>21,173</u>	<u>20,237</u>
	<u>\$ 49,401</u>	<u>\$ 48,091</u>

Deferred cost of revenue consisted of costs incurred for products and services for which revenue has been deferred or not yet earned.

7. 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 September 30, 2017 (in thousands):

<u>Period</u>	<u>Minimum Future Lease Payments</u>
Remainder of 2017	\$ 756
2018	2,794
2019	1,082
2020	738
2021	286
Thereafter	19
	<u>\$ 5,675</u>

The Company leases its primary office space in Petaluma, California under a lease agreement ("Petaluma Lease") that expires February 2019. On January 28, 2013, the Company entered into an amendment to its Petaluma Lease ("Amendment") to extend the lease term to February 2019. In connection with the Petaluma Lease and the Amendment, the Company received lease incentives of \$1.2 million and \$0.4 million, respectively, which can be used for leasehold improvements or be applied as credits to rent payments. The Company capitalized the full amount of the lease incentives upon inception of the respective agreement and these incentives are being amortized to reduce rent expense over the extended lease term. As of September 30, 2017, total unamortized lease incentive is not significant. Payments under the Company's operating leases that escalate over the term of the lease are recognized as rent expense on a straight-line basis.

The above table also includes future minimum lease payments primarily for our facilities in Minneapolis, Minnesota; Nanjing, China; Richardson, Texas; and San Jose, and Santa Barbara, California, which expire at various dates through 2022.

For the three and nine months ended September 30, 2017, total rent expense of the Company was \$0.9 million and \$2.7 million, respectively. For the three and nine months ended September 24, 2016, total rent expense of the Company was \$0.9 million and \$2.6 million, respectively.

Purchase Commitments

The Company's primary contract manufacturers place orders for component inventory in advance based upon the Company's build forecasts in order to reduce manufacturing lead times and ensure adequate component supply. The components are used by the contract manufacturers to build the products included in the build forecasts. The Company generally does not take ownership of the components held by contract manufacturers. The Company places purchase orders with its contract manufacturers in order to fulfill its monthly finished product inventory requirements. The Company incurs a liability when the contract manufacturer has converted the component inventory to a finished product and takes ownership of the inventory when transferred to the designated shipping warehouse. In the event of termination of services with a contract manufacturer, the Company may be required to purchase the remaining components inventory held by the contract manufacturer as well as any outstanding orders pursuant to the contractual provisions with such contract manufacturer. As of September 30, 2017, the Company had approximately \$62.6 million of outstanding purchase commitments for inventories to be delivered by its suppliers, including contract manufacturers, within one year.

The Company has from time to time, and subject to certain conditions, reimbursed its primary contract manufacturer for component inventory purchases when this inventory has been rendered excess or obsolete, for example due to manufacturing and engineering change orders resulting from design changes, manufacturing discontinuation of parts by its suppliers, or in cases where inventory levels greatly exceed projected demand. The estimated excess and obsolete inventory liabilities related to such manufacturing and engineering change orders and other factors, which are included in accrued liabilities in the accompanying balance sheets, were \$1.8 million and \$1.3 million as of September 30, 2017 and December 31, 2016, respectively. The Company records these amounts in cost of products and services in the accompanying Condensed Consolidated Statements of Comprehensive Income (Loss).

Contingencies

The Company evaluates the circumstances regarding outstanding and potential litigation and other contingencies on a quarterly basis to determine whether there is at least a reasonable possibility that a loss exists requiring accrual or disclosure, and if so, whether an estimate of the possible loss or range of loss can be made, or whether such an estimate cannot be made. When a loss is probable and reasonably estimable, the Company accrues for such amount based on its estimate of the probable loss considering information available at the time. When a loss is reasonably possible, the Company discloses the estimated possible loss or range of loss in excess of amounts accrued if material. Except as otherwise disclosed below, the Company does not believe that there was a reasonable possibility that a material loss may have been incurred during the period presented with respect to the matters disclosed.

Accrued Warranty and Retrofit

The Company provides a standard warranty for its hardware products. Hardware generally has a one -, three - or five -year standard warranty from the date of shipment. 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 upon identification of such product failures. The Company accrues for potential warranty and retrofit claims based on the Company's historical product failure rates and historical costs incurred in correcting product failures along with other relevant information related to any specifically identified product failures. The Company's warranty and retrofit accruals are based on estimates of losses that are probable based on information available. The adequacy of the accrual is reviewed on a periodic basis and adjusted, if necessary, based on additional information as it becomes available. Changes in the Company's warranty and retrofit reserves in the periods as indicated were as follows (in thousands):

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Balance at beginning of period	\$ 9,265	\$ 9,152	\$ 12,214	\$ 9,564
Provision for warranty and retrofit charged to cost of revenue	2,057	3,180	5,661	6,292
Utilization of reserve	(2,868)	(948)	(9,421)	(4,073)
Adjustments to pre-existing reserve	—	(11)	—	(410)
Balance at end of period	\$ 8,454	\$ 11,373	\$ 8,454	\$ 11,373

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) procurement or license agreements, under which the Company may be required to indemnify licensors or vendors for certain claims that may be brought against them arising from the Company's acts or omissions with respect to the supplied products or technology.

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 Condensed Consolidated Balance Sheets.

8. Net Income (Loss) Per Common Share

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

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Numerator:				
Net income (loss)	\$ (17,853)	\$ 636	\$ (70,166)	\$ (15,919)
Denominator:				
Weighted-average common shares outstanding used to compute basic net income (loss) per share	50,336	48,773	49,960	48,578
Effect of dilutive common stock equivalents	—	536	—	—
Weighted-average common shares outstanding used to compute diluted net income (loss) per share	50,336	49,309	49,960	48,578
Net income (loss) per common share:				
Basic	\$ (0.35)	\$ 0.01	\$ (1.40)	\$ (0.33)
Diluted	\$ (0.35)	\$ 0.01	\$ (1.40)	\$ (0.33)
Potentially dilutive shares, weighted average	5,741	3,951	5,704	5,794

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, restricted stock units and performance restricted stock units. 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.

9. Stockholders' Equity

Equity Incentive Plans

As of September 30, 2017, the Company currently maintains two equity incentive plans, the 2002 Stock Plan and the 2010 Equity Incentive Award Plan (together, the "Plans"). These plans were approved by the stockholders and are described in the Company's Annual Report on Form 10-K filed with the SEC on February 28, 2017. The Company also maintains a Long Term Incentive Program under the 2010 Equity Incentive Award Plan. Under the Long Term Incentive Program, certain key employees of the Company are eligible for equity awards based on the Company's stock price performance. To date, awards granted under the Plans consist of stock options, restricted stock units ("RSUs") and performance restricted stock units ("PRSUs").

Stock Options

During the three and nine months ended September 30, 2017, 1,565,000 shares of stock options were granted with a weighted-average grant date fair value of \$3.45 per share, of which 1,165,000 shares with a weighted-average grant date fair value of \$3.43 per share were performance-based stock option awards which were granted by the Company to its executives. These performance-based stock option awards contain a one-year performance period and a subsequent three-year service period. The performance target is based on a combination of the Company's revenue and 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 25% of the earned shares on February 6, 2018 and 6.25% of the earned shares on the quarterly anniversary 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 performance-based stock options granted under this award shall be immediately forfeited and canceled without vesting of any shares.

During the three months ended September 30, 2017, no stock options were exercised. During the nine months ended September 30, 2017, 5,000 shares of stock options were exercised at a weighted-average exercise price of \$5.99 per share. As of September 30, 2017, unrecognized stock-based compensation expense of \$3.4 million related to stock options, net of estimated forfeitures, is expected to be recognized over a weighted-average period of 2.3 years.

Restricted Stock Units

During the three months ended September 30, 2017, 92,266 shares of RSUs were granted with a weighted-average grant date fair value of \$6.34 per share. During the nine months ended September 30, 2017, 505,236 shares of RSUs were granted with a weighted-average grant date fair value of \$6.75 per share. During the three months ended September 30, 2017, 107,107 shares of RSUs vested, net of shares withheld for statutory income tax purposes, and were converted to an equivalent number of shares of common stock. During the nine months ended September 30, 2017, 670,095 shares of RSUs vested, net of shares withheld for statutory income tax purposes, and were converted to an equivalent number of shares of common stock. Taxes withheld from employees of \$0.1 million were remitted to the relevant taxing authorities during the three months ended September 30, 2017. Taxes withheld from employees of \$1.8 million were remitted to the relevant taxing

authorities during the nine months ended September 30, 2017. As of September 30, 2017, unrecognized stock-based compensation expense of \$10.2 million related to RSUs, net of estimated forfeitures, was expected to be recognized over a weighted-average period of 2.2 years.

Performance Restricted Stock Units

In 2016, the Company granted PRSUs to its executives with a one -year performance period and a subsequent two -year service period. The performance target for these particular performance-based awards is based on the Company's revenue 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 PRSU award shall vest with respect to 50% of the PRSUs subject to the award in February 2017, 25% in February 2018 and 25% in February 2019, 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 PRSUs granted under this award shall be immediately forfeited and canceled without vesting of any shares.

During the three months ended September 30, 2017, no PRSUs vested. During the nine months ended September 30, 2017, 325,000 shares of PRSUs vested and were converted into 195,656 shares of common stock, net of shares withheld for statutory income tax purposes. Taxes withheld from employees of \$0.9 million were remitted to the relevant taxing authorities during the nine months ended September 30, 2017. As of September 30, 2017, unrecognized stock-based compensation expense of \$0.3 million related to PRSUs, net of estimated forfeitures, is expected to be recognized over a weighted-average period of 10.3 months.

Employee Stock Purchase Plans

The Company's Amended and Restated Employee Stock Purchase Plan ("Restated ESPP") allows employees to purchase shares of the Company's common stock through payroll deductions of up to 15 percent 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 Restated ESPP were six-month periods commencing on November 2nd and May 2nd of each year, effective November 2, 2015. In July 2016, the Compensation Committee of the Company's board of directors approved a change in those six-month period commencement dates to May 15th and November 15th of each year, effective May 15, 2017. The ending date of the Restated ESPP offering period which commenced on November 2, 2016 was extended until May 14, 2017 as a result of this change. The price of common stock purchased under the Restated ESPP is 85 percent 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. As of September 30, 2017, there were 3,000,217 shares available for issuance under the Restated ESPP.

During the three months ended September 30, 2017, no shares were purchased under the Restated ESPP. During the nine months ended September 30, 2017, 119,011 shares were purchased under the Restated ESPP. As of September 30, 2017, unrecognized stock-based compensation expense of \$0.2 million related to the Restated ESPP is expected to be recognized over a remaining service period of 1.5 months.

On March 30, 2017, the Company's board of directors, upon recommendation of the Compensation Committee, approved the adoption of the Calix, Inc. 2017 Nonqualified Employee Stock Purchase Plan ("Nonqualified ESPP"). The Nonqualified ESPP was approved by our stockholders on May 17, 2017, with the initial offering period commencing July 1, 2017. Under the Nonqualified ESPP, eligible employees can purchase shares of the Company's common stock through payroll deductions of up to 25 percent 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 Nonqualified ESPP provides two six - month offering periods, from January 1 through June 30 and July 1 through December 31 of each year. The maximum number of shares of common stock currently authorized for issuance under the Nonqualified ESPP is 1,000,000 shares, with a maximum of 500,000 shares allocated per purchase period. As of September 30, 2017, unrecognized stock-based compensation expense of \$1.2 million related to the Nonqualified ESPP is expected to be recognized over a remaining service period of 1.3 years.

Stock-Based Compensation Expense

Stock-based compensation expense associated with stock options, RSUs, PRSUs and purchase rights under the Restated ESPP and Nonqualified 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 on a straight-line basis.

The fair value of stock option and employee stock purchase right under the Restated ESPP is estimated at the grant date using the Black-Scholes option valuation model.

The fair value of RSUs and 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 PRSUs with graded vesting features and which contain both a performance and a service condition is measured based on the closing market price of the Company's common stock on the date of grant, and is recognized, net of forfeitures, as expense over the requisite service period using the graded vesting attribution method.

Stock-based compensation expense associated with performance-based stock options with graded vesting features and which contain both a performance and a service condition is measured based on fair value of stock option 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 associated with PRSUs and performance-based stock option awards with graded vesting features and which contain both a performance and a service condition 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. In February 2017, the Compensation Committee of the Company’s board of directors determined that the performance condition related to PRSUs granted to executives in 2016 was met based on the Company’s actual revenue recognized during 2016. The probability of meeting the performance condition related to performance-based stock option awards granted to executives in August 2017 was assessed to be unlikely as of September 30, 2017 ; as such, no stock-based compensation expense was recognized for these performance-based stock option awards as of September 30, 2017 .

The fair value of PRSUs with a market condition is estimated on the date of award using a Monte Carlo simulation model to estimate the total shareholder return of the Company’s stock in relation to the peer group over each performance period. Compensation cost on PRSUs with a market condition is not adjusted for subsequent changes in the Company’s stock performance or the level of ultimate vesting.

10. Accumulated Other Comprehensive Loss

The table below summarizes the changes in accumulated other comprehensive loss by component for the periods indicated (in thousands):

	Three Months Ended					
	September 30, 2017			September 24, 2016		
	Unrealized Gains and Losses on Available-for-Sale Marketable Securities	Foreign Currency Translation Adjustments	Total	Unrealized Gains and Losses on Available-for-Sale Marketable Securities	Foreign Currency Translation Adjustments	Total
Balance at beginning of period	\$ (7)	\$ (457)	\$ (464)	\$ 12	\$ (142)	\$ (130)
Other comprehensive income (loss)	4	116	120	(9)	(87)	(96)
Balance at end of period	\$ (3)	\$ (341)	\$ (344)	\$ 3	\$ (229)	\$ (226)

	Nine Months Ended					
	September 30, 2017			September 24, 2016		
	Unrealized Gains and Losses on Available-for-Sale Marketable Securities	Foreign Currency Translation Adjustments	Total	Unrealized Gains and Losses on Available-for-Sale Marketable Securities	Foreign Currency Translation Adjustments	Total
Balance at beginning of period	\$ (6)	\$ (650)	\$ (656)	\$ (94)	\$ (101)	\$ (195)
Other comprehensive income (loss)	3	309	312	97	(128)	(31)
Balance at end of period	\$ (3)	\$ (341)	\$ (344)	\$ 3	\$ (229)	\$ (226)

Realized gains and losses on sales of available-for-sale marketable securities, if any, are reclassified from accumulated other comprehensive loss to “Other income (expense)” in the accompanying Condensed Consolidated Statements of Comprehensive Income (Loss).

11. Credit Facility

The Company entered into a credit agreement with Bank of America, N.A. on July 29, 2013 (as amended on December 23, 2015, the “Credit Agreement”). The Credit Agreement provided for a revolving facility in the aggregate principal amount of up to \$50.0 million , with any borrowings limited to a maximum consolidated leverage ratio of consolidated funded indebtedness to consolidated EBITDA (as defined in the Credit Agreement). On August 7, 2017, the Company contemporaneously terminated the Credit Agreement in connection with entering into a loan and security agreement (the “Loan Agreement”) with Silicon Valley Bank (“SVB”).

The Loan Agreement provides for a senior secured revolving credit facility with SVB, 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. The credit facility includes a \$10.0 million sublimit for the issuance of letters of credit. The letters of credit issued under the Loan Agreement will reduce, on a dollar-for-dollar basis, the amount available under the credit facility. Additionally, the Company can borrow up to \$5.0 million on a non-formula revolver until January 15, 2018, which will reduce, on a dollar-for-dollar basis, the amount available under the credit facility so that at no time will more than \$30.0 million in principal amount be outstanding under the Loan Agreement. The credit facility matures and all outstanding amounts become due and payable on August 7, 2019. Subject to certain exceptions, the Company will also be required to pay to SVB a fee of \$0.3 million if it terminates the credit facility prior to August 7, 2018. The credit facility is secured by substantially all of the

Company's assets, including the Company's intellectual property. Loans under the credit facility 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 0.50% to 1.50% for prime rate advances and between 2.00% and 3.00% for LIBOR advances based on the Company's maintenance of an applicable liquidity ratio. As of September 30, 2017, the Company was in compliance with these requirements. The credit facility includes affirmative and negative covenants applicable to the Company and its subsidiaries. Furthermore, the Loan Agreement requires the Company to maintain a liquidity ratio at minimum levels set forth in more detail in the 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. As of September 30, 2017, the outstanding balance on the line of credit was \$30 million.

12. Income Taxes

The following table presents the provision for income taxes from continuing operations and the effective tax rates for the periods indicated (in thousands, except percentages):

	Three Months Ended		Nine Months Ended	
	September 30, 2017	September 24, 2016	September 30, 2017	September 24, 2016
Provision for income taxes	\$ 225	\$ 209	\$ 1,075	\$ 454
Effective tax rate	(1.3)%	24.7%	(1.6)%	(2.9)%

The income tax provision for the three and nine months ended September 30, 2017 and September 24, 2016 consisted primarily of foreign income taxes. The effective tax rate for the three and nine months ended September 30, 2017 and September 24, 2016 was determined using an estimated annual effective tax rate adjusted for discrete items, if any, that occurred during the respective periods. The Company's effective tax rate for the three and nine months ended September 30, 2017 and September 24, 2016 is impacted by the change in foreign income tax expense.

Deferred tax assets are recognized if realization of such assets is more likely than not. The Company has established and continues to maintain a full valuation allowance against its net deferred tax assets, with the exception of certain foreign deferred tax assets, as the Company does not believe that realization of those assets is more likely than not.

The Company's effective tax rate may be subject to fluctuation during the year as new information is obtained, which may affect the assumptions used to estimate the annual effective tax rate, including factors such as the mix of forecasted pre-tax earnings in the various jurisdictions in which it operates, valuation allowances against deferred tax assets, the recognition or de-recognition of tax benefits related to uncertain tax positions, and changes in or the interpretation of tax laws in jurisdictions where it conducts business.

13. Restructuring Charges

The Company adopted a restructuring plan in March 2017. This restructuring plan realigns the Company's business, increasing its focus towards its investments in software defined access and cloud products, while reducing its cost structure in its traditional systems business. The Company began to take action under this plan beginning in March 2017 and recognized \$0.6 million and \$2.3 million of restructuring charges for the three and nine months ended September 30, 2017, respectively, consisting primarily of severance and other one-time termination benefits. Restructuring charges are presented separately under operating expenses in the accompanying Condensed Consolidated Statements of Comprehensive Income (Loss).

The following table summarizes the activities related to the restructuring charges pursuant to the above restructuring plan (in thousands):

	Three Months Ended September 30, 2017	Nine Months Ended September 30, 2017
Liability at beginning of period	\$ 600	\$ —
Restructuring charges for the period	612	2,268
Cash payments	(1,017)	(2,073)
Liability at end of period	\$ 195	\$ 195

The Company currently estimates that this plan will result in pre-tax restructuring charges totaling up to \$4.0 million with approximately up to \$1.7 million of additional charges expected to be recognized during the fourth quarter of 2017. These charges are primarily cash-based.

ITEM 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

This report includes "forward-looking statements" within the meaning of Section 27A of the Securities Act and Section 21E of the Securities and Exchange Act of 1934, as amended. All statements other than statements of historical facts are "forward-looking statements" for purposes of these provisions, including any projections of earnings, revenue or other financial items, any statement of or concerning the

following: the plans and objectives of management for future operations, proposed new products or licensing, product development, anticipated customer demand or capital expenditures, future economic and/or market conditions or performance, and assumptions underlying any of the above. In some cases, forward-looking statements can be identified by the use of terminology such as “may,” “will,” “expects,” “believes,” “intends,” “plans,” “anticipates,” “estimates,” “projects,” “potential,” or “continue” or the negative thereof or other comparable terminology. Although we believe that the expectations reflected in the forward-looking statements contained herein are reasonable, there can be no assurance that such expectations or any of the forward-looking statements will prove to be correct, and actual results could differ materially from those projected or assumed in the forward-looking statements. Our future financial condition and results of operations, as well as any forward-looking statements, are subject to inherent risks and uncertainties, including those identified in the Risk Factors discussed in Part II, Item 1A, in the discussion below, as well as in other sections of this report and in our Annual Report on Form 10-K for the year ended December 31, 2016. All forward-looking statements and reasons why results may differ included in this Quarterly Report on Form 10-Q 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 broadband communications access platforms, systems and software for fiber- and copper-based network architectures and a pioneer in software defined access and cloud products focused on access networks and the subscriber. Calix’s portfolio combines AXOS, a software platform for access, with Calix Cloud, innovative cloud products for network data analytics and subscriber experience assurance. Together, they enable CSPs to transform their networks and enhance how they connect to their residential and business subscribers. We enable 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. We focus solely 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. We believe that continued innovation and investment in advanced platforms and systems are important elements of our growth strategy. Our most advanced systems operate on AXOS, a network operating system and software platform built for the specific needs of the access network that allows for all software functions in the access network to be developed and run without dependence on underlying hardware and associated silicon chipsets.

We market our access systems and related software to CSPs globally through our direct sales force as well as a number of resellers. At the end of the third quarter of 2017, over 24 million ports of the Calix portfolio have been deployed at a growing number of CSPs worldwide. Our customers range from smaller, regional CSPs to some of the world’s largest CSPs. We have enabled over 1,300 customers to deploy gigabit passive optical network, Active Ethernet and point-to-point Ethernet fiber access networks.

Our revenue was \$128.8 million and \$372.5 million for the three and nine months ended September 30, 2017, respectively, compared to \$121.2 million and \$327.0 million for the three and nine months ended September 24, 2016, respectively. Our revenue levels and continued revenue growth will depend on our ability to continue to sell our access systems and software to existing customers and to attract new customers, particularly larger CSPs, globally. During the three months ended September 30, 2017, we continued to see growth in our services business to meet customer demand for turnkey solutions that include professional services together with the supply of equipment and materials, including projects that are funded by the Federal Communication Commission’s (FCC) current Connect America Fund program, CAF2. Specifically, during the nine months ended September 30, 2017, we completed a significant turnkey network improvement project that we had commenced in 2015, and continued work underway on previously-awarded CAF2 projects including completion of a large majority of these projects. Revenue for such projects is generally recognized only when all project requirements are completed, which typically requires longer periods depending on the nature and scope of the project. Similarly, some of the costs incurred by us for such projects, including labor and related costs, are deferred and recognized to cost of revenue when the associated revenue is recognized.

Revenue fluctuations result from many factors, including: increases or decreases in customer orders for our products and services, 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 also challenged by winter weather conditions that inhibit fiber deployment in outside plants. Our revenue levels are also dependent upon our customers’ timing of purchases and capital expenditure plans, including expenditure plans for turnkey solutions projects, which are generally non-recurring in nature. As of September 30, 2017, we had deferred product revenue of approximately \$16.8 million related to ongoing work in turnkey network improvement projects that will be recognized upon acceptance by the customer or upon agreed milestones. The timing of recognition of deferred revenue may cause significant fluctuations in our revenue and operating results from period to period.

Cost of revenue is strongly correlated to revenue and tends to fluctuate due to all of the above factors that could impact revenue. Factors that impacted our cost of revenue for the three and nine months ended September 30, 2017, and that may 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 and inventory write-downs. Cost of services revenue has been impacted, and is expected to continue to be impacted in future periods, by increases in the pace of professional services activity due to customer requirements and project deadlines, the timing of completion of project requirements, higher than anticipated costs associated with delivery of professional services for which project pricing is typically set at the outset of the project, charges related to cost overruns on services projects and inefficiencies associated with delays resulting from third party dependencies and incremental costs to rework. Cost of revenue also includes fixed expenses related to our internal operations, which could impact our cost of revenue as a percentage of revenue if there are large fluctuations in revenue.

Cost of revenue has a direct impact on gross profit and gross margins. During the three and nine months ended September 30, 2017, our gross profit and gross margin continued to be negatively impacted by an increase in our services revenue, which carries negative gross

margin, as a mix of total revenue. We have continued to incur higher costs related to our professional services business for turnkey network improvement projects, largely associated with projects initiated in 2016. Overall, 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, changes in the mix of products demanded and sold (and any related write-downs of existing inventory), 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. The timing of our recognition of deferred revenue and related deferred costs related to turnkey professional services projects could also result in lower gross profit and gross margin in the periods that such revenue is recognized, and the relative size of these projects could cause large fluctuations in our gross profit from period to period. Moreover, to the extent that deferred costs related to the professional services portion of turn key projects is determined to be unrecoverable, we incur a charge to cost of service revenue in the period such cost is determined to be unrecoverable. In connection with our recoverability assessment as of September 30, 2017, we wrote down our deferred costs by \$3.3 million. See the risk factor titled “An increase in revenue mix towards services will adversely affect our gross margins” below in the “Risk Factors” section of this Quarterly Report on Form 10-Q.

Our operating expenses have fluctuated based on the following factors: changes in headcount and personnel costs which comprise a significant portion of our operating expenses, timing of variable compensation expenses due to fluctuations in order volumes, timing of research and development expenses including investments in innovative solutions, such as next generation solutions and new customer segments, prototype builds and outsourced development projects, fluctuations in stock-based compensation expenses due to timing of equity grants or other factors affecting vesting, changes in acquisition-related expenses and timing of litigation-related costs. During the three and nine months ended September 30, 2017 as compared with the corresponding periods in 2016, our total operating expense increased due to increases in headcount and outside contractors, primarily for research and development and, to a lesser extent, as a result of severance-related expenses incurred in the three and nine months ended September 30, 2017. In March 2017, we adopted a restructuring plan to realign our business to increase focus towards investments in software defined access and cloud products and to reduce costs in our traditional systems business, which we expect will result in revised pre-tax restructuring charges estimated to be up to \$4.0 million in 2017, of which we incurred \$2.3 million during the nine months ended September 30, 2017. We anticipate that our operating expenses will be relatively consistent over the next several quarters in absolute dollars, but will decline as a percentage of revenue over time.

Our net loss was \$17.9 million and \$70.2 million for the three and nine months ended September 30, 2017, respectively, compared to a net income of \$0.6 million and net loss of \$15.9 million for the three and nine months ended September 24, 2016, respectively. Since our inception we have incurred significant losses and, as of September 30, 2017, we had an accumulated deficit of \$654.5 million. Further, as a result of the fluctuations described above and a number of other factors, many of which are outside our control, our quarterly 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. Management bases its 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. Our management evaluates its estimates, assumptions and judgments on an ongoing basis.

Our critical accounting policies and estimates are described under “Critical Accounting Policies and Estimates” in “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in our Annual Report on Form 10-K for the year ended December 31, 2016. During the nine months ended September 30, 2017, there have been no significant changes in our critical accounting policies and estimates.

Recent Accounting Pronouncements

See Note 2 to the unaudited condensed consolidated financial statements set forth in Part I, Item 1 of this Quarterly Report on Form 10-Q for a full description of recent accounting pronouncements, including the expected dates of adoption and estimated effects on results of operations and financial condition, which is incorporated herein by reference.

Results of Operations

Comparison of the Three and Nine Months Ended September 30, 2017 and September 24, 2016

Revenue

Our revenue is comprised of the following:

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

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

	Three Months Ended				Nine Months Ended			
	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent
Revenue:								
Products	\$ 106,442	\$ 114,029	\$ (7,587)	(7)%	\$ 305,395	\$ 305,853	\$ (458)	— %
Services	22,385	7,158	15,227	213 %	67,073	21,134	45,939	217 %
	<u>\$ 128,827</u>	<u>\$ 121,187</u>	<u>\$ 7,640</u>	6 %	<u>\$ 372,468</u>	<u>\$ 326,987</u>	<u>\$ 45,481</u>	14 %
Percent of total revenue:								
Products	83%	94%			82%	94%		
Services	17%	6%			18%	6%		
	<u>100%</u>	<u>100%</u>			<u>100%</u>	<u>100%</u>		

Our revenue increased by \$7.6 million , or 6% , for the three months ended September 30, 2017 and \$45.5 million , or 14% , for the nine months ended September 30, 2017 as compared with the corresponding periods in 2016 . This was mainly due to an increase in services revenue by \$15.2 million , or 213% , for the three months ended September 30, 2017 and \$45.9 million , or 217% , for the nine months ended September 30, 2017 , primarily driven by the completion of services associated with a significant turnkey network improvement project substantially completed during the first quarter of 2017 and the completion of a number of sites from previously-awarded CAF2 projects. Our product revenue decrease d by \$7.6 million for the three months ended September 30, 2017 as compared with the corresponding period in 2016 mainly due to lower shipment levels to one of our large Tier 2 customers relative to the prior year period. During the three and nine months ended September 30, 2017 , revenue generated in the United States was \$117.5 million and \$332.1 million or 91% and 89% , respectively, of our total revenue, compared to \$111.8 million and \$298.8 million , or 92% and 91% of our total revenue, for the same periods in 2016 . International revenue was \$11.3 million and \$40.3 million , or 9% and 11% of our total revenue, for the three and nine months ended September 30, 2017 , respectively, compared to \$9.4 million and \$28.1 million , or 8% and 9% of our total revenue, for the same periods in 2016 .

We had one customer that accounted for more than 10% of our total revenue during the three months ended September 30, 2017 . See Note 2 to the unaudited condensed consolidated financial statements set forth in Part I, Item 1 of this Quarterly Report on Form 10-Q 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):

	Three Months Ended				Nine Months Ended			
	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent
Cost of revenue:								
Products	\$ 55,494	\$ 60,662	\$ (5,168)	(9)%	\$ 171,166	\$ 159,856	\$ 11,310	7%
Services	28,700	6,981	21,719	311 %	78,969	18,099	60,870	336%
	<u>\$ 84,194</u>	<u>\$ 67,643</u>	<u>\$ 16,551</u>	24 %	<u>\$ 250,135</u>	<u>\$ 177,955</u>	<u>\$ 72,180</u>	41%

Our cost of revenue increase d by \$16.6 million and \$72.2 million during the three and nine months ended September 30, 2017 , respectively, as compared with the corresponding periods in 2016 . This was primarily attributable to an increase in cost of service revenue by \$21.7 million and \$60.9 million during those respective periods, as we experienced higher levels of service activities, as well as higher costs attributed to rework, delays, unanticipated costs and overruns (including third party costs) for our turnkey network improvement projects. Our product cost of revenue also decrease d by \$5.2 million for the three months ended September 30, 2017 as compared with the corresponding period in 2016 mainly due to lower shipments as described above, and increase d by \$11.3 million for the nine months ended September 30, 2017 as compared to the year ago period mainly due to product mix. Our warranty and retrofit costs primarily related to certain retrofit charges for two specific product families also decreased by approximately \$1.1 million and \$0.6 million during the three and nine months ended September 30, 2017 , respectively, as compared with the corresponding periods in 2016 . This is partly offset by increases in our inventory write-downs attributed to slow moving inventories by \$0.5 million and \$0.8 million during those respective periods.

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

	Three Months Ended				Nine Months Ended			
	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent
Gross profit:								
Products	\$ 50,948	\$ 53,367	\$ (2,419)	(5)%	\$ 134,229	\$ 145,997	\$ (11,768)	(8)%
Services	(6,315)	177	(6,492)	(3,668)%	(11,896)	3,035	(14,931)	(492)%
Total gross profit	\$ 44,633	\$ 53,544	\$ (8,911)	(17)%	\$ 122,333	\$ 149,032	\$ (26,699)	(18)%
Gross margin:								
Products	48 %	47%			44 %	48%		
Services	(28)%	2%			(18)%	14%		
Total gross margin	35 %	44%			33 %	46%		

Gross profit decreased to \$44.6 million and \$122.3 million during the three and nine months ended September 30, 2017, respectively, from \$53.5 million and \$149.0 million during the corresponding periods in 2016. Gross margin decreased to 35% and 33% during the three and nine months ended September 30, 2017, respectively, from 44% and 46% during the corresponding periods in 2016. The decrease in gross profit and gross margin during the three and nine months ended September 30, 2017 was primarily due to an increase in revenue mix toward service revenue as we continued to grow our professional services business, an increased level of activities in our turnkey network improvement projects and higher costs attributed to rework and overruns. The rework costs and overruns generally relate to projects that were started in 2016 that incurred higher than anticipated costs, project delays, third party dependencies, quality issues associated with subcontracted work, rework to meet customer requirements and longer than anticipated time to complete. The large majority of these 2016 projects were completed by the end of the third quarter of 2017. Looking forward, we expect to continue to drive efficiencies in our delivery of professional services for turnkey network improvement projects.

The decrease within the products category was partly attributed to product and regional mix as well as higher inventory write-downs, partly offset by lower warranty and retrofit charges as described above.

Operating Expenses

Research and Development Expenses

The following table sets forth our research and development expenses (dollars in thousands):

	Three Months Ended				Nine Months Ended			
	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent
Research and development	\$ 32,633	\$ 28,119	\$ 4,514	16%	\$ 99,391	\$ 75,925	\$ 23,466	31%
Percent of total revenue	25%	23%			27%	23%		

The increase in research and development expenses by \$4.5 million during the three months ended September 30, 2017 as compared with the corresponding period in 2016 was primarily due to an increase in expenses for outside contractors by \$4.5 million and expenditures relating to prototype and expendable equipment used for research and development activities by \$0.4 million primarily for development services including investments in next generation technologies to pursue broader growth opportunities. Our personnel for research and development also increased during the three months ended September 30, 2017 as compared with the corresponding period in 2016 which resulted in higher compensation and employee benefits (other than bonuses) of \$0.6 million. The increase was partly offset by lower employee bonuses of \$0.7 million during the three months ended September 30, 2017 as compared with the corresponding period in 2016.

The increase in research and development expenses by \$23.5 million during the nine months ended September 30, 2017 as compared with the corresponding period in 2016 was primarily due to an increase in expenses for outside contractors by \$13.2 million and expenditures relating to prototype and expendable equipment used for research and development activities by \$2.7 million primarily for development services including investments in next generation technologies to pursue broader growth opportunities. Our personnel for research and development also increased during the nine months ended September 30, 2017 as compared with the corresponding period in 2016 which resulted in higher compensation and employee benefits (other than bonuses) of \$7.6 million. The increase was partly offset by lower employee bonuses of \$0.7 million during the nine months ended September 30, 2017 as compared with the corresponding period in 2016.

We increased our research and development efforts to grow our product portfolio and to make strategic investments in innovative solutions, including next generation platforms and new market segments. We intend to continue to moderate our investments in research and development as our next generations systems and software platforms are brought to market.

Sales and Marketing Expenses

The following table sets forth our sales and marketing expenses (dollars in thousands):

	Three Months Ended				Nine Months Ended			
	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent
Sales and marketing	\$ 18,448	\$ 20,575	\$ (2,127)	(10)%	\$ 59,306	\$ 58,850	\$ 456	1%
Percent of total revenue	14%	17%			16%	18%		

The decrease in sales and marketing expenses by \$2.1 million during the three months ended September 30, 2017 as compared with the corresponding period in 2016 was primarily due to lower compensation and employee benefits of \$1.1 million arising from changes in personnel as a result of our restructuring plan and lower stock-based compensation expense of \$0.8 million.

Sales and marketing expenses were relatively flat during the nine months ended September 30, 2017 as compared with the corresponding period in 2016 .

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

General and Administrative Expenses

The following table sets forth our general and administrative expenses (dollars in thousands):

	Three Months Ended				Nine Months Ended			
	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent
General and administrative	\$ 10,203	\$ 8,615	\$ 1,588	18%	\$ 30,161	\$ 32,940	\$ (2,779)	(8)%
Percent of total revenue	8%	7%			8%	10%		

The increase in general and administrative expenses by \$1.6 million for the three months ended September 30, 2017 as compared with the corresponding period in 2016 was due to higher professional services expense of \$2.0 million primarily related to outside consulting services for the implementation of a new SaaS-based enterprise resource planning (“ERP”) infrastructure, which was partially offset by a lower stock-based compensation expense of \$0.5 million.

The decrease in general and administrative expenses by \$2.8 million for the nine months ended September 30, 2017 as compared with the corresponding period in 2016 included legal fees and expenses related to the Occam litigation of \$6.4 million that did not recur in 2017 as the litigation was settled in 2016. The decrease was partially offset by increases in professional services expense of \$2.6 million primarily related to outside consulting services in 2017 for the implementation of the new ERP infrastructure, recoveries of legal fees and expenses in 2016 that did not recur in 2017 , compensation and employee benefits of \$1.3 million due to increase in headcount and severance benefits of \$0.5 million related to our separation agreement with our former Chief Financial Officer. We expect that general and administrative expenses will continue at current levels until the implementation of the new ERP infrastructure is completed, which is expected to occur in mid-2018.

Amortization of Intangible Asset

The intangible asset related to customer relationships had reached completion of its amortization period during the first quarter of 2016.

Restructuring Charges

In connection with a restructuring plan we adopted in March 2017, we recognized approximately \$0.6 million and \$2.3 million of restructuring charges during the three and nine months ended September 30, 2017 , respectively, consisting primarily of severance and other one-time termination benefits. See Note 13, “ *Restructuring Charges* ” of the Notes to Condensed Consolidated Financial Statements in this Quarterly Report on Form 10-Q for further details regarding this restructuring plan.

Litigation Settlement Gain

During the three and nine months ended September 24, 2016, we recognized a litigation settlement gain of \$4.5 million as a reduction to operating expense. This litigation settlement gain consisted of a litigation settlement accrual of \$4.5 million in partial recovery of out-of-pocket costs related to the Occam litigation.

Provision for Income Taxes

The following table sets forth our provision for income taxes (dollars in thousands):

	Three Months Ended				Nine Months Ended			
	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent	September 30, 2017	September 24, 2016	Variance in Dollars	Variance in Percent
Provision for income taxes	\$ 225	\$ 209	\$ 16	8%	\$ 1,075	\$ 454	\$ 621	137%
Effective tax rate	(1.3)%	24.7%			(1.6)%	(2.9)%		

The income tax provision for the three and nine months ended September 30, 2017 and September 24, 2016 consisted primarily of foreign income taxes. The effective tax rate for the three and nine months ended September 30, 2017 and September 24, 2016 was determined using an estimated annual effective tax rate adjusted for discrete items, if any, that occurred during the respective periods. Our effective tax rate for the three and nine months ended September 30, 2017 and September 24, 2016 is impacted by the change in foreign income tax expense.

Deferred tax assets are recognized if realization of such assets is more likely than not. We have established and continue to maintain a full valuation allowance against our net deferred tax assets, with the exception of certain foreign deferred tax assets, as we do not believe that realization of those assets is more likely than not.

Our effective tax rate may be subject to fluctuation during the year as new information is obtained, which may affect the assumptions used to estimate the annual effective tax rate, including factors such as the mix of forecasted pre-tax earnings in the various jurisdictions in which we operate, valuation allowances against deferred tax assets, the recognition or de-recognition of tax benefits related to uncertain tax positions, and changes in or the interpretation of tax laws in jurisdictions where we conduct business.

Liquidity and Capital Resources

We have historically funded our operations and investing activities primarily through cash generated from operations and sales of our common stock. At September 30, 2017, we had cash, cash equivalents and marketable securities of \$70.8 million, which consisted of deposits held at banks, money market mutual funds held at major financial institutions and highly liquid marketable securities such as commercial paper and U.S. government agency securities. This includes \$5.8 million of cash held by our foreign subsidiaries, primarily in China. As of September 30, 2017, 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.

Operating Activities

During the nine months ended September 30, 2017, cash used in operating activities increased as we continued to invest in research and development to pursue broader market and customer opportunities. Furthermore, during this period we continued to experience losses due to higher costs, delays, overruns and other inefficiencies associated with our professional services business for turnkey network improvement projects (including CAF2 projects). As described below, these turnkey network improvement projects generally involve greater working capital needs at the outset as services and products are supplied, while revenue and cash collections occur after projects are accepted or agreed-upon milestones are reached. Net cash used in operations of \$28.6 million for the nine months ended September 30, 2017 consisted of a net loss of \$70.2 million, partially offset by \$23.6 million of cash flow increases reflected in the net change in assets and liabilities and \$17.9 million of non-cash charges. Cash flow increases resulting from the net change in assets and liabilities primarily consisted of a decrease in deferred cost of revenue of \$11.9 million mainly due to recognition of associated costs related to turnkey network improvement projects that are either accepted or for which agreed-upon milestones are reached, partly offset by an increase in deferred revenue of \$1.3 million attributed to additional deferral of revenue related to turnkey network improvement projects, a decrease in inventories of \$8.2 million primarily due to higher inventory turnover, a decrease in accounts receivable of \$7.1 million mainly due to collection from one of our customers for turnkey improvement projects and an increase in accounts payable of \$5.5 million primarily due to the timing of inventory receipts and payments to our manufacturers. This was partially offset by a decrease in accrued expenses and other liabilities of \$10.1 million primarily due to a decrease in customer advance payments for turnkey services projects for one of our customers and partly due to the timing of our payments of payroll, sales commissions and other expenses. Non-cash charges primarily consisted of stock-based compensation of \$9.3 million, depreciation and amortization of \$7.6 million and amortization of intangible assets of \$0.8 million.

Net cash provided by operations of \$5.3 million for the nine months ended September 24, 2016 consisted of a net loss of \$15.9 million and \$0.8 million of cash flow decreases reflected in the net change in assets and liabilities, more than offset by \$22.0 million of non-cash charges. Cash flow decreases resulting from the net change in assets and liabilities primarily consisted of an increase in accounts receivable of \$10.1 million mainly due to higher revenue in 2016, an increase in prepaid expenses and other assets of \$6.1 million mainly due to litigation settlement gain accrual, a net decrease in deferred revenue and deferred cost of revenue of \$5.4 million as a result of revenue and cost recognition for previous shipments related to certain turnkey projects and Rural Utility Service (“RUS”) funded contracts and a decrease in accounts payable of \$0.4 million primarily due to the timing of inventory receipts and payments to our manufacturers. This was partially offset by an increase in accrued expenses and other liabilities of \$13.7 million primarily due to the timing of our payments of payroll, sales commissions and other expenses and a decrease in inventories of \$7.5 million primarily due to higher inventory turnover. Non-cash charges primarily consisted of stock-based compensation of \$10.4 million, depreciation and amortization of \$6.3 million and amortization of intangible assets of \$5.0 million.

Investing Activities

Net cash provided by investing activities of \$14.4 million for the nine months ended September 30, 2017 consisted of net sales and maturities of marketable securities of \$21.2 million partially offset by capital expenditures of \$6.8 million for purchases of test equipment, computer equipment and software.

Our cash provided by investing activities of \$14.8 million for the nine months ended September 24, 2016 consisted of maturities of marketable securities of \$20.2 million partially offset by capital expenditures of \$5.4 million for purchases of test equipment, computer equipment and software.

Financing Activities

Net cash provided by financing activities of \$27.8 million for the nine months ended September 30, 2017 primarily consisted of net proceeds from our line of credit of \$30.0 million and the proceeds from the issuance of common stock under our Amended and Restated Employee Stock Purchase Plan (“Restated ESPP”) of \$0.7 million, partially offset by the payment of payroll taxes for the vesting of awards under our 2010 Equity Incentive Award Plan of \$2.7 million and payments to originate the line of credit of \$0.2 million.

Net cash used in financing activities of \$11.7 million for the nine months ended September 24, 2016 consisted of the repurchases of common stock of \$12.8 million and the payment of payroll taxes for the vesting of awards under our 2010 Equity Incentive Award Plan of \$1.8 million, partially offset by the proceeds from the issuance of common stock under the Restated ESPP of \$2.9 million.

Stock Repurchase Program

On April 26, 2015, our board of directors approved a program to repurchase up to \$40 million of our common stock from time to time. This stock repurchase program commenced in May 2015. During the nine months ended September 24, 2016, we repurchased 1,789,287 shares of common stock for \$12.8 million at an average price of \$7.16 per share. In March 2016, we completed purchases under the \$40 million stock repurchase program and repurchased a total of 5,329,817 shares of common stock from May 2015 to March 2016 at an average price of \$7.50 per share.

Working Capital and Capital Expenditure Needs

We currently have no material cash commitments, except for contractual obligations under our Loan Agreement, normal recurring trade payables, expense accruals, operating leases and non-cancelable firm purchase commitments. Our working capital needs related to turnkey network improvement arrangements have been substantial, and are expected to remain substantial, as under such arrangements we generally purchase substantial equipment, components and materials and pay our subcontractors at the outset and through the course of a project, but we may not receive payment from our customers until completion and acceptance of the associated services, which may be one or more quarters later. 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 eliminate or curtail expenditures to mitigate the impact on our working capital.

On August 7, 2017, we entered into the Loan Agreement for a senior secured revolving credit facility with SVB 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. The credit facility matures and all outstanding amounts become due and payable on August 7, 2019. As of September 30, 2017, we borrowed \$30.0 million under this line of credit. Please refer to Note 11, “*Credit Facility*” of the Notes to Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q for more details on this credit facility.

We believe, based on our current operating plan and operating cash flows, our existing cash, cash equivalents and marketable securities will be sufficient to meet our anticipated cash needs for at least the next twelve months. In addition, we may also use our existing credit facility from time to time to support our working capital needs. 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 defined access portfolio, our ability to manage product cost efficiencies and maintain product margin levels, the timing, extent and size of turnkey professional services projects and our ability to develop operational efficiencies and successfully scale that business, the expansion of sales and marketing activities, the timing of introductions of new products and enhancements to existing products, the acquisition of new capabilities or technologies and the continued market acceptance of our products. 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 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.

Contractual Obligations and Commitments

Our principal commitments as of September 30, 2017 consist of our contractual obligations under the Loan Agreement, operating leases for office space and non-cancelable outstanding purchase obligations. The following table summarizes our contractual obligations at September 30, 2017 (in thousands):

	Payments Due by Period			
	Total	Less Than 1 Year	1-3 Years	3-5 Years
Line of credit, including interest ⁽¹⁾	\$ 33,239	\$ 1,749	\$ 31,490	\$ —
Operating lease obligations ⁽²⁾	5,675	2,989	2,196	490
Non-cancelable purchase commitments ⁽³⁾	62,579	62,579	—	—
Total	\$ 68,254	\$ 65,568	\$ 2,196	\$ 490

(1) Line of credit contractual obligations include projected interest payments over the term of the Loan Agreement, assuming interest rate in effect for the outstanding borrowings as of September 30, 2017 and payment of the borrowings on August 7, 2019, the contractual maturity date of the credit facility. See Note 11, “Credit Facility” of the Notes to Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q for further discussions regarding our contractual obligations relating to our line of credit.

(2) Future minimum operating lease obligations in the table above include primarily payments for our office space in Petaluma, California, and for our facilities in Minneapolis, Minnesota; Nanjing, China; Richardson, Texas; and San Jose and Santa Barbara, California, which expire at various dates through 2022. See Note 7, “Commitments and Contingencies” of the Notes to Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q for further discussion regarding our operating leases.

(3) Represents outstanding purchase commitments for inventory to be delivered by our suppliers, including contract manufacturers. See Note 7, “Commitments and Contingencies” of the Notes to Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q for further discussion regarding our outstanding purchase commitments.

Off-Balance Sheet Arrangements

As of September 30, 2017 and December 31, 2016, we did not have any off-balance sheet arrangements.

ITEM 3. 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. At September 30, 2017, we had cash, cash equivalents and marketable securities of \$70.8 million, which was held primarily in cash, money market funds and highly liquid marketable securities such as corporate debt instruments, commercial paper and U.S. government agency securities. Due to the nature of these money market funds and highly liquid marketable securities, we believe that we do not have any material exposure to changes in the fair value of our cash equivalents and marketable securities 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 new revolving credit facility pursuant to our Loan Agreement with SVB. Borrowings under the 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 0.50% to 1.50% for prime rate advances and between 2.00% and 3.00% for LIBOR advances based on the Company’s maintenance of an applicable liquidity ratio. As of September 30, 2017, we had \$30 million outstanding borrowings under the Loan Agreement.

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 (“USD”). However, we are indirectly exposed to changes in foreign currency exchange rates to the extent of 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 subsidiaries in Brazil, China and the United Kingdom, whose functional currencies are the Brazilian Real (“BRL”), Chinese Renminbi (“RMB”) and British Pounds Sterling (“GBP”), respectively.

Our operating expenses are incurred primarily in the United States, with a small portion of expenses incurred in Brazil associated with sales and marketing expenses, in China associated with our research and development operations that are maintained there and in the United Kingdom for our sales and services operations there. 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 periods were as follows:

	Nine Months Ended	
	September 30, 2017	September 24, 2016
USD	90%	88%
RMB	7%	7%
GBP	3%	4%
BRL	—%	1%
	100%	100%

If USD had appreciated or depreciated by 10%, relative to RMB, GBP and BRL, our operating expenses for the first nine months of 2017 would have decreased or increased by approximately \$2.0 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 Condensed Consolidated Balance Sheets. The effect of foreign exchange rate fluctuations on our consolidated financial position for the nine months ended September 30, 2017 was a net translation gain of approximately \$ 0.3 million . This gain 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 Condensed Consolidated Statements of Comprehensive Income (Loss). During the nine months ended September 30, 2017 , the net loss we recognized related to these foreign exchange assets and liabilities was insignificant.

ITEM 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Based on their evaluation as of September 30, 2017 , our Chief Executive Officer and Chief Financial Officer, with the participation of our management, have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) were effective at the reasonable assurance level.

Limitations on the Effectiveness of Controls

Our disclosure controls and procedures provide our Chief Executive Officer and Chief Financial Officer reasonable assurance that our disclosure controls and procedures will achieve their objectives. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate, to allow timely decisions regarding required disclosure. Our management, including our Chief Executive Officer and Chief 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. Our management recognizes that 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 period covered by this report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. Legal Proceedings

For a description of our material pending legal proceedings, please refer to Note 7 “Commitments and Contingencies – Litigation” of the Notes to Condensed Consolidated Financial Statements included in Part I, Item 1 of this Quarterly Report on Form 10-Q, which is incorporated by reference.

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. The risks described below include any material changes to and supersede the description of the risk factors disclosed in Part I, Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2016, as filed with the Securities and Exchange Commission on February 28, 2017. Investors should carefully consider the risks described below, together with the other information set forth in this Quarterly Report on Form 10-Q, 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

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 communications service providers, or CSPs, evolving industry standards and frequent introductions of new products and services. We invest significant amounts to pursue innovative technologies that we believe would be adopted by CSPs. 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. We may not be successful in doing so in a timely and responsive manner, or at all. As a result, it is difficult to forecast our future revenue and plan our operating expenses appropriately, which makes it difficult to predict our future operating results.

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. For the years ended December 31, 2016, 2015 and 2014, we incurred net losses of \$27.4 million, \$26.3 million, and \$20.8 million, respectively. For the first nine months of 2017, we incurred a net loss of \$70.2 million. As of September 30, 2017 and December 31, 2016, we had an accumulated deficit of \$654.5 million and \$584.3 million, respectively.

We expect to continue to incur significant expenses and cash outlays for research and development, growth of our 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 segments, primarily larger CSPs including cable multiple system operators, or MSOs. Given our growth rate and the intense competitive pressures we face, we may be unable to control our operating costs.

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. We have incurred higher than expected costs associated with the growth of our professional services business and, if we are unable to scale that business and attain operational efficiencies, we will continue to incur losses. If we are unable to generate positive operating income and positive cash flows from operations, our liquidity, gross margins, 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.

The U.S. federal government has called for potentially substantial changes to U.S. tax policies and laws. We are unable to predict what U.S. tax reform may be enacted in the future or what effect such changes would have on our business. Any significant change in our future effective tax rate could have a material impact on our business, financial condition, results of operations, or cash flows.

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. Moreover, we may experience delays in recognizing revenue under applicable revenue recognition rules. For example, revenue associated with large turnkey network improvement projects, which include projects that are funded by the CAF2 program, is generally deferred until customer acceptance is received and may be subject to delays, rework requirements and unexpected costs, among other uncertainties. Certain government-funded contracts, such as those funded by U.S. Department of Agriculture's RUS, also include acceptance and administrative requirements that delay revenue recognition. The extent of these delays and their impact on our revenue can fluctuate considerably depending on the number and size of purchase orders under these contracts for a given time period. In addition, unanticipated decreases in our available liquidity due to fluctuating operating results could limit our growth and delay implementation of our expansion plans.

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 product costs;
- our ability to increase our sales to larger CSPs globally;
- 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;
- intense competition;
- our ability to develop new products or enhancements that support technological advances and meet changing CSP requirements;
- our ability to achieve market acceptance of our products and CSPs' willingness to deploy our new products;
- the concentration of our customer base;
- the length and unpredictability of our sales cycles and timing of orders;
- our focus on CSPs with limited revenue potential;
- our lack of long-term, committed-volume purchase contracts with our customers;
- our exposure to the credit risks of our customers;
- fluctuations in our gross margins;
- the interoperability of our products with CSP networks;
- our dependence on sole-, single- and limited-source suppliers;
- our ability to manage our relationships with our third-party vendors, including contract manufacturers, ODMs, logistics providers, component suppliers and development partners;
- our ability to forecast our manufacturing requirements and manage our inventory;
- 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;
- the quality of our products, including any undetected hardware defects or bugs in our software;
- our ability to estimate future warranty obligations due to product failure rates;
- 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 build and sustain the proper information technology infrastructure; and
- our ability to maintain proper and effective internal controls.

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

Our current level of gross margins 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;
- increased price competition, including the impact of customer discounts and rebates;
- 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 contract manufacturer rates;
- charges incurred due to inventory holding periods if parts ordering does not correctly anticipate product demand;
- introduction of new products;
- 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 liquidated damages obligations.

An increase in revenue mix towards services will adversely affect our gross margins.

Customers are demanding greater professional and support services for our products, which usually have a lower gross margin than product purchases. In particular, we have experienced increased demand for professional services associated with network improvement projects, which typically are turnkey projects whereby we supply products and related professional services such as network planning, product installation, testing and network turn up. Revenue recognized from such professional services may be delayed because of the timing of completion and acceptance of a project or milestone, including third-party delays that may be outside our control. Additionally, if we are unable to meet project deadlines for professional and support services due to our suppliers' inability to meet our demands for components or for any other reasons, we will incur additional costs, including higher premiums to source necessary components, additional costs and expedited fees to meet project deadlines, all of which would negatively impact our gross margins. We also rely upon third-party subcontractors to assist with some of our services projects, which generally result in higher costs and increased risk of cost overruns, including expenditures for costly rework, which would also negatively impact our gross margins. Furthermore, we incurred ramp up costs to grow our professional service business to meet customer demand, but we may not achieve the desired efficiencies and scale in our professional services business, which will have an adverse impact on our gross margins. Increases in professional services as a proportion of our revenue mix have resulted in lower overall gross margins and may continue to result in lower overall gross margins in future periods. This negative impact on gross margins is exacerbated in periods where we experience accelerated levels of activity to meet project requirements and customer deadlines. Moreover, the increase in our professional services projects has resulted in increased deferred costs, including costs directly associated with the delivery of the professional services for the arrangement, that are recognized as cost of revenue only when all revenue recognition criteria are met for the arrangement. In the event some or all of such deferred costs are deemed unrecoverable, including as a result of cost overruns, we will incur additional charges to cost of revenue in the period such deferred costs are determined to be unrecoverable. Any charge to cost of revenue for deferred costs determined to be unrecoverable would negatively impact our gross margins.

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, 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 fiber deployment in outside plants. 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 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.

Government-sponsored programs 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 Independent Operating Companies ("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 RUS loans and grants, to finance capital spending. Changes to these programs, including uncertainty from government and administrative change, could reduce the ability of IOCs to access capital and thus reduce our revenue opportunities.

Many of our customers were awarded grants or loans under government stimulus programs such as the Broadband Stimulus ("BBS") programs under the American Recovery and Reinvestment Act of 2009 ("ARRA") and the funds distributed under the FCC's Connect America Fund ("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 future purchases of products as ARRA funding winds down or because all purchases have been completed.

In addition, any changes in government regulations and subsidies could 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., Alcatel-Lucent S.A. (now part of Nokia), Arris Group, Inc., Ciena Corporation, Huawei Technologies Co. Ltd., ZTE Corporation and DASAN Zhong Solutions, Inc., 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 ongoing ability to successfully integrate acquired product lines and customer bases into our business;
- our ability to meet increased customer demand for professional services associated with network improvement projects;
- 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 our acquisitions of Occam in February 2011 and Ericsson's fiber access assets in November 2012; Adtran's acquisition of Nokia Siemens's broadband access line business in May 2012; Arris' acquisitions of BigBand Networks in October 2011, Motorola Mobility's Home Unit from Google in December 2012 and Pace plc in January 2016; Nokia's acquisition of Alcatel-Lucent in January 2016; and the merger of DASAN Zhong Solutions with DASAN Network Solutions in September 2016. 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 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 margins at desired levels or achieve profitability. Competitive pressures could result in increased pricing pressure, reduced profit margins, 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 making significant investments in developing new products and enhancing the functionality of our existing products. Developing our products is expensive and complex and involves uncertainties. We may not have sufficient resources to successfully manage lengthy product development cycles. For the years ended December 31, 2016, 2015, and 2014, our research and development expenses were \$106.9 million or 23% of our revenue, \$89.7 million or 22% of our revenue, and \$80.3 million or 20% of our revenue, respectively. For the first nine months of 2017, our research and development expenses were \$99.4 million or 27% of our revenue. 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 development partners, to maintain our competitive position. These investments may take several years to generate positive returns, if ever. In addition, we may experience design, manufacturing, 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, 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, we could experience lower sales, which would harm our business.

Our new products are early in their life cycles and subject to uncertain market demand. If our customers are unwilling to 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. Potential customers may choose not to invest the additional capital required for initial system deployment of new products. In addition, demand for new products is dependent on the success of our customers in deploying and selling advanced services to their subscribers. Our products support a variety of advanced broadband services, such as high-speed Internet, Internet protocol television, mobile broadband, high-definition video and online gaming. If subscriber demand for such services does not grow as expected or declines or our customers are unable or unwilling to deploy and market these services, demand for our products may decrease or fail to grow at rates we anticipate.

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 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 21% , 22% and 23% of our revenue for the years ended December 31, 2016 , 2015 and 2014 , respectively, and another customer accounted for 15% of our revenue for the year ended December 31, 2016. However, we cannot anticipate the level of purchases in the future by these customers. Customer purchases may be delayed or impacted due to financial difficulties, spending cuts or corporate consolidations. For example, one of our key customers recently completed a large acquisition, which may disrupt its normal expenditure plans, including possible delays or reduction in purchases of our products and services. Any decrease or delay in purchases and/or capital expenditure plans of any of our key customers, 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, our margins could be reduced, and our profitability may be adversely impacted. The loss of, or reduction in, 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, in recent 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 the ILEC 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 margins.

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. In addition, larger projects may have longer periods between project commencement and completion and recognition of revenue. 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, 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 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 MSOs. We have devoted and continue to devote substantial technical, marketing and sales resources to the pursuit of 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 product to meet international standards. For example, we have been invited by a large CSP to engage in initial testing and laboratory trials for our NG-PON2 technology along with our partner Ericsson. We have invested and expect to continue to invest considerable time, effort and expenditures, including investment in product research and development, related to this opportunity 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. 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 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 would 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 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 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 design and services to deploy our products within our customers' networks, such as our professional services associated with turnkey network improvement projects for our customers. 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.

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 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. 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 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.

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.

We do not have manufacturing capabilities, and therefore we depend upon a small number of outside contract manufacturers. We do not have supply contracts with all of these contract manufacturers; consequently, our operations could be disrupted if we encounter problems with any of these contract manufacturers.

We do not have internal manufacturing capabilities, and rely upon a small number of contract manufacturers to build our products. In particular, we rely on Flex Ltd. for the manufacture of most of our products. Our reliance on a small number of contract manufacturers makes us vulnerable to possible capacity constraints and reduced control over component availability, delivery schedules, manufacturing yields and costs.

We do not have supply contracts with some of our contract manufacturers. Consequently, these contract manufacturers are not obligated to supply products to us for any specific period, in any specific quantity or at any certain price. In addition, we have limited control over our contract manufacturers' quality systems and controls, and therefore may not be able to ensure levels of quality manufacture suitable for our customers.

The revenue that Flex and other contract manufacturers generate from our orders represent a relatively small percentage of those manufacturers' 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 contract manufacturer 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 contract manufacturers.

If Flex or any of our other contract manufacturers 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 contract manufacturers. An alternative contract 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 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 and our business partners, including our contract manufacturers and suppliers, 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 basis, we will not be able to deliver our products to our customers.

We and our business partners, including our contract manufacturers and suppliers, 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.

Any of the sole-source, single-source and limited-source suppliers upon whom we or our business partners rely could stop producing our components, cease operations or enter into exclusive arrangements with our competitors. In addition, purchase volumes of such components may be too low for Calix to be considered a priority customer by these suppliers. 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. 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 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 original design manufacturer (“ODM”), original equipment manufacturer (“OEM”) and development 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. For example, a third party assisted in the design and currently manufactures portions of our E-series systems and nodes family. 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 or manufacturing quality that may occur at ODM and OEM facilities 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, 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 contract manufacturers, we could incur additional costs, experience manufacturing delays and lose revenue.

We bear inventory risk under our contract manufacturing arrangements and our ODM and OEM agreements. Lead times for the materials and components that we order through our manufacturers vary significantly and depend on numerous factors, including the specific supplier, contract terms 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.

If we overestimate our production requirements, our manufacturers may purchase excess components and build excess inventory. If our manufacturers, at our request, purchase excess components that are unique to our products or build excess products, we could be required to pay for these excess parts or products and their storage costs. Historically, we have reimbursed our primary contract manufacturers for a portion of inventory purchases when our inventory has 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 would 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 and result in delays or cancellation of sales.

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.

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 (“OSMINE”) 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 may directly affect our ability to market or sell our products. 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 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 will 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;
- 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 (“VARs”), who provide sales and support services for our products. In particular, the non-exclusive reseller agreement entered into with Ericsson in 2012 has provided us with an extensive global reseller channel. More recently we have partnered with Ericsson on larger customer opportunities. We compete with other telecommunications systems providers for our VARs’ business and many of our VARs, including Ericsson, 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 Ericsson or any other 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.

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

In June 2016, a majority of voters in the United Kingdom elected to withdraw from the European Union in a national referendum. The referendum was advisory, and the terms of any withdrawal are subject to a negotiation period that could last at least two years after the government of the United Kingdom formally initiated the withdrawal process in March 2017. Nevertheless, the referendum has created 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 in the event of a withdrawal. The referendum has also given rise to calls for the governments of other European Union member states to consider withdrawal. These developments, or the perception that any of them could occur, 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 business, financial condition and results of operations and reduce the price of our securities.

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 believe 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 would 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.

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. 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. These third-party licenses may be unavailable to us on commercially reasonable terms, if at all. Our inability to obtain necessary third-party licenses may force us to obtain 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.

The Loan and Security Agreement we entered into in August 2017 with Silicon Valley Bank (“Loan Agreement”) provides for a revolving credit facility based on a customary accounts receivable borrowing base, subject to certain exceptions and exclusions, such that borrowings available to us are limited by eligible accounts receivable (as defined in the Loan Agreement). If our financial position deteriorates our borrowing capacity under the credit facility may be reduced. In addition, the Loan Agreement includes affirmative and negative covenants and requires that we maintain a specified minimum liquidity ratio. The negative covenants also include, among others, restrictions on our and our subsidiaries’ transferring collateral, making changes to the nature of our business or the business of the applicable subsidiary, incurring additional indebtedness, engaging in mergers or acquisitions, paying dividends or making other distributions, making investments, engaging in transactions with affiliates, making payments in respect of subordinated debt, creating liens and selling assets, in each case subject to certain exceptions. Failure to maintain these restrictive covenants and requirements can limit the amount of borrowings that are available to us, increase the cost of borrowings under the facility or require us to make immediate payments to reduce borrowings. The 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.

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 contract manufacturers, ODMs and OEMs 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 acquired Occam Networks in 2011 and Ericsson’s fiber access assets in 2012. We may in the future acquire other 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. Unanticipated costs to us from these historical transactions as well as both anticipated and unanticipated costs to us related to any 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. For example, the Occam acquisition resulted in litigation with defense costs that were in excess of available directors and officers liability insurance coverage, including costs for which coverage was denied by our insurance carriers. 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 or intangible assets with finite useful lives become impaired, we may be required to record a significant charge to earnings. We review our goodwill and intangible assets with finite useful lives for impairment 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. We test goodwill for impairment at least annually. If the carrying values of such assets were 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. We also outsource a portion of our software development to a team of software engineers based in Shenyang, China. 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 and political conditions of 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 regards to actions the Trump administration 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.

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.

Privacy concerns relating to our products and services could affect our business practices, damage our reputation and deter customers from purchasing our products and services.

Government and regulatory authorities in the United States and around the world have implemented and are continuing to implement 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 adopted by the EU Parliament goes into effect in May 2018 to harmonize data privacy laws across Europe. 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 these various 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, use, disclosure, or security of customer information or other privacy related matters, even if unfounded, could damage our reputation and adversely affect operating results. While we strive to comply with all 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.

We are subject to cybersecurity and privacy risks.

Our information systems and data centers (including third-party data centers) contain sensitive information that help us operate our business efficiently, interface with and provide software solutions to customers, maintain financial accuracy and accurately produce our financial statements. In addition, we host sensitive data in data centers, including subscriber data, in the course of providing services and solutions to customers. 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. The theft, loss, or misuse of personal data collected, used, stored or transferred by us to run our business could result in significantly increased security and remediation costs or costs related to defending legal claims. If we do not allocate and effectively manage the resources necessary to build and sustain the proper technology infrastructure, we could be subject to cyberattacks, transaction errors, processing inefficiencies, the loss of customers, business disruptions or the loss of or damage to intellectual property through security breaches. If our data management systems, including those of our third-party data centers, do not effectively and securely collect, store, process and report relevant data for the operation of our business, whether due to cyberattacks, equipment malfunction or constraints, software deficiencies or human error, our ability to effectively plan, forecast and execute our business plan and comply with laws and regulations will be impaired, perhaps materially. Any such impairment could materially and adversely affect our financial condition, results of operations, cash flows, the timeliness with which we internally and externally report our operating results and our business and reputation.

While we have applied multiple layers of security to control access to our information technology systems and use encryption and authentication technologies to secure the transmission and storage of data, these security measures may be compromised as a result of third-party security breaches, employee error, malfeasance, faulty password management or other irregularity, and result in persons obtaining unauthorized access to our data or accounts. Third parties may attempt to fraudulently induce employees into disclosing user names, passwords or other sensitive information, which may in turn be used to access our information technology systems.

While we seek to apply best practice policies and devote significant resources to network security, data encryption and other security measures to protect our information technology and communications systems and data, these security measures cannot provide absolute security. We or our third-party hosting providers may experience a system breach and be unable to protect sensitive data. The costs to us to eliminate or alleviate network security problems, bugs, viruses, worms, malicious software programs and security vulnerabilities could be significant, and our efforts to address these problems may not be successful and could result in unexpected interruptions, delays and cessation of service which may harm our business operations.

Although our systems have been designed around industry-standard architectures to reduce downtime in the event of outages or catastrophic occurrences, they remain vulnerable to damage or interruption from earthquakes, floods, fires, power loss, telecommunication failures, terrorist attacks, cyberattacks, viruses, denial-of-service attacks, human error, hardware or software defects or malfunctions, and similar events or disruptions. Some of our systems are not fully redundant, and our disaster recovery planning is not sufficient for all eventualities. Our systems are also subject to break-ins, sabotage and intentional acts of vandalism. Despite any precautions we may take, the occurrence of a natural disaster, a decision by any of our third-party hosting providers to close a facility we use without adequate notice for financial or other reasons, a data breach or other unanticipated problems at our hosting facilities could cause system interruptions and delays which may result in loss of critical data and lengthy interruptions in our services.

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 management, engineering, sales and marketing personnel, many of whom are highly skilled and would be difficult to replace. None of our senior management or key technical or sales personnel is

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, particularly those specializing in engineering and sales, 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. In particular, we must continue to expand our direct sales force, including hiring additional sales managers, to grow our customer base and increase sales. If we are unable to effectively recruit, hire and utilize new employees, 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.

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 ("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 (the "Dodd-Frank Act") among other rules and regulations implemented by the SEC, as well as listing requirements of the New York Stock Exchange (the "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 in the "Risk Factors" section of this Quarterly Report on Form 10-Q, 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. Although we believe that, based on our current level of operations and anticipated growth, our existing cash, cash equivalents, marketable securities and borrowings available under our Loan Agreement will provide adequate funds for ongoing operations, planned capital expenditures and working capital requirements for at least the next twelve months, 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. 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. If we are unable to generate cash flows to support our operational needs, we may need to seek other 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 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

ITEM 3. Defaults Upon Senior Securities

None.

ITEM 4. Mine Safety Disclosures

Not applicable.

ITEM 5. Other Information

None.

ITEM 6. Exhibits

Exhibit Number	Description
10.1†	Loan and Security Agreement dated August 7, 2017 between Silicon Valley Bank and Calix, Inc.
10.2*	Offer Letter between Calix, Inc. and Cory Sindelar dated September 28, 2017.
10.3*	Nonstatutory Inducement Stock Option Grant Notice between Calix, Inc. and Cory Sindelar dated October 1, 2017.
10.4*	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).
10.5*	Amendment to Amended and Restated Executive Change in Control and Severance Plan effective October 1, 2017.
31.1	Certification of Chief Executive Officer of Calix, Inc. Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer of Calix, Inc. Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Chief Executive Officer and Chief 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

† Confidential treatment has been requested for portions of this agreement.

* Indicates management contract or compensatory plan or arrangement.

LOAN AND SECURITY AGREEMENT

THIS LOAN AND SECURITY AGREEMENT (this “ **Agreement** ”) dated as of August 7, 2017 (the “ **Effective Date** ”) between **SILICON VALLEY BANK**, a California corporation (“ **Bank** ”), and **CALIX, INC.**, a Delaware corporation (“ **Borrower** ”), provides the terms on which Bank shall lend to Borrower and Borrower shall repay Bank. The parties agree as follows:

1. ACCOUNTING AND OTHER TERMS

Accounting terms not defined in this Agreement shall be construed following GAAP. Calculations and determinations must be made following GAAP. Capitalized terms not otherwise defined in this Agreement shall have the meanings set forth in Section 13. All other terms contained in this Agreement, unless otherwise indicated, shall have the meaning provided by the Code to the extent such terms are defined therein.

2. LOAN AND TERMS OF PAYMENT

2.1 Promise to Pay. Borrower hereby unconditionally promises to pay Bank the outstanding principal amount of all Credit Extensions and accrued and unpaid interest thereon as and when due in accordance with this Agreement.

2.2 **Revolving Line.**

(a) Availability. Subject to the terms and conditions of this Agreement and to deduction of Reserves, Bank shall make formula advances under the Revolving Line (“ **Formula Advances** ”) not exceeding the Availability Amount. Amounts borrowed under the Revolving Line may be repaid and, prior to the Revolving Line Maturity Date, reborrowed, subject to the applicable terms and conditions precedent herein.

(b) Termination; Repayment. The Revolving Line terminates on the Revolving Line Maturity Date, when the principal amount of all Advances, the unpaid interest thereon, and all other Obligations relating to the Revolving Line shall be immediately due and payable.

(c) Discretionary Increase of Revolving Line. Subject to the terms and conditions of this Agreement, and provided there exists no Event of Default, on any Business Day occurring at least three (3) Business Days prior to the Revolving Line Maturity Date, a Responsible Officer of Borrower may submit to Bank, on behalf of Borrower and according to Section 10, a written request (a “ **Commitment Increase Request** ”) to increase the amount of the Revolving Line to an aggregate amount not to exceed the lesser of (i) Fifty Million Dollars (\$50,000,000) and (ii) the Borrowing Base (the “ **Increased Revolving Line** ”). Submission by Borrower of a Commitment Increase Request shall be deemed to be a representation and warranty by Borrower that the representations and warranties made by Borrower in Section 5 as of the date of such Commitment Increase Request are true, accurate and complete in all material respects; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that are already qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date. Such Commitment Increase Request shall be irrevocable. After receipt of a Commitment Increase Request, Bank may request evidence of the power and authority of such Responsible Officer to submit such Commitment Increase Request and, subject to its receipt and satisfaction thereof, Bank shall determine, in its sole discretion, whether to consent to such Commitment Increase Request. If granted by Bank, (i) Bank shall provide Borrower with written notice of its consent to a Commitment Increase Request according to Section 10 and (ii) such notice shall include (x) the effective date of the Increased Revolving Line (the “ **Increased Revolving Line Effective Date** ”) and (y) any customary commitment fee relating to the Increased Revolving Line, as determined by Bank in its sole discretion (such commitment fee (if applicable) being called the “ **Increase Activation Fee** ”). Within seven (7) Business Days after receipt of the foregoing notice, Borrower shall inform Bank of its decision to accept such terms, and if Borrower so chooses to accept, as of the Increased Revolving Line Effective Date, all references to the Revolving Line in this Agreement shall be deemed to be references to the Increased Revolving Line. On or before the Increased

<p>***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission Confidential treatment has been requested with respect to portions of this agreement.</p>
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Revolving Line Effective Date, and in consideration of Bank's agreement to make available the Increased Revolving Line to Borrower, Borrower shall pay to Bank any and all fees and expenses in connection with such Commitment Increase Request, including without limitation, the Increase Activation Fee. If an Increase Activation Fee is charged by Bank, it is hereby deemed fully earned and nonrefundable when paid. If the Revolving Line is increased pursuant to the terms of this Section 2.2(c), the Revolving Line will remain at the increased amount until the Revolving Line Maturity Date. If Bank does not provide Borrower with notice of its consent to a Commitment Increase Request within twenty (20) Business Days after the receipt by Bank thereof, such Commitment Increase Request shall be deemed to have been denied by Bank.

(d) Non-Formula Advance Sublimit. Subject to the terms and conditions of this Agreement, Bank shall make non-formula advances (each, a "**Non-Formula Advance**" and collectively, the "**Non-Formula Advances**") available to Borrower from the Effective Date through January 15, 2018, in a maximum principal amount not to exceed the Non-Formula Amount. The dollar amount of each Non-Formula Advance shall at all times reduce the amount otherwise available for Advances under the Revolving Line. On January 16, 2018, Borrower shall immediately repay in full the Non-Formula Advances outstanding by a combination of either (i) making a payment in cash, or (ii) refinancing such Non-Formula Advances with Formula Advances.

2.3 Letters of Credit Sublimit.

(a) As part of the Revolving Line, Bank shall issue or have issued Letters of Credit denominated in Dollars or a Foreign Currency for Borrower's account. The aggregate Dollar Equivalent amount utilized for the issuance of Letters of Credit shall at all times reduce the amount otherwise available for Advances under the Revolving Line. The aggregate Dollar Equivalent of the face amount of outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit and any Letter of Credit Reserve) may not exceed Ten Million Dollars (\$10,000,000).

(b) If, on the Revolving Line Maturity Date (or the effective date of any termination of this Agreement), there are any outstanding Letters of Credit, then on such date Borrower shall provide to Bank cash collateral in an amount equal to at least [***] percent ([***]%) for Letters of Credit denominated in Dollars or at least [***] percent ([***]%) for Letters of Credit denominated in a Foreign Currency, in each case of the aggregate Dollar Equivalent of the face amount of all such Letters of Credit plus all interest, fees, and costs due or estimated by Bank to become due in connection therewith, to secure all of the Obligations relating to such Letters of Credit. All Letters of Credit shall be in form and substance acceptable to Bank in its sole discretion and shall be subject to the terms and conditions of Bank's standard Application and Letter of Credit Agreement (the "**Letter of Credit Application**"). Borrower agrees to execute any further documentation in connection with the Letters of Credit as Bank may reasonably request. Borrower further agrees to be bound by the regulations and interpretations of the issuer of any Letters of Credit guaranteed by Bank and opened for Borrower's account or by Bank's interpretations of any Letter of Credit issued by Bank for Borrower's account, and Borrower understands and agrees that Bank shall not be liable for any error, negligence, or mistake, whether of omission or commission, in following Borrower's instructions or those contained in the Letters of Credit or any modifications, amendments, or supplements thereto. Nothing herein shall, however, relieve Bank from liability for its own gross negligence or willful misconduct.

(c) The obligation of Borrower to immediately reimburse Bank for drawings made under Letters of Credit shall be absolute, unconditional, and irrevocable, and shall be performed strictly in accordance with the terms of this Agreement, such Letters of Credit, and the Letter of Credit Application.

(d) Borrower may request that Bank issue a Letter of Credit payable in a Foreign Currency. If a demand for payment is made under any such Letter of Credit, Bank shall treat such demand as an Advance to Borrower of the Dollar Equivalent of the amount thereof (plus fees and charges in connection therewith such as wire, cable, SWIFT or similar charges).

(e) To guard against fluctuations in currency exchange rates, upon the issuance of any Letter of Credit payable in a Foreign Currency, Bank shall create a reserve (the "**Letter of Credit Reserve**") under the Revolving Line in an amount equal to a percentage (which percentage shall be determined by Bank in its sole but reasonable discretion) of the face amount of such Letter of Credit. The amount of the Letter of Credit Reserve may be

adjusted by Bank from time to time to account for fluctuations in the exchange rate. The availability of funds under the Revolving Line shall be reduced by the amount of such Letter of Credit Reserve for as long as such Letter of Credit remains outstanding.

2.4 Overadvances. If, at any time, the sum of (a) the outstanding principal amount of any Formula Advances, plus the face amount of any outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit and any Letter of Credit Reserve), exceeds the lesser of either the Revolving Line or the Borrowing Base, or (b) the outstanding principal amount of any Advances, plus the face amount of any outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit and any Letter of Credit Reserve), exceeds the lesser of either the Revolving Line or the Borrowing Base, plus the Non-Formula Amount, Borrower shall immediately pay to Bank in cash the amount of such excess (such excess, the “**Overadvance**”). Without limiting Borrower’s obligation to repay Bank any Overadvance, Borrower agrees to pay Bank interest on the outstanding amount of any Overadvance, on demand, at a per annum rate equal to the rate that is otherwise applicable to Advances plus three percent (3.0%).

2.5 Payment of Interest on the Credit Extensions.

(a) Interest; Payment. Each Advance shall bear interest on the outstanding principal amount thereof from the date when made, continued or converted until paid in full at a rate per annum equal to (i) for Prime Rate Advances, the Prime Rate plus the applicable Prime Rate Margin, and (ii) for LIBOR Advances, the LIBOR Rate plus the applicable LIBOR Rate Margin. On and after the expiration of any Interest Period applicable to any LIBOR Advance outstanding on the date of occurrence of an Event of Default, the end of a Streamline Period, or acceleration of the Obligations, the amount of such LIBOR Advance shall, during the continuance of such Event of Default, after the end of the Streamline Period, or after acceleration, bear interest at a rate per annum equal to the Prime Rate plus five percent (5.0%). Pursuant to the terms hereof, interest on each Advance shall be paid in arrears on each Interest Payment Date. Interest shall also be paid on the date of any prepayment of any Advance pursuant to this Agreement for the portion of any Advance so prepaid and upon payment (including prepayment) in full thereof. All accrued but unpaid interest on the Advances shall be due and payable on the Revolving Line Maturity Date.

(b) Prime Rate Advances. Each change in the interest rate of the Prime Rate Advances based on changes in the Prime Rate shall be effective on the effective date of such change and to the extent of such change. The Prime Rate Margin applicable to Prime Rate Advances shall be determined on the basis of Borrower’s most recent Adjusted Quick Ratio, as reported to Bank in Borrower’s financial statements provided pursuant to Section 6.2(c), and such Prime Rate Margin shall be adjusted promptly upon each receipt of such financial statements.

(c) LIBOR Advances. The interest rate applicable to each LIBOR Advance shall be determined in accordance with Section 3.6(a) hereunder. Subject to Sections 3.5 and 3.6, such rate shall apply during the entire Interest Period applicable to such LIBOR Advance, and interest calculated thereon shall be payable on the Interest Payment Date applicable to such LIBOR Advance. The LIBOR Rate Margin applicable to LIBOR Advances shall be determined on the basis of Borrower’s most recent Adjusted Quick Ratio, as reported to Bank in Borrower’s financial statements provided pursuant to Section 6.2(c), and such LIBOR Rate Margin shall be adjusted promptly upon each receipt of such financial statements.

(d) Computation of Interest. Any interest hereunder will accrue from day to day and is calculated on the basis of the actual number of days elapsed and a year of 360 days. In computing interest on any Credit Extension, the date of the making of such Credit Extension shall be included and the date of payment shall be excluded.

(e) Default Rate. Upon the occurrence and during the continuance of an Event of Default, Obligations shall bear interest at a rate per annum which is five percent (5.0%) above the rate that would otherwise be applicable thereto (the “**Default Rate**”), unless Bank otherwise elects to impose a smaller increase. Payment or acceptance of the increased interest provided in this Section 2.5(e) is not a permitted alternative to timely payment and shall not constitute a waiver of any Event of Default or otherwise prejudice or limit any rights or remedies of Bank.

*** Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission
Confidential treatment has been requested with respect to portions of this agreement.

2.6 Fees. Borrower shall pay to Bank:

(a) Revolving Line Commitment Fee. A fully earned, non-refundable commitment fee of Seventy Five Thousand Dollars (\$75,000), on the Effective Date (the “**Commitment Fee**”).

(b) Good Faith Deposit. Prior to the Effective Date, Borrower has paid to Bank a deposit of Fifteen Thousand Dollars (\$15,000) (the “**Good Faith Deposit**”) to initiate Bank’s due diligence review process. Any portion of the Good Faith Deposit not utilized to pay Bank Expenses on the Effective Date will be applied to the Commitment Fee.

(c) Letter of Credit Fee. Bank’s customary fees and expenses for the issuance or renewal of Letters of Credit, upon the issuance of such Letter of Credit, each anniversary of the issuance during the term of such Letter of Credit, and upon the renewal of such Letter of Credit by Bank.

(d) Termination Fee. So long as Bank makes Formula Advances pursuant to Section 2.2(a), if Borrower refinances the Revolving Line with another bank, lender, or financial institution prior to the first anniversary of the Effective Date, in addition to the payment of any other amounts then-owing, a termination fee in an amount equal to Three Hundred Thousand Dollars (\$300,000) (the “**Termination Fee**”).

(e) Unused Revolving Line Facility Fee. Payable quarterly in arrears on the last day of each calendar quarter, and on the Revolving Line Maturity Date, a fee (the “**Unused Revolving Line Facility Fee**”) in an amount equal to the Unused Revolving Line Margin per annum of the average unused portion of the Revolving Line, as determined by Bank, computed on the basis of a year with the applicable number of days as set forth in Section 2.5(d). The unused portion of the Revolving Line, for purposes of this calculation, shall be calculated on a calendar year basis and shall equal the difference between (i) the Revolving Line, and (ii) the average for the period of the daily closing balance of the Revolving Line outstanding plus the sum of the aggregate amount of outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit and any Letter of Credit Reserve).

(f) Bank Expenses. All Bank Expenses (including reasonable attorneys’ fees and expenses for documentation and negotiation of this Agreement) incurred through and after the Effective Date, when due (or, if no stated due date, upon three (3) Business Days of demand by Bank).

(g) Fees Fully Earned. Unless otherwise provided in this Agreement or in a separate writing by Bank, Borrower shall not be entitled to any credit, rebate, or repayment of any fees earned by Bank pursuant to this Agreement notwithstanding any termination of this Agreement or the suspension or termination of Bank’s obligation to make loans and advances hereunder. Bank may deduct amounts owing by Borrower under the clauses of this Section 2.6 pursuant to the terms of Section 2.7(c). Bank shall provide Borrower written notice of deductions made from the Designated Deposit Account pursuant to the terms of the clauses of this Section 2.6.

2.7 Payments; Application of Payments; Debit of Accounts.

(a) All payments to be made by Borrower under any Loan Document shall be made in immediately available funds in Dollars, without setoff or counterclaim, before 12:00 p.m. Pacific time on the date when due. Payments of principal and/or interest received after 12:00 p.m. Pacific time are considered received at the opening of business on the next Business Day. When a payment is due on a day that is not a Business Day, the payment shall be due the next Business Day, and additional fees or interest, as applicable, shall continue to accrue until paid.

(b) Bank has the exclusive right to determine the order and manner in which all payments with respect to the Obligations may be applied. Borrower shall have no right to specify the order or the accounts to which Bank shall allocate or apply any payments required to be made by Borrower to Bank or otherwise received by Bank under this Agreement when any such allocation or application is not specified elsewhere in this Agreement.

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(c) Bank may debit first, the Designated Deposit Account, and if there are insufficient funds in the Designated Deposit Account, then any of Borrower's other deposit accounts, for principal and interest payments or any other amounts Borrower owes Bank when due. These debits shall not constitute a set-off.

2.8 Withholding. Payments received by Bank from Borrower under this Agreement will be made free and clear of and without deduction for any and all present or future taxes, levies, imposts, duties, deductions, withholdings, assessments, fees or other charges imposed by any Governmental Authority (including any interest, additions to tax or penalties applicable thereto). Specifically, however, if at any time any Governmental Authority, applicable law, regulation or international agreement requires Borrower to make any withholding or deduction from any such payment or other sum payable hereunder to Bank, Borrower hereby covenants and agrees that the amount due from Borrower with respect to such payment or other sum payable hereunder will be increased to the extent necessary to ensure that, after the making of such required withholding or deduction, Bank receives a net sum equal to the sum which it would have received had no withholding or deduction been required, and Borrower shall pay the full amount withheld or deducted to the relevant Governmental Authority. Borrower will, upon request, furnish Bank with proof reasonably satisfactory to Bank indicating that Borrower has made such withholding payment; provided, however, that Borrower need not make any withholding payment if the amount or validity of such withholding payment is contested in good faith by appropriate and timely proceedings and as to which payment in full is bonded or reserved against by Borrower. The agreements and obligations of Borrower contained in this Section 2.8 shall survive the termination of this Agreement.

3. CONDITIONS OF LOANS

3.1 Conditions Precedent to Initial Credit Extension. Bank's obligation to make the initial Credit Extension is subject to the condition precedent that Bank shall have received, in form and substance satisfactory to Bank, such documents, and completion of such other matters, as Bank may reasonably deem necessary or appropriate, including, without limitation:

- (a) duly executed original signatures to the Loan Documents;
- (b) duly executed original signatures to the Control Agreements, required by Section 6.8(b), if any;
- (c) the Operating Documents and long-form good standing certificates of Borrower certified by the Secretary of State (or equivalent agency) of the States of Delaware and California, each as of a date no earlier than thirty (30) days prior to the Effective Date;
- (d) a secretary's certificate of Borrower with respect to such Borrower's Operating Documents, incumbency, specimen signatures and resolutions authorizing the execution and delivery of this Agreement and the other Loan Documents to which it is a party;
- (e) duly executed original signatures to a payoff letter from Bank of America;
- (f) evidence that (i) the Liens securing Indebtedness owed by Borrower to Bank of American will be terminated and (ii) the documents and/or filings evidencing the perfection of such Liens, including without limitation any financing statements, intellectual property security agreements, and/or control agreements, have or will, concurrently with the initial Credit Extension, be terminated;
- (g) duly executed original signatures to the completed Borrowing Resolutions for Borrower;
- (h) certified copies, dated as of a recent date, of financing statement searches, as Bank may request, accompanied by written evidence (including any UCC termination statements) that the Liens indicated in any such financing statements either constitute Permitted Liens or have been or, in connection with the initial Credit Extension, will be terminated or released;

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- (i) the Perfection Certificate of Borrower, together with the duly executed original signature thereto;
- (j) Intellectual Property search results and completed exhibits to the IP Agreement;
- (k) evidence satisfactory to Bank that the insurance policies and endorsements required by Section 6.7 hereof are in full force and effect, together with appropriate evidence showing lender loss payable and/or additional insured clauses or endorsements in favor of Bank;
- (l) with respect to the initial Advance, a completed Borrowing Base Report (and any schedules related thereto and including any other information requested by Bank with respect to Borrower's Accounts); and
- (m) payment of the fees and Bank Expenses then due as specified in Section 2.6 hereof.

3.2 Conditions Precedent to all Credit Extensions. Bank's obligations to make each Credit Extension, including the initial Credit Extension, is subject to the following conditions precedent:

- (a) timely receipt of the Credit Extension request and any materials and documents required by Section 3.4, and when a Streamline Period is not in effect, a Borrowing Base Report;
- (b) the representations and warranties in this Agreement shall be true, accurate, and complete in all material respects on the date of the proposed Credit Extension and on the Funding Date of each Credit Extension; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date, and no Event of Default shall have occurred and be continuing or result from the Credit Extension. Each Credit Extension is Borrower's representation and warranty on that date that the representations and warranties in this Agreement remain true, accurate, and complete in all material respects; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date; and
- (c) Bank determines to its sole but reasonable satisfaction that there has not been a Material Adverse Change.

3.3 Covenant to Deliver.

- (a) Except as otherwise provided in Section 3.3(a), Borrower agrees to deliver to Bank each item required to be delivered to Bank under this Agreement as a condition precedent to any Credit Extension. Borrower expressly agrees that a Credit Extension made prior to the receipt by Bank of any such item shall not constitute a waiver by Bank of Borrower's obligation to deliver such item, and the making of any Credit Extension in the absence of a required item shall be in Bank's sole discretion.
- (b) Unless otherwise provided in writing, Bank shall have received, in form and substance satisfactory to Bank:
 - (i) within thirty (30) days after the Effective Date, evidence satisfactory to Bank that the insurance policies and endorsements required by Section 6.7 hereof are in full force and effect, together with appropriate evidence showing lender loss payable and/or additional insured clauses or endorsements in favor of Bank;
 - (ii) within thirty (30) days after the Effective Date, duly executed original signatures to the Stock Pledge Agreements;

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(iii) within ninety (90) days after the Effective Date, a landlord's consent in favor of Bank for each of Borrower's leased locations at (i) 1035 N. McDowell Blvd., Petaluma, CA 94954, and (ii) 100 Headquarters Drive, San Jose, CA 95134, by the respective landlords thereof, together with the duly executed original signatures thereto; and

(iv) within ninety (90) days after the Effective Date, a bailee's waiver in favor of Bank from (i) [***] and (ii) [***], together with the duly executed original signatures thereto.

3.4 Procedures for Borrowing.

(a) Subject to the prior satisfaction of all other applicable conditions to the making of an Advance set forth in this Agreement, an Advance shall be made upon Borrower's (via an individual duly authorized by an Administrator) irrevocable written notice delivered to Bank in the form of a Notice of Borrowing or without instructions if any Advances is necessary to meet Obligations which have become due. The Notice of Borrowing shall be made by Borrower through Bank's online banking program, provided, however, if Borrower is not utilizing Bank's online banking program, then such Notice of Borrowing shall be in the form attached hereto as Exhibit C and shall be executed by an Authorized Signer. Bank shall have received satisfactory evidence that the Board has approved that such Authorized Signer may provide such notices and request Advances. The Notice of Borrowing must be received by Bank prior to 12:00 p.m. Pacific time, (i) at least three (3) Business Days prior to the requested Funding Date (other than the Funding Date on the Effective Date, which Notice of Borrowing may be submitted to Bank on the same day), in the case of any LIBOR Advance, and (ii) on the requested Funding Date, in the case of a Prime Rate Advance, specifying: (1) the amount of the Advance; (2) the requested Funding Date; (3) whether the Advance is to be comprised of LIBOR Advances or Prime Rate Advances, provided that LIBOR Advances may only be requested when a Streamline Period is in effect; and (4) the duration of the Interest Period applicable to any such LIBOR Advances included in such notice, provided that LIBOR Advances may only be requested when a Streamline Period is in effect, and provided, further, that if the Notice of Borrowing shall fail to specify the duration of the Interest Period for any Advance comprised of LIBOR Advances, such Interest Period shall be one (1) month. Notwithstanding any terms in this Agreement to the contrary, each LIBOR Advance shall not be less than [***] Dollars (\$[***]) and shall be in a multiple of [***] Dollars (\$[***]). In addition to such Notice of Borrowing, Borrower must promptly deliver to Bank by electronic mail or through Bank's online banking program such reports and information, including without limitation, sales journals, cash receipts journals, accounts receivable aging reports, as Bank may request in its sole discretion.

(b) On the Funding Date, Bank shall credit proceeds of an Advance to the Designated Deposit Account denominated in Dollars and, subsequently, shall transfer such proceeds by wire transfer to such other account as Borrower may instruct in the Notice of Borrowing. No Advances shall be deemed made to Borrower, and no interest shall accrue on any such Advance, until the related funds have been deposited in the applicable Designated Deposit Account.

3.5 Conversion and Continuation Elections.

(a) So long as (i) no Event of Default exists and is continuing; (ii) Borrower shall not have sent any notice of termination of this Agreement; and (iii) Borrower shall have complied with such customary procedures as Bank has established from time to time for Borrower's requests for LIBOR Advances, Borrower may, upon irrevocable written notice to Bank:

- (1) provided a Streamline Period is in effect, elect to convert on any Business Day, Prime Rate Advances into LIBOR Advances;
- (2) provided a Streamline Period is in effect, elect to continue on any Interest Payment Date any LIBOR Advances maturing on such Interest Payment Date; or
- (3) elect to convert on any Interest Payment Date any LIBOR Advances maturing on such Interest Payment Date into Prime Rate Advances.

(b) Borrower shall deliver a Notice of Conversion/Continuation by electronic mail via Bank's online banking program to be received by Bank prior to 12:00 p.m. Pacific time (i) at least three (3) Business Days in advance of the Conversion Date or Continuation Date, if any Advances are to be converted into or continued as LIBOR Advances, provided that Advances may only be converted into or continued as LIBOR Advances when a Streamline Period is in effect; and (ii) on the Conversion Date, if any Advances are to be converted into Prime Rate Advances, in each case specifying the:

- (1) proposed Conversion Date or Continuation Date;
- (2) aggregate amount of the Advances to be converted or continued;
- (3) nature of the proposed conversion or continuation; and
- (4) if the resulting Advance is to be a LIBOR Advance, the duration of the requested Interest Period.

(c) If upon the expiration of any Interest Period applicable to any LIBOR Advances, Borrower shall have timely failed to select a new Interest Period to be applicable to such LIBOR Advances or request to convert a LIBOR Advance into a Prime Rate Advance, Borrower shall be deemed to have elected for any such Advances, to convert such LIBOR Advances into Prime Rate Advances.

(d) Any LIBOR Advances shall, at Bank's option, convert into Prime Rate Advances in the event that (i) an Event of Default exists, (ii) a Streamline Period is not in effect, or (iii) the aggregate principal amount of the Prime Rate Advances which have been previously converted to LIBOR Advances, or the aggregate principal amount of existing LIBOR Advances continued, as the case may be, at the beginning of an Interest Period shall at any time during such Interest Period exceeds the lesser of the Revolving Line or the Borrowing Base. Borrower agrees to pay Bank, upon demand by Bank (or Bank may, at its option, debit the Designated Deposit Account or any other account Borrower maintains with Bank) any amounts required to compensate Bank for any loss (including loss of anticipated profits), cost, or expense incurred by Bank, as a result of the conversion of LIBOR Advances to Prime Rate Advances pursuant to this Section 3.5(d).

(e) Notwithstanding anything to the contrary contained herein, Bank shall not be required to purchase Dollar deposits in the London interbank market or other applicable LIBOR market to fund any LIBOR Advances, but the provisions hereof shall be deemed to apply as if Bank had purchased such deposits to fund the LIBOR Advances.

(f) Notwithstanding anything to the contrary contained in this Agreement, (i) upon the termination of a Streamline Period, Bank shall have the option in its sole and absolute discretion to convert all LIBOR Advances into Prime Rate Advances, and (ii) if a Streamline Period is not then in effect or an Event of Default has occurred and is continuing, no Advances may be borrowed as, converted to or continued as LIBOR Advances.

3.6 Special Provisions Governing LIBOR Advances. Notwithstanding any other provision of this Agreement to the contrary, the following provisions shall govern with respect to LIBOR Advances as to the matters covered:

(a) Determination of Applicable Interest Rate. As soon as practicable on each Interest Rate Determination Date, Bank shall determine (which determination shall, absent manifest error in calculation, be final, conclusive and binding upon all parties) the interest rate that shall apply to the LIBOR Advances for which an interest rate is then being determined for the applicable Interest Period and shall promptly give notice thereof (in writing or by telephone confirmed in writing) to Borrower.

(b) Inability to Determine Applicable Interest Rate. In the event that Bank shall have determined (which determination shall be final and conclusive and binding upon all parties hereto absent manifest error), on any Interest Rate Determination Date with respect to any LIBOR Advance, that by reason of circumstances affecting the

London interbank market adequate and fair means do not exist for ascertaining the interest rate applicable to such LIBOR Advance on the basis provided for in the definition of LIBOR, Bank shall on such date give notice (in writing or by telephone confirmed in writing) to Borrower of such determination, whereupon (i) no Advances may be made as, or converted to, LIBOR Advances until such time as Bank notifies Borrower that the circumstances giving rise to such notice no longer exist, and (ii) any Notice of Borrowing or Notice of Conversion/Continuation given by Borrower with respect to LIBOR Advances in respect of which such determination was made shall be deemed to be rescinded by Borrower.

(c) Compensation for Breakage or Non-Commencement of Interest Periods. If (i) for any reason, other than a default by Bank or any failure of Bank to fund LIBOR Advances due to impracticability or illegality under Sections 3.7(c) and 3.7(d) of this Agreement, a borrowing or a conversion to or continuation of any LIBOR Advance does not occur on a date specified in a Notice of Borrowing or a Notice of Conversion/Continuation, as the case may be, or (ii) any complete or partial principal payment or reduction of a LIBOR Advance, or any conversion of any LIBOR Advance, occurs on a date prior to the last day of an Interest Period applicable to that LIBOR Advance, including without limitation, due to voluntary or mandatory prepayment or acceleration, an Event of Default or the end of a Streamline Period, then, in each case, Borrower shall compensate Bank, upon written request by Bank, for all losses and expenses incurred by Bank in an amount equal to the excess, if any, of:

(A) the amount of interest that would have accrued on the amount (1) not borrowed, converted or continued as provided in clause (i) above, or (2) paid, reduced or converted as provided in clause (ii) above, for the period from (y) the date of such failure to borrow, convert or continue as provided in clause (i) above, or the date of such payment, reduction or conversion as provided in clause (ii) above, as the case may be, to (z) in the case of a failure to borrow, convert or continue as provided in clause (i) above, the last day of the Interest Period that would have commenced on the date of such borrowing, conversion or continuing but for such failure, and in the case of a payment, reduction or conversion prior to the last day of an Interest Period applicable to a LIBOR Advance as provided in clause (ii) above, the last day of such Interest Period, in each case at the applicable rate of interest or other return for such LIBOR Advance(s) provided for herein (excluding, however, the LIBOR Rate Margin included therein, if any), over

(B) the interest which would have accrued to Bank on the applicable amount provided in clause (A) above through the purchase of a Eurodollar deposit bearing interest at the rate obtained pursuant to the definition of LIBOR Rate on the date of such failure to borrow, convert or continue as provided in clause (i) above, or the date of such payment, reduction or conversion as provided in clause (ii) above, as the case may be, for a period equal to the remaining period of such applicable Interest Period provided in clause (A) above.

Bank's request shall set forth the manner and method of computing such compensation and such determination as to such compensation shall be conclusive absent manifest error.

(d) Assumptions Concerning Funding of LIBOR Advances. Calculation of all amounts payable to Bank under this Section 3.6 and under Section 3.7 shall be made as though Bank had actually funded each relevant LIBOR Advance through the purchase of a Eurodollar deposit bearing interest at the rate obtained pursuant to the definition of LIBOR Rate in an amount equal to the amount of such LIBOR Advance and having a maturity comparable to the relevant Interest Period; provided, however, that Bank may fund each of its LIBOR Advances in any manner it sees fit and the foregoing assumptions shall be utilized only for the purposes of calculating amounts payable under this Section 3.6 and under Section 3.7.

(e) LIBOR Advances After an Event of Default. After the occurrence and during the continuance of an Event of Default, (i) Borrower may not elect to have an Advance be made or continued as, or converted to, a LIBOR Advance after the expiration of any Interest Period then in effect for such Advance and (ii) subject to the provisions of Section 3.6(c), any Notice of Conversion/Continuation given by Borrower with respect to a requested conversion/continuation that has not yet occurred shall, at Bank's option, be deemed to be rescinded by Borrower and be deemed a request to convert or continue Advances referred to therein as Prime Rate Advances.

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(f) LIBOR Advances if a Streamline Period is Not in Effect. At all times a Streamline Period is not in effect, (i) Borrower may not elect to have an Advance be made or continued as, or converted to, a LIBOR Advance after the expiration of any Interest Period then in effect for such Advance and (ii) subject to the provisions of Section 3.6(c), any Notice of Conversion/Continuation given by Borrower with respect to a requested conversion/continuation that has not yet occurred shall, at Bank's option, be deemed to be rescinded by Borrower and be deemed a request to convert or continue Advances referred to therein as Prime Rate Advances.

3.7 Additional Requirements/Provisions Regarding LIBOR Advances.

(a) Borrower shall pay Bank, upon demand by Bank, from time to time such amounts as Bank may determine to be necessary to compensate it for any costs incurred by Bank that Bank determines are attributable to its making or maintaining of any amount receivable by Bank hereunder in respect of any LIBOR Advances relating thereto (such increases in costs and reductions in amounts receivable being herein called " **Additional Costs** "), in each case resulting from any Regulatory Change which:

- i. changes the basis of taxation of any amounts payable to Bank under this Agreement in respect of any LIBOR Advances (other than changes which affect taxes measured by or imposed on the overall net income of Bank by the jurisdiction in which Bank has its principal office);
- ii. imposes or modifies any reserve, special deposit or similar requirements relating to any extensions of credit or other assets of, or any deposits with, or other liabilities of Bank (including any LIBOR Advances or any deposits referred to in the definition of LIBOR); or
- iii. imposes any other condition affecting this Agreement (or any of such extensions of credit or liabilities).

Bank will notify Borrower of any event occurring after the Effective Date which will entitle Bank to compensation pursuant to this Section 3.7(a) as promptly as practicable after it obtains knowledge thereof and determines to request such compensation. Bank will furnish Borrower with a statement setting forth the basis and amount of each request by Bank for compensation under this Section 3.7(a). Determinations and allocations by Bank for purposes of this Section 3.7(a) of the effect of any Regulatory Change on its costs of maintaining its obligations to make LIBOR Advances, of making or maintaining LIBOR Advances, or on amounts receivable by it in respect of LIBOR Advances, and of the additional amounts required to compensate Bank in respect of any Additional Costs, shall be conclusive absent manifest error.

(b) If Bank shall determine that the adoption or implementation of any applicable law, rule, regulation, or treaty regarding capital adequacy, or any change therein, or any change in the interpretation or administration thereof by any Governmental Authority, central bank, or comparable agency charged with the interpretation or administration thereof, or compliance by Bank (or its applicable lending office) with any request or directive regarding capital adequacy (whether or not having the force of law) of any such authority, central bank, or comparable agency, has or would have the effect of reducing the rate of return on capital of Bank or any person or entity controlling Bank (a "Parent") as a consequence of its obligations hereunder to a level below that which Bank (or its Parent) could have achieved but for such adoption, change, or compliance (taking into consideration policies with respect to capital adequacy) by an amount deemed by Bank to be material, then from time to time, within five (5) days after demand by Bank, Borrower shall pay to Bank such additional amount or amounts as will compensate Bank for such reduction. A statement of Bank claiming compensation under this Section 3.7(b) and setting forth the additional amount or amounts to be paid to it hereunder shall be conclusive absent manifest error.

Notwithstanding anything to the contrary in this Section 3.7, Borrower shall not be required to compensate Bank pursuant to Sections 3.7(a) and 3.7(b) for any amounts incurred more than nine (9) months prior to the date that Bank notifies Borrower of Bank's intention to claim compensation therefor; provided that if the circumstances giving rise to such claim have a retroactive effect, then such nine-month period shall be extended to include the period of such retroactive effect. The obligations of Borrower arising pursuant to this Section 3.7(b) shall survive the Revolving Line Maturity Date, the termination of this Agreement and the repayment of all Obligations.

(c) If, at any time, Bank, in its sole and absolute discretion, determines that (i) the amount of LIBOR Advances for periods equal to the corresponding Interest Periods are not available to Bank in the offshore currency interbank markets, or (ii) LIBOR does not accurately reflect the cost to Bank of lending the LIBOR Advances, then Bank shall promptly give notice thereof to Borrower. Upon the giving of such notice, Bank's obligation to make the LIBOR Advances shall terminate; provided, however, LIBOR Advances shall not terminate if Bank and Borrower agree in writing to a different interest rate applicable to LIBOR Advances.

(d) If it shall become unlawful for Bank to continue to fund or maintain any LIBOR Advances, or to perform its obligations hereunder, upon demand by Bank, Borrower shall prepay the LIBOR Advances in full with accrued interest thereon and all other amounts payable by Borrower hereunder (including, without limitation, any amount payable in connection with such prepayment pursuant to Section 3.6(c)(ii)). Notwithstanding the foregoing, to the extent a determination by Bank as described above relates to a LIBOR Advance then being requested by Borrower pursuant to a Notice of Borrowing or a Notice of Conversion/Continuation, Borrower shall have the option, subject to the provisions of Section 3.6(c)(ii), to (i) rescind such Notice of Borrowing or Notice of Conversion/Continuation by giving notice (in writing or by telephone confirmed in writing) to Bank of such rescission on the date on which Bank gives notice of its determination as described above, or (ii) modify such Notice of Borrowing or Notice of Conversion/Continuation to obtain a Prime Rate Advance or to have outstanding Advances converted into or continued as Prime Rate Advances by giving notice (by facsimile or by telephone confirmed in writing) to Bank of such modification on the date on which Bank gives notice of its determination as described above.

4. CREATION OF SECURITY INTEREST

4.1 Grant of Security Interest. Borrower hereby grants Bank, to secure the payment and performance in full of all of the Obligations, a continuing security interest in, and pledges to Bank, the Collateral, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof.

Borrower acknowledges that it previously has entered, and/or may in the future enter, into Bank Services Agreements with Bank. Regardless of the terms of any Bank Services Agreement, Borrower agrees that any amounts Borrower owes Bank thereunder shall be deemed to be Obligations hereunder and that it is the intent of Borrower and Bank to have all such Obligations secured by the first priority perfected security interest in the Collateral granted herein (subject only to Permitted Priority Liens).

If this Agreement is terminated, Bank's Lien in the Collateral shall continue until the Obligations (other than inchoate indemnity obligations) are repaid in full in cash. Upon payment in full in cash of the Obligations (other than inchoate indemnity obligations) and at such time as Bank's obligation to make Credit Extensions has terminated, Bank shall, at the sole cost and expense of Borrower, release its Liens in the Collateral and all rights therein shall revert to Borrower. In the event (x) all Obligations (other than inchoate indemnity obligations), except for Bank Services, are satisfied in full, and (y) this Agreement is terminated, Bank shall terminate the security interest granted herein upon Borrower providing cash collateral acceptable to Bank in its good faith business judgment for Bank Services, if any. In the event such Bank Services consist of outstanding Letters of Credit, Borrower shall provide to Bank cash collateral in an amount equal to (x) if such Letters of Credit are denominated in Dollars, then at least [***] percent ([***]%), and (y) if such Letters of Credit are denominated in a Foreign Currency, then at least [***] percent ([***]%), of the Dollar Equivalent of the face amount of all such Letters of Credit plus all interest, fees, and costs due or to become due in connection therewith (as estimated by Bank in its reasonable business judgment), to secure all of the Obligations relating to such Letters of Credit.

4.2 Priority of Security Interest. Borrower represents, warrants, and covenants that the security interest granted herein is and shall at all times continue to be a first priority perfected security interest in the Collateral (subject only to Permitted Priority Liens). If Borrower shall acquire a commercial tort claim in excess of [***] Dollars (\$[***]), Borrower shall promptly notify Bank in a writing signed by Borrower of the general details thereof and grant to Bank in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance reasonably satisfactory to Bank.

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4.3 Authorization to File Financing Statements. Borrower hereby authorizes Bank to file financing statements, without notice to Borrower, with all appropriate jurisdictions to perfect or protect Bank's interest or rights hereunder. Such financing statements may indicate the Collateral as "all assets of the Debtor" or words of similar effect, or as being of an equal or lesser scope, or with greater detail, all in Bank's discretion.

5. REPRESENTATIONS AND WARRANTIES

Borrower represents and warrants as follows:

5.1 Due Organization, Authorization; Power and Authority. Borrower is duly existing and in good standing as a Registered Organization in its jurisdiction of formation and is qualified and licensed to do business and is in good standing in any jurisdiction in which the conduct of its business or its ownership of property requires that it be qualified except where the failure to do so could not reasonably be expected to have a material adverse effect on Borrower's business. In connection with this Agreement, Borrower has delivered to Bank a completed certificate signed by Borrower, entitled "Perfection Certificate" (the "**Perfection Certificate**"). Borrower represents and warrants to Bank that (a) Borrower's exact legal name is that indicated on the Perfection Certificate and on the signature page hereof; (b) Borrower is an organization of the type and is organized in the jurisdiction set forth in the Perfection Certificate; (c) the Perfection Certificate accurately sets forth Borrower's organizational identification number or accurately states that Borrower has none; (d) the Perfection Certificate accurately sets forth Borrower's place of business, or, if more than one, its chief executive office as well as Borrower's mailing address (if different than its chief executive office); (e) Borrower (and each of its predecessors) has not, in the past five (5) years, changed its jurisdiction of formation, organizational structure or type, or any organizational number assigned by its jurisdiction; and (f) all other information set forth on the Perfection Certificate pertaining to Borrower and each of its Subsidiaries is accurate and complete (it being understood and agreed that Borrower may from time to time update certain information in the Perfection Certificate after the Effective Date to the extent such updates result from actions, transactions, circumstances or events not prohibited by this Agreement).

The execution, delivery and performance by Borrower of the Loan Documents to which it is a party have been duly authorized, and do not (i) conflict with any of Borrower's Operating Documents, (ii) contravene, conflict with, constitute a default under or violate any material Requirement of Law, (iii) contravene, conflict or violate any applicable material order, writ, judgment, injunction, decree, determination or award of any Governmental Authority by which Borrower or any of its Subsidiaries or any of their property or assets may be bound or affected, (iv) require any action by, filing, registration, or qualification with, or Governmental Approval from, any Governmental Authority (except such Governmental Approvals which have already been obtained and are in full force and effect or are being obtained pursuant to Section 6.1(b)), or (v) materially conflict with, contravene, constitute a default or breach under, or result in or permit the termination or acceleration of, any material agreement by which Borrower is bound. Borrower is not in default under any agreement to which it is a party or by which it is bound in which the default could reasonably be expected to have a material adverse effect on Borrower's business.

5.2 Collateral. Borrower has good title to, rights in, and the power to transfer each item of the Collateral upon which it purports to grant a Lien hereunder, free and clear of any and all Liens except Permitted Liens. Borrower has no Collateral Accounts at or with any bank or financial institution other than Bank or Bank's Affiliates except for the Collateral Accounts described in the Perfection Certificate delivered to Bank in connection herewith or as permitted under Section 6.8 and which Borrower has taken such actions as are necessary to give Bank a perfected security interest therein, pursuant to the terms of Section 6.8(b). The Accounts are bona fide, existing obligations of the Account Debtors.

The Collateral is not in the possession of any third party bailee (such as a warehouse) except as otherwise provided in the Perfection Certificate or as permitted hereunder. None of the components of the Collateral shall be maintained at locations other than as provided in the Perfection Certificate or as permitted pursuant to Section 7.2.

All Inventory is in all material respects of good and marketable quality, free from material defects.

Borrower is the sole owner of the Intellectual Property which it owns or purports to own except for (a) non-exclusive licenses for the use of the property of Borrower or its Subsidiaries in the ordinary course of business and

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licenses that could not result in a legal transfer of title of the licensed property but that may be exclusive in respects other than territory and that may be exclusive as to territory only as to discreet geographical areas outside of the United States, (b) over-the-counter software that is commercially available to the public, and (c) material Intellectual Property licensed to Borrower and noted on the Perfection Certificate or by notice provided in accordance with Section 6.10(b). Each Patent which it owns or purports to own and which is material to Borrower's business is valid and enforceable, and no part of the Intellectual Property which Borrower owns or purports to own and which is material to Borrower's business has, to the best of its knowledge, been judged invalid or unenforceable, in whole or in part. To the best of Borrower's knowledge, no claim has been made that any part of the Intellectual Property violates the rights of any third party except to the extent such claim would not reasonably be expected to have a material adverse effect on Borrower's business.

Except as noted on the Perfection Certificate, as disclosed publicly by Borrower pursuant to filings with the SEC or with respect to which notice is provided in accordance with Section 6.10(b), Borrower is not a party to, nor is it bound by, any Restricted License.

5.3 Accounts Receivable.

(a) For each Account with respect to which Advances are requested, on the date each Advance is requested and made, such Account shall be an Eligible Account.

(b) All statements made and all unpaid balances appearing in all invoices, instruments and other documents evidencing the Eligible Accounts are and shall be true and correct in all material respects and all such invoices, instruments and other documents, and all of Borrower's Books are genuine and in all respects what they purport to be. All sales and other transactions underlying or giving rise to each Eligible Account shall comply in all material respects with all applicable laws and governmental rules and regulations. Borrower has no knowledge of any actual or imminent Insolvency Proceeding of any Account Debtor whose accounts are Eligible Accounts in any Borrowing Base Report. To the best of Borrower's knowledge, all signatures and endorsements on all documents, instruments, and agreements relating to all Eligible Accounts are genuine, and all such documents, instruments and agreements are legally enforceable in accordance with their terms.

5.4 Litigation. Other than as disclosed pursuant to Section 6.2(j), there are no actions or proceedings pending or, to the knowledge of any Responsible Officer, threatened in writing by or against Borrower or any of its Subsidiaries involving more than, individually or in the aggregate, [***] Dollars (\$[***]).

5.5 Financial Statements; Financial Condition. All consolidated financial statements for Borrower and any of its Subsidiaries delivered to Bank fairly present in all material respects Borrower's consolidated financial condition and Borrower's consolidated results of operations. There has not been any material deterioration in Borrower's consolidated financial condition since the date of the most recent financial statements submitted to Bank.

5.6 Solvency. The fair salable value of Borrower's consolidated assets (including goodwill minus disposition costs) exceeds the fair value of Borrower's liabilities; Borrower is not left with unreasonably small capital after the transactions in this Agreement; and Borrower is able to pay its debts (including trade debts) as they mature.

5.7 Regulatory Compliance. Borrower is not an "investment company" or a company "controlled" by an "investment company" under the Investment Company Act of 1940, as amended. Borrower is not engaged as one of its important activities in extending credit for margin stock (under Regulations X, T and U of the Federal Reserve Board of Governors). Borrower (a) has complied in all material respects with all Requirements of Law, and (b) has not violated any Requirements of Law the violation of which could reasonably be expected to have a material adverse effect on its business. None of Borrower's or any of its Subsidiaries' properties or assets has been used by Borrower or any Subsidiary or, to the best of Borrower's knowledge, by previous Persons, in disposing, producing, storing, treating, or transporting any hazardous substance other than legally. Borrower and each of its Subsidiaries have obtained all consents, approvals and authorizations of, made all declarations or filings with, and given all notices to, all Governmental Authorities that are necessary to continue their respective businesses as currently conducted, except

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where the failure to obtain such consents, approvals or authorizations, make such declarations or filings, or give all notices could not reasonably be expected to result in a Material Adverse Change.

5.8 Subsidiaries; Investments. (i) Borrower does not own any stock, partnership, or other ownership interest or other equity securities except for Permitted Investments, and (ii) as of the Effective Date, Calix International has no assets or property.

5.9 Tax Returns and Payments; Pension Contributions. Borrower has timely filed all required tax returns and reports, and Borrower has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower except (a) to the extent such taxes are being contested in good faith by appropriate proceedings promptly instituted and diligently conducted, so long as such reserve or other appropriate provision, if any, as shall be required in conformity with GAAP shall have been made therefor, or (b) if such taxes, assessments, deposits and contributions do not, individually or in the aggregate, exceed [***] Dollars (\$[***]).

To the extent Borrower defers payment of any contested taxes in excess of [***] Dollars (\$[***]), Borrower shall (i) notify Bank in writing of the commencement of, and any material development in, the proceedings, and (ii) post bonds or take any other steps required to prevent the Governmental Authority levying such contested taxes from obtaining a Lien upon any of the Collateral that is other than a "Permitted Lien". Borrower is unaware of any claims or adjustments proposed for any of Borrower's prior tax years which could result in additional taxes becoming due and payable by Borrower in excess of [***] Dollars (\$[***]). Borrower has paid all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms, and Borrower has not withdrawn from participation in, and has not permitted partial or complete termination of, or permitted the occurrence of any other event with respect to, any such plan which could reasonably be expected to result in any material liability of Borrower, including any material liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

5.10 Use of Proceeds. Borrower shall use the proceeds of the Credit Extensions solely as working capital and to fund its general business requirements and not for personal, family, household or agricultural purposes.

5.11 Full Disclosure. No written representation, warranty or other statement of Borrower in any certificate or written statement given to Bank, as of the date such representation, warranty, or other statement was made, taken together with all such written certificates and written statements given to Bank, contains any untrue statement of a material fact or omits to state a material fact necessary to make the statements contained in the certificates or statements not misleading (it being recognized by Bank that the projections and forecasts provided by Borrower in good faith and based upon reasonable assumptions are not viewed as facts and that actual results during the period or periods covered by such projections and forecasts may differ from the projected or forecasted results).

5.12 Definition of "Knowledge." For purposes of the Loan Documents, whenever a representation or warranty is made to Borrower's knowledge or awareness, to the "best of" Borrower's knowledge, or with a similar qualification, knowledge or awareness means the actual knowledge, after reasonable investigation, of any Responsible Officer.

6. AFFIRMATIVE COVENANTS

Borrower shall do all of the following:

6.1 Government Compliance.

(a) Maintain its and all its Subsidiaries' legal existence and good standing in their respective jurisdictions of formation and maintain qualification in each jurisdiction in which the failure to so qualify would reasonably be expected to have a material adverse effect on Borrower's business or operations. Borrower shall comply, and have each Subsidiary comply, in all material respects, with all laws, ordinances and regulations to which it is subject.

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(b) Obtain all of the Governmental Approvals necessary for the performance by Borrower of its obligations under the Loan Documents to which it is a party and the grant of a security interest to Bank in all of its property. Borrower shall promptly provide copies of any such obtained Governmental Approvals to Bank.

6.2 Financial Statements, Reports, Certificates. Provide Bank with the following:

(a) a Borrowing Base Report (and any schedules related thereto and including any other information reasonably requested by Bank with respect to Borrower's Accounts, including without limitation, a detailed accounts receivable ledger) (i) no later than Friday of each week when a Streamline Period is not in effect, and (ii) within thirty (30) days after the end of each month when a Streamline Period is in effect;

(b) within thirty (30) days after the end of each month, (A) monthly accounts receivable agings, aged by invoice date, (B) monthly accounts payable agings, aged by invoice date, and outstanding or held check registers, if any, and (C) monthly reconciliations of accounts receivable agings (aged by invoice date), transaction reports, Deferred Revenue report, general ledger, and detailed debtor listing;

(c) as soon as available, but no later than thirty (30) days after the last day of each month, a company prepared consolidated balance sheet and income statement covering Borrower's consolidated operations for such month certified by a Responsible Officer and in a form acceptable to Bank in its reasonable discretion (the "**Monthly Financial Statements**");

(d) within thirty (30) days after the last day of each month and together with the Monthly Financial Statements, a duly completed Compliance Certificate signed by a Responsible Officer;

(e) as soon as available, but no later than the earlier of (i) ninety (90) days after the last day of each fiscal quarter of Borrower, or (ii) Borrower's 10-Q filing date, company prepared consolidated balance sheet and income statement covering Borrower's consolidated operations for such quarter certified by a Responsible Officer and in a form acceptable to Bank in its reasonable discretion;

(f) within the later of sixty (60) days after (i) Board approval, or (ii) the end of each fiscal year of Borrower, and within ten (10) days after any updates or amendments thereto, (A) annual operating budgets (including income statements, balance sheets and cash flow statements, by month) for the upcoming fiscal year of Borrower, and (B) annual financial projections for the following fiscal year (on a quarterly basis), in each case as approved by the Board, together with any related business forecasts used in the preparation of such annual financial projections;

(g) as soon as available, but no later than the earlier of (i) one hundred twenty (120) days after the last day of each fiscal year of Borrower, or (ii) Borrower's 10-K filing date, audited consolidated financial statements prepared under GAAP, consistently applied, together with an unqualified opinion on the financial statements from an independent certified public accounting firm reasonably acceptable to Bank;

(h) within five (5) days of filing, copies of all periodic and other reports, proxy statements and other materials filed by Borrower with the SEC, any Governmental Authority succeeding to any or all of the functions of the SEC or with any national securities exchange, or distributed to its shareholders, as the case may be. Documents or other information required to be delivered pursuant to the terms hereof (to the extent any such documents and information are included in materials otherwise filed with the SEC) may be delivered electronically and if so delivered, shall be deemed to have been delivered on the date on which Borrower posts such documents or information, or provides a link thereto, on Borrower's website on the internet at Borrower's website address; provided, however, Borrower shall promptly notify Bank in writing (which may be by electronic mail) of the posting of any such documents;

(i) within five (5) days of delivery, copies of all statements, reports and notices made available to Borrower's security holders or to any holders of Subordinated Debt;

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(j) prompt report of any legal actions pending or threatened in writing against Borrower or any of its Subsidiaries that could result in damages or costs to Borrower or any of its Subsidiaries of, individually or in the aggregate, [***] Dollars (\$[***]) or more; and

(k) promptly, from time to time, such other information regarding Borrower or compliance with the terms of any Loan Documents as reasonably requested by Bank.

6.3 Accounts Receivable.

(a) Schedules and Documents Relating to Accounts. Borrower shall deliver to Bank transaction reports and schedules of collections, as provided in Section 6.2, on Bank's standard forms; provided, however, that Borrower's failure to execute and deliver the same shall not affect or limit Bank's Lien and other rights in all of Borrower's Accounts, nor shall Bank's failure to advance or lend against a specific Account affect or limit Bank's Lien and other rights therein. If requested by Bank, Borrower shall furnish Bank with copies (or, at Bank's reasonable request, originals) of all contracts, orders, invoices, and other similar documents, and all shipping instructions, delivery receipts, bills of lading, and other evidence of delivery, for any goods the sale or disposition of which gave rise to such Accounts. In addition, Borrower shall deliver to Bank, on its request, the originals of all instruments, chattel paper, security agreements, guarantees and other documents and property evidencing or securing any Accounts, in the same form as received, with all necessary endorsements, and copies of all credit memos.

(b) Disputes. Borrower shall promptly notify Bank of all disputes or claims relating to Accounts, individually or in the aggregate, in excess of [***] Dollars (\$[***]) at any time. Borrower may forgive (completely or partially), compromise, or settle any Account for less than payment in full, or agree to do any of the foregoing so long as (i) Borrower does so in good faith, in a commercially reasonable manner, in the ordinary course of business, in arm's-length transactions, and reports the same to Bank in the regular reports provided to Bank; (ii) no Event of Default has occurred and is continuing; and (iii) after taking into account all such discounts, settlements and forgiveness, the total outstanding Advances will not exceed the lesser of the Revolving Line or the Borrowing Base.

(c) Collection of Accounts. Within ninety (90) days after the Effective Date, Borrower shall direct Account Debtors to deliver or transmit at least [***] percent ([***]%) of all proceeds of Accounts into a lockbox account, or "blocked account" as specified by Bank (either such account, the "**Cash Collateral Account**"). Subject to the foregoing ninety (90) day period, whether or not an Event of Default has occurred and is continuing, Borrower shall immediately deliver all payments on and proceeds of Accounts to the Cash Collateral Account. Subject to Bank's right to maintain a reserve pursuant to Section 6.3(d), all amounts received in the Cash Collateral Account shall be (i) when a Streamline Period is not in effect, applied to immediately reduce the Obligations under the Revolving Line (unless Bank, in its sole discretion, elects not to so apply such amounts), or (ii) when a Streamline Period is in effect, transferred on a daily basis to Borrower's operating account with Bank. Borrower hereby authorizes Bank to transfer to the Cash Collateral Account any amounts that Bank reasonably determines are proceeds of the Accounts (provided that Bank is under no obligation to do so and this allowance shall in no event relieve Borrower of its obligations hereunder).

(d) Reserves. Notwithstanding any terms in this Agreement to the contrary, at times when an Event of Default exists and is continuing, Bank may hold any proceeds of the Accounts and any amounts in the Cash Collateral Account that are not applied to the Obligations pursuant to Section 6.3(c) above (including amounts otherwise required to be transferred to Borrower's operating account with Bank when a Streamline Period is in effect) as a reserve to be applied to any Obligations regardless of whether such Obligations are then due and payable.

(e) Returns. Provided no Event of Default has occurred and is continuing, if any Account Debtor returns any Inventory to Borrower in excess of [***] Dollars (\$[***]) in the aggregate, Borrower shall promptly (i) use commercially reasonable efforts to determine the reason for such return, (ii) unless Borrower is disputing such return in the ordinary course of business, issue a credit memorandum to the Account Debtor in the appropriate amount, and (iii) provide a copy of such credit memorandum to Bank, upon request from Bank. In the event any attempted return occurs after the occurrence and during the continuance of any Event of Default, Borrower shall hold the returned Inventory in trust for Bank, and immediately notify Bank of the return of the Inventory.

(f) Verifications; Confirmations; Credit Quality; Notifications. Bank may, from time to time, (i) verify and confirm directly with the respective Account Debtors the validity, amount and other matters relating to the Accounts, either in the name of Borrower or Bank or such other name as Bank may choose, and notify any Account Debtor of Bank's security interest in such Account and/or (ii) conduct a credit check of any Account Debtor to approve any such Account Debtor's credit. Except during the existence and continuance of an Event of Default, Bank shall consult with Borrower prior to the making of any direct contact with an Account Debtor, provided that the failure to do so shall not give rise to any liability to Bank.

(g) No Liability. Bank shall not be responsible or liable for any shortage or discrepancy in, damage to, or loss or destruction of, any goods, the sale or other disposition of which gives rise to an Account, or for any error, act, omission, or delay of any kind occurring in the settlement, failure to settle, collection or failure to collect any Account, or for settling any Account in good faith for less than the full amount thereof, nor shall Bank be deemed to be responsible for any of Borrower's obligations under any contract or agreement giving rise to an Account. Nothing herein shall, however, relieve Bank from liability for its own gross negligence or willful misconduct.

6.4 Remittance of Proceeds. Except as otherwise provided in Section 6.3(c), deliver, in kind, all proceeds arising from the disposition of any Collateral to Bank in the original form in which received by Borrower not later than the following Business Day after receipt by Borrower, to be applied to the Obligations (a) prior to an Event of Default, pursuant to the terms of Section 6.3(c) hereof, and (b) after the occurrence and during the continuance of an Event of Default, pursuant to the terms of Section 9.4 hereof; provided that, if no Event of Default has occurred and is continuing, Borrower shall not be obligated to remit to Bank the proceeds of any Transfers permitted pursuant to Section 7.1. Borrower agrees that it will not commingle proceeds of Collateral with any of Borrower's other funds or property, but will hold such proceeds separate and apart from such other funds and property and in an express trust for Bank. Nothing in this Section 6.4 limits the provisions with respect to the disposition of Collateral set forth elsewhere in this Agreement.

6.5 Taxes; Pensions. Timely file, and require each of its Subsidiaries to timely file, all required tax returns and reports and timely pay, and require each of its Subsidiaries to timely pay, all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower and each of its Subsidiaries, except for deferred payment of any taxes contested pursuant to the terms of Section 5.9 hereof or as is otherwise permitted in Section 5.9 hereof, and shall deliver to Bank, on demand, appropriate certificates attesting to such payments, and pay all amounts necessary to fund all present pension, profit sharing and deferred compensation plans in accordance with their terms.

6.6 Access to Collateral; Books and Records. At reasonable times, on three (3) Business Days' notice (provided no notice is required if an Event of Default has occurred and is continuing), Bank, or its agents, shall have the right to inspect the Collateral and the right to audit and copy Borrower's Books. The foregoing inspections and audits shall be conducted no more often than once every twelve (12) months (or more frequently as Bank in its sole discretion determines that conditions warrant) unless an Event of Default has occurred and is continuing in which case such inspections and audits shall occur as often as Bank shall determine is necessary. The foregoing inspections and audits shall be conducted at Borrower's expense and the charge therefor shall be One Thousand Dollars (\$1,000) per person per day (or such higher amount as shall represent Bank's then-current standard charge for the same), plus reasonable out-of-pocket expenses.

6.7 Insurance.

(a) Keep its business and the Collateral insured for risks and in amounts standard for companies in Borrower's industry and location and as Bank may reasonably request. Insurance policies shall be in a form, with financially sound and reputable insurance companies that are not Affiliates of Borrower, and in amounts that are reasonably satisfactory to Bank. All property policies shall have a lender's loss payable endorsement showing Bank as the lender loss payee. All liability policies include endorsements showing Bank as an additional insured. Bank shall be included as lender loss payee and/or additional insured with respect to any such insurance providing coverage in respect of any Collateral.

(b) Ensure that proceeds payable under any property policy are, at Bank's option, payable to Bank on account of the Obligations.

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(c) At Bank's request, Borrower shall deliver certified copies of insurance policies and evidence of all premium payments. Each provider of any such insurance required under this Section 6.7 shall agree, by endorsement upon the policy or policies issued by it or by independent instruments furnished to Bank, that it will give Bank thirty (30) days prior written notice (except for non-payment, which shall be ten (10) days prior written notice) before any such policy or policies shall be materially altered or canceled. If Borrower fails to obtain insurance as required under this Section 6.7 or to pay any amount or furnish any required proof of payment to third persons and Bank, Bank may make all or part of such payment or obtain such insurance policies required in this Section 6.7, and take any action under the policies Bank deems prudent.

6.8 Accounts.

(a) Maintain the Cash Collateral Account and all of its and all of its Domestic Subsidiaries' primary domestic banking relationships, including without limitation, operating and other deposit accounts and securities/investment accounts with Bank and Bank's Affiliates.

(b) In addition to and without limiting the restrictions in (a), Borrower shall provide Bank five (5) days prior written notice before establishing any Collateral Account at or with any bank or financial institution other than Bank or Bank's Affiliates. For each Collateral Account that Borrower at any time maintains, Borrower shall cause the applicable bank or financial institution (other than Bank) at or with which any Collateral Account is maintained to execute and deliver a Control Agreement or other appropriate instrument with respect to such Collateral Account to perfect Bank's Lien in such Collateral Account in accordance with the terms hereunder which Control Agreement may not be terminated without the prior written consent of Bank. The provisions of the previous sentence shall not apply to deposit accounts exclusively used for payroll, payroll taxes, and other employee wage and benefit payments to or for the benefit of Borrower's employees and identified to Bank by Borrower as such.

6.9 Financial Covenants. Maintain at all times, subject to periodic reporting as of the last day of each fiscal month of Borrower, unless otherwise noted, on a consolidated basis with respect to Borrower:

(a) Adjusted Quick Ratio. An Adjusted Quick Ratio as set forth below:

<u>Fiscal Months</u>	<u>Adjusted Quick Ratio</u>
June 2017 through September 2017	At least [***]
October 2017 through December 2017	At least [***]
January 2018 through March 2018	At least [***]
April 2018 through June 2018	At least [***]
July 2018 and each month thereafter	At least [***]

6.10 Protection and Registration of Intellectual Property Rights.

(a) (i) Protect, defend and maintain the validity and enforceability of its Intellectual Property material to Borrower's business; (ii) promptly advise Bank in writing of material infringements or any other event that could reasonably be expected to materially and adversely affect the value of its Intellectual Property; and (iii) not allow any Intellectual Property material to Borrower's business to be abandoned, forfeited or dedicated to the public without Bank's written consent.

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(b) If Borrower (i) obtains any Patent, registered Trademark, registered Copyright, registered mask work, or any pending application for any of the foregoing, whether as owner, licensee or otherwise, or (ii) applies for any Patent or the registration of any Trademark, then Borrower shall provide written notice thereof to Bank in the next Compliance Certificate due pursuant to Section 6.2(d) and shall execute such intellectual property security agreements and other documents and take such other actions as Bank may request in its good faith business judgment to perfect and maintain a first priority perfected security interest in favor of Bank in such property. If Borrower decides to register any Copyrights or mask works in the United States Copyright Office, Borrower shall: (x) provide Bank with at least fifteen (15) days prior written notice of Borrower's intent to register such Copyrights or mask works together with a copy of the application it intends to file with the United States Copyright Office (excluding exhibits thereto); (y) execute an intellectual property security agreement and such other documents and take such other actions as Bank may request in its good faith business judgment to perfect and maintain a first priority perfected security interest in favor of Bank in the Copyrights or mask works intended to be registered with the United States Copyright Office; and (z) record such intellectual property security agreement with the United States Copyright Office contemporaneously with filing the Copyright or mask work application(s) with the United States Copyright Office. Borrower shall promptly provide to Bank copies of all applications that it files for Patents or for the registration of Trademarks, Copyrights or mask works, together with evidence of the recording of the intellectual property security agreement required for Bank to perfect and maintain a first priority perfected security interest in such property.

(c) Provide written notice to Bank within ten (10) days of entering or becoming bound by any Restricted License (other than over-the-counter software that is commercially available to the public). Borrower shall take such commercially reasonable steps as Bank requests to obtain the consent of, or waiver by, any person whose consent or waiver is necessary for (i) any Restricted License to be deemed "Collateral" and for Bank to have a security interest in it that might otherwise be restricted or prohibited by law or by the terms of any such Restricted License, whether now existing or entered into in the future, and (ii) Bank to have the ability in the event of a liquidation of any Collateral to dispose of such Collateral in accordance with Bank's rights and remedies under this Agreement and the other Loan Documents.

6.11 Litigation Cooperation. From the date hereof and continuing through the termination of this Agreement, make available to Bank, without expense to Bank, Borrower and its officers, employees and agents and Borrower's books and records, to the extent that Bank may deem them reasonably necessary to prosecute or defend any third-party suit or proceeding instituted by or against Bank with respect to any Collateral or relating to Borrower.

6.12 Online Banking.

(a) Utilize Bank's online banking platform for all matters requested by Bank which shall include, without limitation (and without request by Bank for the following matters), uploading information pertaining to Accounts and Account Debtors, requesting approval for exceptions, requesting Credit Extensions (other than any Credit Extension request made on the Effective Date), and uploading financial statements and other reports required to be delivered by this Agreement (including, without limitation, those described in Section 6.2 of this Agreement).

(b) Comply with the terms of the "Banking Terms and Conditions" and ensure that all persons utilizing the online banking platform are duly authorized to do so by an Administrator. Bank shall be entitled to assume the authenticity, accuracy and completeness on any information, instruction or request for a Credit Extension submitted via the online banking platform and to further assume that any submissions or requests made via the online banking platform have been duly authorized by an Administrator.

6.13 Formation or Acquisition of Subsidiaries. Notwithstanding and without limiting the negative covenants contained in Sections 7.3 and 7.7 hereof, at the time that Borrower or any Guarantor forms any direct or indirect Subsidiary or acquires any direct or indirect Subsidiary after the Effective Date, Borrower or Guarantor shall (a) cause such new Subsidiary to provide to Bank either a joinder to this Agreement to become a co-borrower hereunder or a Guaranty, together with such appropriate financing statements and/or Control Agreements, all in form and substance reasonably satisfactory to Bank (including being sufficient to grant Bank a first priority Lien (subject to Permitted Priority Liens) in and to the assets of such newly formed or acquired Subsidiary), provided that any such new Subsidiary that is a Foreign Subsidiary shall not be required to become a co-borrower or a Guarantor; (b) provide to Bank appropriate

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certificates and powers and financing statements, pledging all of the direct or beneficial ownership interest in such new Subsidiary, in form and substance reasonably satisfactory to Bank, provided that Borrower shall not be required to grant or pledge a security interest to Bank in more than sixty-five percent (65%) of the stock, units or other evidence of ownership held by Borrower in a Foreign Subsidiary; and (c) provide to Bank all other documentation in form and substance reasonably satisfactory to Bank, which in its opinion is appropriate with respect to the execution and delivery of the applicable documentation referred to above. Any document, agreement, or instrument executed or issued pursuant to this Section 6.13 shall be a Loan Document.

6.14 Minimum Obligations Outstanding. Maintain at all times from August 31, 2017 through February 28, 2018, outstanding Obligations to Bank of not less than the lesser of (i) Fifteen Million Dollars (\$15,000,000), or (ii) the Borrowing Base.

6.15 Pledged Collateral. Promptly upon the occurrence and during the continuance of an Event of Default, Borrower shall provide Bank, in form and substance satisfactory to Bank, any and all consents, approvals, and waivers necessary to effect the transfer of any Pledged Collateral (as defined in the Stock Pledge Agreement) into the name of Bank or a third party specified by Bank and cause new certificates representing such Pledged Collateral to be issued in the name of Bank or such third party.

6.16 Further Assurances. Execute any further instruments and take further action as Bank reasonably requests to perfect or continue Bank's Lien in the Collateral or to effect the purposes of this Agreement.

7. NEGATIVE COVENANTS

Borrower shall not do any of the following without Bank's prior written consent:

7.1 Dispositions. Convey, sell, lease, transfer, assign, or otherwise dispose of (collectively, "**Transfer**"), or permit any of its Subsidiaries to Transfer, all or any part of its business or property, except for Transfers (a) of Inventory in the ordinary course of business; (b) of worn-out, surplus or obsolete Equipment that is, in the reasonable judgment of Borrower, no longer economically practicable to maintain or useful in the ordinary course of business of Borrower; (c) consisting of Permitted Liens and Permitted Investments; (d) consisting of the sale or issuance of any stock of Borrower permitted under Section 7.2 of this Agreement; (e) consisting of Borrower's use or transfer of money or Cash Equivalents in the ordinary course of its business in a manner that is not prohibited by the terms of this Agreement or the other Loan Documents; (f) of non-exclusive licenses for the use of the property of Borrower or its Subsidiaries in the ordinary course of business and licenses that could not result in a legal transfer of title of the licensed property but that may be exclusive in respects other than territory and that may be exclusive as to territory only as to discreet geographical areas outside of the United States; and (g) in the ordinary course of business not otherwise permitted by this Section 7.1 not to exceed [***] Dollars (\$[**]) in the aggregate in any fiscal year.

7.2 Changes in Business, Management, Control, or Business Locations. (a) Engage in or permit any of its Subsidiaries to engage in any business other than the businesses currently engaged in by Borrower and such Subsidiary, as applicable, or reasonably related thereto; (b) liquidate or dissolve; or (c) permit or suffer any Change in Control.

Borrower shall not, without at least twenty (20) days prior written notice to Bank: (1) add any new domestic offices or business locations, including warehouses (unless such new domestic office or business location contains less than [***] Dollars (\$[**]) in Borrower's assets or property) or deliver any portion of the Collateral valued, individually or in the aggregate, in excess of [***] Dollars (\$[**]) to a bailee at a domestic location other than to a bailee and at a domestic location already disclosed in the Perfection Certificate (other than with respect to Collateral in transit or [***]), (2) change its jurisdiction of organization, (3) change its organizational structure or type, (4) change its legal name, or (5) change any organizational number (if any) assigned by its jurisdiction of organization. If Borrower intends to deliver any portion of the Collateral valued, individually or in the aggregate, in excess of [***] Dollars (\$[**]) to a bailee at a domestic location (and such Collateral is not Collateral in transit or [***]), and Bank and such bailee are not already parties to a bailee agreement governing both the Collateral and the domestic location to which Borrower

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intends to deliver the Collateral, then Borrower shall use commercially reasonable efforts to cause such bailee to execute and deliver a bailee agreement in form and substance reasonably satisfactory to Bank.

7.3 Mergers or Acquisitions. Merge or consolidate, or permit any of its Subsidiaries to merge or consolidate, with any other Person, or acquire, or permit any of its Subsidiaries to acquire, all or substantially all of the capital stock or property of another Person (a “**Target**”) (including, without limitation, by the formation of any Subsidiary) except where (a) total consideration including cash and the value of any non-cash consideration, for all such transactions does not in the aggregate exceed [***] Dollars (\$[***]) in any fiscal year of Borrower; (b) no Event of Default has occurred and is continuing or would exist after giving effect to the transactions; (c) the Target shall be in a similar line of business as that of Borrower; (d) the Target shall be a “going concern”, not involved in any material litigation that is not fully covered by reserves and/or insurance; (e) no Indebtedness shall be assumed by Borrower in connection with such transaction other than Permitted Indebtedness; (f) such acquisition is not a hostile acquisition; (g) after the consummation of such transaction, either (i) the Borrower is the sole surviving, controlling, legal entity, (ii) a wholly-owned Subsidiary of Borrower formed in compliance with Section 6.13 above is the surviving, controlling, legal entity, or (iii) the Target becomes a wholly-owned Subsidiary of Borrower and complies with Section 6.13 above; and (h) the Board has approved such transactions. A Subsidiary may merge or consolidate into another Subsidiary or into Borrower.

7.4 Indebtedness. Create, incur, assume, or be liable for any Indebtedness, or permit any Subsidiary to do so, other than Permitted Indebtedness.

7.5 Encumbrance. Create, incur, allow, or suffer any Lien on any of its property, or assign or convey any right to receive income, including the sale of any Accounts, or permit any of its Subsidiaries to do so, except for Permitted Liens, permit any Collateral not to be subject to the first priority security interest granted herein, or enter into any agreement, document, instrument or other arrangement (except with or in favor of Bank) with any Person which directly or indirectly prohibits or has the effect of prohibiting Borrower or any Subsidiary from assigning, mortgaging, pledging, granting a security interest in or upon, or encumbering any of Borrower’s or any Subsidiary’s Intellectual Property, except as is otherwise permitted in Section 7.1 hereof and the definition of “Permitted Liens” herein.

7.6 Maintenance of Collateral Accounts. Maintain any Collateral Account except pursuant to the terms of Section 6.8(b) hereof.

7.7 Distributions; Investments. (a) Pay any dividends or make any distribution or payment or redeem, retire or purchase any capital stock, provided that (i) Borrower may convert any of its convertible securities into other securities pursuant to the terms of such convertible securities or otherwise in exchange thereof, (ii) Borrower may pay dividends solely in common stock; (iii) Borrower may repurchase the stock of former employees, directors, officers or consultants pursuant to stock repurchase agreements so long as an Event of Default does not exist at the time of such repurchase and would not exist after giving effect to such repurchase, provided that the aggregate amount of all such repurchases does not exceed [***] Dollars (\$[***]) per fiscal year or such greater amount so long as such repurchase is funded by a concurrent issuance of capital stock or convertible securities, (iv) Borrower may purchase capital stock or options to acquire such capital stock in an amount not to exceed [***] Dollars (\$[***]) per fiscal year or such greater amount, so long as such purchase is funded with the proceeds received from a concurrent issuance of capital stock or convertible securities, (v) Borrower may make purchases of capital stock in connection with the exercise of stock options or stock appreciation by way of a cashless exercise, (vi) Borrower may make payments with respect to capital stock issued to employees, directors, officers or consultants pursuant to stock option plans or similar employee benefit arrangements entered into in the ordinary course of business and subject to standard industry practice, and (vii) Borrower may make purchases of fractional shares of capital stock arising out of stock dividends, splits or combinations or business combinations; (b) directly or indirectly make any Investment (including, without limitation, by the formation of any Subsidiary) other than Permitted Investments, or permit any of its Subsidiaries to do so; or (c) directly or indirectly make any Investment in Calix International, or permit Calix International to have any assets or property, until such time that Calix International becomes a Secured Guarantor hereunder.

7.8 Transactions with Affiliates. Directly or indirectly enter into or permit to exist any material transaction with any Affiliate of Borrower, except for (a) transactions that are in the ordinary course of Borrower's business, upon fair and reasonable terms that are no less favorable to Borrower than would be obtained in an arm's length transaction with a non-affiliated Person; (b) compensation related arrangements in the ordinary course of business or otherwise approved by the Board or by Bank in writing; (c) transactions permitted pursuant to Section 7.3; and (d) distributions permitted under Section 7.7.

7.9 Subordinated Debt. (a) Make or permit any payment on any Subordinated Debt, except under the terms of the subordination, intercreditor, or other similar agreement to which such Subordinated Debt is subject, or (b) amend any provision in any document relating to the Subordinated Debt which would increase the amount thereof, provide for earlier or greater principal, interest, or other payments thereon, or adversely affect the subordination thereof to Obligations owed to Bank (except as otherwise provided for by the terms of the subordination, intercreditor, or other similar agreement between such Person and Bank).

7.10 Compliance. Become an "investment company" or a company controlled by an "investment company", under the Investment Company Act of 1940, as amended, or undertake as one of its important activities extending credit to purchase or carry margin stock (as defined in Regulation U of the Board of Governors of the Federal Reserve System), or use the proceeds of any Credit Extension for that purpose; fail to (a) meet the minimum funding requirements of ERISA, (b) permit a Reportable Event or Prohibited Transaction, as defined in ERISA, to occur; (c) comply with the Federal Fair Labor Standards Act or violate any other law or regulation, if such failure could reasonably be expected to have a material adverse effect on Borrower's business, or permit any of its Subsidiaries to do so; withdraw or permit any Subsidiary to withdraw from participation in, permit partial or complete termination of, or permit the occurrence of any other event with respect to, any present pension, profit sharing and deferred compensation plan which could reasonably be expected to result in any liability of Borrower, including any liability to the Pension Benefit Guaranty Corporation or its successors or any other governmental agency.

8. EVENTS OF DEFAULT

Any one of the following shall constitute an event of default (an "Event of Default") under this Agreement:

8.1 Payment Default. Borrower fails to (a) make any payment of principal or interest on any Credit Extension when due, or (b) pay any other Obligations within three (3) Business Days after such Obligations are due and payable (which three (3) Business Day cure period shall not apply to payments due on the Revolving Line Maturity Date). During the cure period, the failure to make or pay any payment specified under clause (b) hereunder is not an Event of Default (but no Credit Extension will be made during the cure period);

8.2 Covenant Default.

(a) Borrower fails or neglects to perform any obligation in Sections 3.3(b), 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.12, or 6.14, or violates any covenant in Section 7; or

(b) Borrower fails or neglects to perform, keep, or observe any other term, provision, condition, covenant or agreement contained in this Agreement or any Loan Documents, and as to any default (other than those specified in this Section 8) under such other term, provision, condition, covenant or agreement that can be cured, has failed to cure the default within ten (10) Business Days after the occurrence thereof; provided, however, that if the default cannot by its nature be cured within the ten (10) Business Day period or cannot after diligent attempts by Borrower be cured within such ten (10) Business Day period, and such default is likely to be cured within a reasonable time, then Borrower shall have an additional period (which shall not in any case exceed thirty (30) days) to attempt to cure such default, and within such reasonable time period the failure to cure the default shall not be deemed an Event of Default (but no Credit Extensions shall be made during such cure period). Cure periods provided under this section shall not apply, among other things, to financial covenants or any other covenants set forth in clause (a) above;

8.3 Material Adverse Change. A Material Adverse Change occurs;

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8.4 Attachment; Levy; Restraint on Business.

(a) (i) The service of process seeking to attach, by trustee or similar process, any funds of Borrower or of any entity under the control of Borrower (including a Subsidiary) in excess of One Hundred Thousand Dollars (\$100,000), or (ii) a notice of lien or levy is filed against any of Borrower's assets with a value in excess of One Hundred Thousand Dollars (\$100,000) by any Governmental Authority, and the same under subclauses (i) and (ii) hereof are not, within ten (10) days after the occurrence thereof, discharged or stayed (whether through the posting of a bond or otherwise); provided, however, no Credit Extensions shall be made during any ten (10) day cure period; or

(b) (i) any material portion of Borrower's assets is attached, seized, levied on, or comes into possession of a trustee or receiver, or (ii) any court order enjoins, restrains, or prevents Borrower from conducting all or any material part of its business;

8.5 Insolvency. (a) Borrower or any of its Subsidiaries, on a consolidated basis, is unable to pay its debts (including trade debts) as they become due or otherwise becomes insolvent; (b) Borrower or any of its Subsidiaries begins an Insolvency Proceeding; or (c) an Insolvency Proceeding is begun against Borrower or any of its Subsidiaries and is not dismissed or stayed within forty-five (45) days (but no Credit Extensions shall be made while any of the conditions described in clause (a) exist and/or until any Insolvency Proceeding is dismissed);

8.6 Other Agreements. There is, under any agreement to which Borrower or any Guarantor is a party with a third party or parties, (a) any default resulting in a right by such third party or parties, whether or not exercised, to accelerate the maturity of any Indebtedness in an amount individually or in the aggregate in excess of Five Hundred Thousand Dollars (\$500,000); or (b) any breach or default by Borrower or Guarantor, the result of which could have a material adverse effect on Borrower's or any Guarantor's business; provided, however, that the Event of Default under this Section 8.6 caused by the occurrence of a breach or default under such other agreement shall be cured or waived for purposes of this Agreement upon Bank receiving written notice from the party asserting such breach or default of such cure or waiver of the breach or default under such other agreement, if at the time of such cure or waiver under such other agreement (x) Bank has not declared an Event of Default under this Agreement and/or exercised any rights with respect thereto; (y) any such cure or waiver does not result in an Event of Default under any other provision of this Agreement or any Loan Document; and (z) in connection with any such cure or waiver under such other agreement, the terms of any agreement with such third party are not modified or amended in any manner which could in the good faith business judgment of Bank be materially less advantageous to Borrower or any Guarantor;

8.7 Judgments; Penalties. One or more fines, penalties or final judgments, orders or decrees for the payment of money in an amount, individually or in the aggregate, of at least Five Hundred Thousand Dollars (\$500,000) (not covered by independent third-party insurance as to which liability has been accepted by such insurance carrier) shall be rendered against Borrower by any Governmental Authority, and the same are not, within ten (10) days after the entry, assessment or issuance thereof, discharged, satisfied, or paid, or after execution thereof, stayed or bonded pending appeal, or such judgments are not discharged prior to the expiration of any such stay (provided that no Credit Extensions will be made prior to the satisfaction, payment, discharge, stay, or bonding of such fine, penalty, judgment, order or decree);

8.8 Misrepresentations. Borrower or any Person acting for Borrower makes any representation, warranty, or other statement now or later in this Agreement, any Loan Document or in any writing delivered to Bank or to induce Bank to enter this Agreement or any Loan Document, and such representation, warranty, or other statement is incorrect in any material respect when made;

8.9 Subordinated Debt. Any document, instrument, or agreement evidencing any Subordinated Debt shall for any reason be revoked or invalidated or otherwise cease to be in full force and effect, in each case other than pursuant to its terms, any Person shall be in breach thereof or contest in any manner the validity or enforceability thereof or deny that it has any further liability or obligation thereunder, or the Obligations shall for any reason be subordinated or shall not have the priority contemplated by this Agreement or any applicable subordination or intercreditor agreement;

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Confidential treatment has been requested with respect to portions of this agreement.

8.10 Guaranty. (a) Any guaranty of any Obligations terminates or ceases for any reason to be in full force and effect; (b) any Guarantor does not perform any obligation or covenant under any guaranty of the Obligations; (c) any circumstance described in Sections 8.3, 8.4, 8.5, 8.6, 8.7, or 8.8 of this Agreement occurs with respect to any Guarantor, (d) the death, liquidation, winding up, or termination of existence of any Guarantor; or (e)(i) a material impairment in the perfection or priority of Bank's Lien in the collateral provided by Guarantor or in the value of such collateral or (ii) a material adverse change in the general affairs, management, results of operation, condition (financial or otherwise) or the prospect of repayment of the Obligations occurs with respect to any Guarantor; or

8.11 Governmental Approvals. Any Governmental Approval shall have been (a) revoked, rescinded, suspended, modified in an adverse manner or not renewed in the ordinary course for a full term or (b) subject to any decision by a Governmental Authority that designates a hearing with respect to any applications for renewal of any of such Governmental Approval or that could result in the Governmental Authority taking any of the actions described in clause (a) above, and such decision or such revocation, rescission, suspension, modification or non-renewal (i) causes, or could reasonably be expected to cause, a Material Adverse Change, or (ii) adversely affects the legal qualifications of Borrower or any of its Subsidiaries to hold such Governmental Approval in any applicable jurisdiction and such revocation, rescission, suspension, modification or non-renewal could reasonably be expected to affect the status of or legal qualifications of Borrower or any of its Subsidiaries to hold any Governmental Approval in any other jurisdiction.

9. BANK'S RIGHTS AND REMEDIES

9.1 Rights and Remedies. Upon the occurrence and during the continuance of an Event of Default, Bank may, without notice or demand, do any or all of the following:

- (a) declare all Obligations immediately due and payable (but if an Event of Default described in Section 8.5 occurs all Obligations are immediately due and payable without any action by Bank);
- (b) stop advancing money or extending credit for Borrower's benefit under this Agreement or under any other agreement between Borrower and Bank;
- (c) demand that Borrower (i) deposit cash with Bank in an amount equal to at least (A) [***] percent ([***]%) of the Dollar Equivalent of the aggregate face amount of all Letters of Credit denominated in Dollars remaining undrawn, and (B) [***] percent ([***]%) of the Dollar Equivalent of the aggregate face amount of all Letters of Credit denominated in a Foreign Currency remaining undrawn (plus, in each case, all interest, fees, and costs due or to become due in connection therewith (as estimated by Bank in its good faith business judgment)), to secure all of the Obligations relating to such Letters of Credit, as collateral security for the repayment of any future drawings under such Letters of Credit, and Borrower shall forthwith deposit and pay such amounts, and (ii) pay in advance all letter of credit fees scheduled to be paid or payable over the remaining term of any Letters of Credit;
- (d) terminate any FX Contracts;
- (e) verify the amount of, demand payment of and performance under, and collect any Accounts and General Intangibles, settle or adjust disputes and claims directly with Account Debtors for amounts on terms and in any order that Bank considers advisable, and notify any Person owing Borrower money of Bank's security interest in such funds. Borrower shall collect all payments in trust for Bank and, if requested by Bank, immediately deliver the payments to Bank in the form received from the Account Debtor, with proper endorsements for deposit;
- (f) make any payments and do any acts it considers necessary or reasonable to protect the Collateral and/or its security interest in the Collateral. Borrower shall assemble the Collateral if Bank requests and make it available as Bank designates. Bank may enter premises where the Collateral is located, take and maintain possession of any part of the Collateral, and pay, purchase, contest, or compromise any Lien which appears to be prior or superior to its security interest and pay all expenses incurred. Borrower grants Bank a license to enter and occupy any of its premises, without charge, to exercise any of Bank's rights or remedies;

(g) apply to the Obligations any (i) balances and deposits of Borrower it holds, or (ii) amount held by Bank owing to or for the credit or the account of Borrower;

(h) ship, reclaim, recover, store, finish, maintain, repair, prepare for sale, advertise for sale, and sell the Collateral. Bank is hereby granted a non-exclusive, royalty-free license or other right to use, without charge, Borrower's labels, Patents, Copyrights, mask works, rights of use of any name, trade secrets, trade names, Trademarks, and advertising matter, or any similar property as it pertains to the Collateral, in completing production of, advertising for sale, and selling any Collateral and, in connection with Bank's exercise of its rights under this Section 9.1, Borrower's rights under all licenses and all franchise agreements inure to Bank's benefit;

(i) place a "hold" on any account maintained with Bank and/or deliver a notice of exclusive control, any entitlement order, or other directions or instructions pursuant to any Control Agreement or similar agreements providing control of any Collateral;

(j) demand and receive possession of Borrower's Books; and

(k) exercise all rights and remedies available to Bank under the Loan Documents or at law or equity, including all remedies provided under the Code (including disposal of the Collateral pursuant to the terms thereof).

9.2 Power of Attorney. Borrower hereby irrevocably appoints Bank as its lawful attorney-in-fact, exercisable following the occurrence and during the continuance of an Event of Default, to: (a) endorse Borrower's name on any checks, payment instruments, or other forms of payment or security; (b) sign Borrower's name on any invoice or bill of lading for any Account or drafts against Account Debtors; (c) demand, collect, sue, and give releases to any Account Debtor for monies due, settle and adjust disputes and claims about the Accounts directly with Account Debtors, and compromise, prosecute, or defend any action, claim, case, or proceeding about any Collateral (including filing a claim or voting a claim in any bankruptcy case in Bank's or Borrower's name, as Bank chooses); (d) make, settle, and adjust all claims under Borrower's insurance policies; (e) pay, contest or settle any Lien, charge, encumbrance, security interest, or other claim in or to the Collateral, or any judgment based thereon, or otherwise take any action to terminate or discharge the same; and (f) transfer the Collateral into the name of Bank or a third party as the Code permits. Borrower hereby appoints Bank as its lawful attorney-in-fact to sign Borrower's name on any documents necessary to perfect or continue the perfection of Bank's security interest in the Collateral regardless of whether an Event of Default has occurred until all Obligations (other than inchoate indemnity obligations) have been satisfied in full and the Loan Documents have been terminated. Bank's foregoing appointment as Borrower's attorney in fact, and all of Bank's rights and powers, coupled with an interest, are irrevocable until all Obligations (other than inchoate indemnity obligations) have been fully repaid and performed and the Loan Documents have been terminated.

9.3 Protective Payments. If Borrower fails to obtain the insurance called for by Section 6.7 or fails to pay any premium thereon or fails to pay any other amount which Borrower is obligated to pay under this Agreement or any other Loan Document or which may be required to preserve the Collateral, Bank may obtain such insurance or make such payment, and all amounts so paid by Bank are Bank Expenses and immediately due and payable, bearing interest at the then highest rate applicable to the Obligations, and secured by the Collateral. Bank will make reasonable efforts to provide Borrower with notice of Bank obtaining such insurance at the time it is obtained or within a reasonable time thereafter. No payments by Bank are deemed an agreement to make similar payments in the future or Bank's waiver of any Event of Default.

9.4 Application of Payments and Proceeds Upon Default. If an Event of Default has occurred and is continuing, Bank shall have the right to apply in any order any funds in its possession, whether from Borrower account balances, payments, proceeds realized as the result of any collection of Accounts or other disposition of the Collateral, or otherwise, to the Obligations. Bank shall pay any surplus to Borrower by credit to the Designated Deposit Account or to other Persons legally entitled thereto; Borrower shall remain liable to Bank for any deficiency. If Bank, directly or indirectly, enters into a deferred payment or other credit transaction with any purchaser at any sale of Collateral, Bank shall have the option, exercisable at any time, of either reducing the Obligations by the principal amount of the purchase price or deferring the reduction of the Obligations until the actual receipt by Bank of cash therefor.

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Confidential treatment has been requested with respect to portions of this agreement.

9.5 Bank's Liability for Collateral. So long as Bank complies with reasonable banking practices regarding the safekeeping of the Collateral in the possession or under the control of Bank, Bank shall not be liable or responsible for: (a) the safekeeping of the Collateral; (b) any loss or damage to the Collateral; (c) any diminution in the value of the Collateral; or (d) any act or default of any carrier, warehouseman, bailee, or other Person. Borrower bears all risk of loss, damage or destruction of the Collateral.

9.6 No Waiver; Remedies Cumulative. Bank's failure, at any time or times, to require strict performance by Borrower of any provision of this Agreement or any other Loan Document shall not waive, affect, or diminish any right of Bank thereafter to demand strict performance and compliance herewith or therewith. No waiver hereunder shall be effective unless signed by the party granting the waiver and then is only effective for the specific instance and purpose for which it is given. Bank's rights and remedies under this Agreement and the other Loan Documents are cumulative. Bank has all rights and remedies provided under the Code, by law, or in equity. Bank's exercise of one right or remedy is not an election and shall not preclude Bank from exercising any other remedy under this Agreement or other remedy available at law or in equity, and Bank's waiver of any Event of Default is not a continuing waiver. Bank's delay in exercising any remedy is not a waiver, election, or acquiescence.

9.7 Demand Waiver. Borrower waives demand, notice of default or dishonor, notice of payment and nonpayment, notice of any default, nonpayment at maturity, release, compromise, settlement, extension, or renewal of accounts, documents, instruments, chattel paper, and guarantees held by Bank on which Borrower is liable.

10. NOTICES

All notices, consents, requests, approvals, demands, or other communication by any party to this Agreement or any other Loan Document must be in writing and shall be deemed to have been validly served, given, or delivered: (a) upon the earlier of actual receipt and three (3) Business Days after deposit in the U.S. mail, first class, registered or certified mail return receipt requested, with proper postage prepaid; (b) upon transmission, when sent by electronic mail; (c) one (1) Business Day after deposit with a reputable overnight courier with all charges prepaid; or (d) when delivered, if hand-delivered by messenger, all of which shall be addressed to the party to be notified and sent to the address, or email address indicated below. Bank or Borrower may change its mailing or electronic mail address by giving the other party written notice thereof in accordance with the terms of this Section 10

If to Borrower: Calix, Inc.
1035 N. McDowell Blvd
Petaluma, California 94954
Attn: Chief Financial Officer

with a copy to: Calix, Inc.
1035 N. McDowell Blvd.
Petaluma, California 94954
Attn: Legal Department
Email: Suzanne.tom@calix.com

If to Bank: Silicon Valley Bank
Stephen Chang, Vice President
555 Mission Street, Suite 900
San Francisco, California 94105
Telephone: (415) 764-3163
Email: schang@svb.com

11. CHOICE OF LAW, VENUE, JURY TRIAL WAIVER AND JUDICIAL REFERENCE

Except as otherwise expressly provided in any of the Loan Documents, California law governs the Loan Documents without regard to principles of conflicts of law. Borrower and Bank each submit to the exclusive jurisdiction of the State and Federal courts in Santa Clara County, California; provided, however, that nothing in this Agreement

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shall be deemed to operate to preclude Bank from bringing suit or taking other legal action in any other jurisdiction to realize on the Collateral or any other security for the Obligations, or to enforce a judgment or other court order in favor of Bank. Borrower expressly submits and consents in advance to such jurisdiction in any action or suit commenced in any such court, and Borrower hereby waives any objection that it may have based upon lack of personal jurisdiction, improper venue, or forum non conveniens and hereby consents to the granting of such legal or equitable relief as is deemed appropriate by such court. Borrower hereby waives personal service of the summons, complaints, and other process issued in such action or suit and agrees that service of such summons, complaints, and other process may be made by registered or certified mail addressed to Borrower at the address set forth in, or subsequently provided by Borrower in accordance with, Section 10 of this Agreement and that service so made shall be deemed completed upon the earlier to occur of Borrower's actual receipt thereof or three (3) days after deposit in the U.S. mails, proper postage prepaid.

TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, BORROWER AND BANK EACH WAIVE THEIR RIGHT TO A JURY TRIAL OF ANY CLAIM OR CAUSE OF ACTION ARISING OUT OF OR BASED UPON THIS AGREEMENT, THE LOAN DOCUMENTS OR ANY CONTEMPLATED TRANSACTION, INCLUDING CONTRACT, TORT, BREACH OF DUTY AND ALL OTHER CLAIMS. THIS WAIVER IS A MATERIAL INDUCEMENT FOR BOTH PARTIES TO ENTER INTO THIS AGREEMENT. EACH PARTY HAS REVIEWED THIS WAIVER WITH ITS COUNSEL.

WITHOUT INTENDING IN ANY WAY TO LIMIT THE PARTIES' AGREEMENT TO WAIVE THEIR RESPECTIVE RIGHT TO A TRIAL BY JURY, if the above waiver of the right to a trial by jury is not enforceable, the parties hereto agree that any and all disputes or controversies of any nature between them arising at any time shall be decided by a reference to a private judge, mutually selected by the parties (or, if they cannot agree, by the Presiding Judge of the Santa Clara County, California Superior Court) appointed in accordance with California Code of Civil Procedure Section 638 (or pursuant to comparable provisions of federal law if the dispute falls within the exclusive jurisdiction of the federal courts), sitting without a jury, in Santa Clara County, California; and the parties hereby submit to the jurisdiction of such court. The reference proceedings shall be conducted pursuant to and in accordance with the provisions of California Code of Civil Procedure Sections 638 through 645.1, inclusive. The private judge shall have the power, among others, to grant provisional relief, including without limitation, entering temporary restraining orders, issuing preliminary and permanent injunctions and appointing receivers. All such proceedings shall be closed to the public and confidential and all records relating thereto shall be permanently sealed. If during the course of any dispute, a party desires to seek provisional relief, but a judge has not been appointed at that point pursuant to the judicial reference procedures, then such party may apply to the Santa Clara County, California Superior Court for such relief. The proceeding before the private judge shall be conducted in the same manner as it would be before a court under the rules of evidence applicable to judicial proceedings. The parties shall be entitled to discovery which shall be conducted in the same manner as it would be before a court under the rules of discovery applicable to judicial proceedings. The private judge shall oversee discovery and may enforce all discovery rules and orders applicable to judicial proceedings in the same manner as a trial court judge. The parties agree that the selected or appointed private judge shall have the power to decide all issues in the action or proceeding, whether of fact or of law, and shall report a statement of decision thereon pursuant to California Code of Civil Procedure Section 644(a). Nothing in this paragraph shall limit the right of any party at any time to exercise self-help remedies, foreclose against collateral, or obtain provisional remedies. The private judge shall also determine all issues relating to the applicability, interpretation, and enforceability of this paragraph.

This Section 11 shall survive the termination of this Agreement.

12. GENERAL PROVISIONS

12.1 Termination Prior to Maturity Date; Survival. All covenants, representations and warranties made in this Agreement shall continue in full force until this Agreement has terminated pursuant to its terms and all Obligations (other than inchoate indemnity obligations) have been satisfied. So long as Borrower has satisfied the Obligations (other than inchoate indemnity obligations, and any other obligations which, by their terms, are to survive the termination of this Agreement, and any Obligations under Bank Services Agreements that are cash collateralized in accordance with Section 4.1 of this Agreement), this Agreement may be terminated prior to the Revolving Line Maturity Date by

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Borrower, effective three (3) Business Days after written notice of termination is given to Bank. Those obligations that are expressly specified in this Agreement as surviving this Agreement's termination shall continue to survive notwithstanding this Agreement's termination.

12.2 Successors and Assigns. This Agreement binds and is for the benefit of the successors and permitted assigns of each party. Borrower may not assign this Agreement or any rights or obligations under it without Bank's prior written consent (which may be granted or withheld in Bank's discretion). Bank has the right, without the consent of or notice to Borrower, to sell, transfer, assign, negotiate, or grant participation in all or any part of, or any interest in, Bank's obligations, rights, and benefits under this Agreement and the other Loan Documents. Notwithstanding the foregoing, so long as no Event of Default shall have occurred and is continuing, Bank shall not assign its interest in the Loan Documents to any Person who in the reasonable estimation of Bank is (a) a direct competitor of Borrower, whether as an operating company or direct or indirect parent with voting control over such operating company, or (b) a vulture fund or distressed debt fund.

12.3 Indemnification. Borrower agrees to indemnify, defend and hold Bank and its directors, officers, employees, agents, attorneys, or any other Person affiliated with or representing Bank (each, an "**Indemnified Person**") harmless against: (i) all obligations, demands, claims, and liabilities (collectively, "**Claims**") claimed or asserted by any other party in connection with the transactions contemplated by the Loan Documents; and (ii) all losses or expenses (including Bank Expenses) in any way suffered, incurred, or paid by such Indemnified Person as a result of, following from, consequential to, or arising from transactions between Bank and Borrower (including reasonable attorneys' fees and expenses), except for Claims and/or losses directly caused by such Indemnified Person's gross negligence or willful misconduct.

This Section 12.3 shall survive until all statutes of limitation with respect to the Claims, losses, and expenses for which indemnity is given shall have run.

12.4 Time of Essence. Time is of the essence for the performance of all Obligations in this Agreement.

12.5 Severability of Provisions. Each provision of this Agreement is severable from every other provision in determining the enforceability of any provision.

12.6 Correction of Loan Documents. Bank may correct patent errors and fill in any blanks in the Loan Documents consistent with the agreement of the parties so long as Bank provides Borrower with written notice of such correction..

12.7 Amendments in Writing; Waiver; Integration. No purported amendment or modification of any Loan Document, or waiver, discharge or termination of any obligation under any Loan Document, shall be enforceable or admissible unless, and only to the extent, expressly set forth in a writing signed by the party against which enforcement or admission is sought. Without limiting the generality of the foregoing, no oral promise or statement, nor any action, inaction, delay, failure to require performance or course of conduct shall operate as, or evidence, an amendment, supplement or waiver or have any other effect on any Loan Document. Any waiver granted shall be limited to the specific circumstance expressly described in it, and shall not apply to any subsequent or other circumstance, whether similar or dissimilar, or give rise to, or evidence, any obligation or commitment to grant any further waiver. 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 the Loan Documents merge into the Loan Documents.

12.8 Counterparts. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, is an original, and all taken together, constitute one Agreement.

12.9 Confidentiality. In handling any confidential information, Bank shall exercise the same degree of care that it exercises for its own proprietary information, but disclosure of information may be made: (a) to Bank's Subsidiaries or Affiliates (such Subsidiaries and Affiliates, together with Bank, collectively, "**Bank Entities**"); (b) to

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prospective transferees or purchasers of any interest in the Credit Extensions (provided, however, Bank shall use its best efforts to obtain any prospective transferee's or purchaser's agreement to the terms of this provision); (c) as required by law, regulation, subpoena, or other order; (d) to Bank's regulators or as otherwise required in connection with Bank's examination or audit; (e) as Bank considers appropriate in exercising remedies under the Loan Documents; and (f) to third-party service providers of Bank so long as such service providers have executed a confidentiality agreement with Bank with terms no less restrictive than those contained herein. Confidential information does not include information that is either: (i) in the public domain or in Bank's possession when disclosed to Bank, or becomes part of the public domain (other than as a result of its disclosure by Bank in violation of this Agreement) after disclosure to Bank; or (ii) disclosed to Bank by a third party, if Bank does not know that the third party is prohibited from disclosing the information.

Bank Entities may use anonymous forms of confidential information for aggregate datasets, for analyses or reporting, and for any other uses not expressly prohibited in writing by Borrower. The provisions of the immediately preceding sentence shall survive the termination of this Agreement.

12.10 Attorneys' Fees, Costs and Expenses. In any action or proceeding between Borrower and Bank arising out of or relating to the Loan Documents, the prevailing party shall be entitled to recover its reasonable attorneys' fees and other costs and expenses incurred, in addition to any other relief to which it may be entitled.

12.11 Electronic Execution of Documents. The words "execution," "signed," "signature" and words of like import in any Loan Document shall be deemed to include electronic signatures or the keeping of records in electronic form, each of which shall be of the same legal effect, validity and enforceability as a manually executed signature or the use of a paper-based recordkeeping systems, as the case may be, to the extent and as provided for in any applicable law, including, without limitation, any state law based on the Uniform Electronic Transactions Act.

12.12 Right of Setoff. Borrower hereby grants to Bank a Lien and a right of setoff as security for all Obligations to Bank, whether now existing or hereafter arising upon and against all deposits, credits, collateral and property, now or hereafter in the possession, custody, safekeeping or control of Bank or any entity under the control of Bank (including a subsidiary of Bank) or in transit to any of them. At any time after the occurrence and during the continuance of an Event of Default, without demand or notice, Bank may setoff the same or any part thereof and apply the same to any liability or Obligation of Borrower even though unmaturing and regardless of the adequacy of any other collateral securing the Obligations. ANY AND ALL RIGHTS TO REQUIRE BANK TO EXERCISE ITS RIGHTS OR REMEDIES WITH RESPECT TO ANY OTHER COLLATERAL WHICH SECURES THE OBLIGATIONS, PRIOR TO EXERCISING ITS RIGHT OF SETOFF WITH RESPECT TO SUCH DEPOSITS, CREDITS OR OTHER PROPERTY OF BORROWER, ARE HEREBY KNOWINGLY, VOLUNTARILY AND IRREVOCABLY WAIVED.

12.13 Captions. The headings used in this Agreement are for convenience only and shall not affect the interpretation of this Agreement.

12.14 Construction of Agreement. The parties mutually acknowledge that they and their attorneys have participated in the preparation and negotiation of this Agreement. In cases of uncertainty this Agreement shall be construed without regard to which of the parties caused the uncertainty to exist.

12.15 Relationship. The relationship of the parties to this Agreement is determined solely by the provisions of this Agreement. The parties do not intend to create any agency, partnership, joint venture, trust, fiduciary or other relationship with duties or incidents different from those of parties to an arm's-length contract.

12.16 Third Parties. Nothing in this Agreement, whether express or implied, is intended to: (a) confer any benefits, rights or remedies under or by reason of this Agreement on any persons other than the express parties to it and their respective permitted successors and assigns; (b) relieve or discharge the obligation or liability of any person not an express party to this Agreement; or (c) give any person not an express party to this Agreement any right of subrogation or action against any party to this Agreement.

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13. DEFINITIONS

13.1 Definitions. As used in the Loan Documents, the word “shall” is mandatory, the word “may” is permissive, the word “or” is not exclusive, the words “includes” and “including” are not limiting, the singular includes the plural, and numbers denoting amounts that are set off in brackets are negative. As used in this Agreement, the following capitalized terms have the following meanings:

“**Account**” is, as to any Person, any “**account**” of such Person as “account” is defined in the Code with such additions to such term as may hereafter be made, and includes, without limitation, all accounts receivable and other sums owing to such Person.

“**Account Debtor**” is any “**account debtor**” as defined in the Code with such additions to such term as may hereafter be made.

“**Additional Costs**” is defined in Section 3.7.

“**Adjusted Quick Ratio**” is the ratio of (a) Quick Assets to (b) (i) Current Liabilities, plus (ii) all outstanding Obligations to Bank, minus (iii) the current portion of Deferred Revenue.

“**Administrator**” is an individual that is named:

(a) as an “Administrator” in the “SVB Online Services” form completed by Borrower with the authority to determine who will be authorized to use SVB Online Services (as defined in the “Banking Terms and Conditions”) on behalf of Borrower; and

(b) as an Authorized Signer of Borrower in an approval by the Board.

“**Advance**” or “**Advances**” means a revolving credit loan (or revolving credit loans) under the Revolving Line, including Formula Advances and Non-Formula Advances.

“**Affiliate**” is, with respect to any Person, each other Person that owns or controls directly or indirectly the Person, any Person that controls or is controlled by or is under common control with the Person, and each of that Person’s senior executive officers, directors, partners and, for any Person that is a limited liability company, that Person’s managers and members. For purposes of the definition of (i) Eligible Accounts, Affiliate shall include a Specified Affiliate, and (ii) Quick Assets, Affiliate shall include Bank’s joint venture partner in the People’s Republic of China).

“**Agreement**” is defined in the preamble hereof.

“**Authorized Signer**” is any individual listed in Borrower’s Borrowing Resolution who is authorized to execute the Loan Documents, including making (and executing if applicable) any Credit Extension request, on behalf of Borrower.

“**Availability Amount**” is (a) the lesser of (i) the Revolving Line or (ii) the amount available under the Borrowing Base, minus (b) the aggregate Dollar Equivalent amount of all outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit) plus an amount equal to the Letter of Credit Reserve, and minus (c) the outstanding principal balance of any Formula Advances.

“**Bank**” is defined in the preamble hereof.

“**Bank Entities**” is defined in Section 12.9.

“**Bank Expenses**” are all audit fees and expenses, costs, and expenses (including reasonable attorneys’ fees and expenses) for preparing, amending, negotiating, administering, defending and enforcing the Loan Documents

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(including, without limitation, those incurred in connection with appeals or Insolvency Proceedings) or otherwise incurred with respect to Borrower or any Guarantor.

“ **Bank Services** ” are any products, credit services, and/or financial accommodations previously, now, or hereafter provided to Borrower or any of its Subsidiaries by Bank or any Bank Affiliate, including, without limitation, any letters of credit, cash management services (including, without limitation, merchant services, direct deposit of payroll, business credit cards, and check cashing services), interest rate swap arrangements, and foreign exchange services as any such products or services may be identified in Bank’s various agreements related thereto (each, a “ **Bank Services Agreement** ”) and shall include, without limitation, any Letters of Credit pursuant to Section 2.3.

“ **Bank Services Agreement** ” is defined in the definition of Bank Services.

“ **Board** ” is Borrower’s board of directors.

“ **Borrower** ” is defined in the preamble hereof.

“ **Borrower’s Books** ” are all Borrower’s books and records including ledgers, federal and state tax returns, records regarding Borrower’s assets or liabilities, the Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

“ **Borrowing Base** ” is (a) eighty percent (80%) of Eligible Accounts (other than Eligible [***] Accounts and Eligible Foreign Accounts), plus (b) the lesser of (i) seventy percent (70%) of Eligible Foreign Accounts billed and/or payable in Dollars plus sixty-five percent (65%) of Eligible Foreign Accounts billed and/or payable in Euros, Pounding Sterling, or Canadian Dollars, or (ii) [***] Dollars (\$[***]), plus (c) [***] percent ([**]%) of Eligible [***] Accounts, provided Eligible [***] Accounts shall only be included in the Borrowing Base from the Effective Date through February 1, 2018, as determined by Bank from Borrower’s most recent Borrowing Base Report (and as may subsequently be updated by Bank based upon information received by Bank including, without limitation, Accounts that are paid and/or billed following the date of the Borrowing Base Report); provided, however, that Bank has the right to decrease the foregoing percentages in its good faith business judgment to mitigate the impact of events, conditions, contingencies, or risks which may adversely affect the Collateral or its value after the Effective Date.

“ **Borrowing Base Report** ” is that certain report of the value of certain Collateral in the form specified by Bank to Borrower from time to time.

“ **Borrowing Resolutions** ” are, with respect to any Person, those resolutions adopted by such Person’s board of directors (and, if required under the terms of such Person’s Operating Documents, stockholders) and delivered by such Person to Bank approving the Loan Documents to which such Person is a party and the transactions contemplated thereby, together with a certificate executed by its secretary on behalf of such Person certifying (a) such Person has the authority to execute, deliver, and perform its obligations under each of the Loan Documents to which it is a party, (b) that set forth as a part of or attached as an exhibit to such certificate is a true, correct, and complete copy of the resolutions then in full force and effect authorizing and ratifying the execution, delivery, and performance by such Person of the Loan Documents to which it is a party, (c) the name(s) of the Person(s) authorized to execute the Loan Documents, including making (and executing if applicable) any Credit Extension request, on behalf of such Person, together with a sample of the true signature(s) of such Person(s), and (d) that Bank may conclusively rely on such certificate unless and until such Person shall have delivered to Bank a further certificate canceling or amending such prior certificate.

“ **Business Day** ” is any day that is not a Saturday, Sunday or a day on which Bank is closed, except that if any determination of a “Business Day” shall relate to a LIBOR Advance, the term “Business Day” shall also mean a day on which dealings are carried on in the London interbank market.

“ **Calix International** ” is CALIX INTERNATIONAL, INC., a Delaware corporation, its successors and assigns.

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“ **Canadian Dollars** ” means the lawful money of Canada.

“ **Cash Collateral Account** ” is defined in Section 6.3(c).

“ **Cash Equivalents** ” means (a) marketable direct obligations issued or unconditionally guaranteed by the United States or any agency or any State thereof having maturities of not more than one (1) year from the date of acquisition; (b) commercial paper maturing no more than one (1) year after its creation and having the highest rating from either Standard & Poor’s Ratings Group or Moody’s Investors Service, Inc.; (c) Bank’s certificates of deposit issued maturing no more than one (1) year after issue; (d) money market funds at least ninety-five percent (95%) of the assets of which constitute Cash Equivalents of the kinds described in clauses (a) through (c) of this definition; and (e) any other investments held with Bank or any of Bank’s Affiliates.

“ **Change in Control** ” means (a) 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 Borrower (determined on a fully diluted basis) other than by the sale of Borrower’s equity securities in a public offering or to venture capital or private equity investors so long as Borrower identifies to Bank the venture capital or private equity investors at least seven (7) Business Days prior to the closing of the transaction and provides to Bank a description of the material terms of the transaction; (b) during any period of twelve (12) consecutive months, a majority of the members of the board of directors or other equivalent governing body of Borrower cease to be composed of individuals (i) who were members of that board or equivalent governing body on the first day of such period, (ii) whose election or nomination to that board or equivalent governing body was approved by individuals referred to in clause (i) above constituting at the time of such election or nomination at least a majority of that board or equivalent governing body or (iii) whose election or nomination to that board or other equivalent governing body was approved by individuals referred to in clauses (i) and (ii) above constituting at the time of such election or nomination at least a majority of that board or equivalent governing body; or (c) at any time, Borrower shall cease to own and control, of record and beneficially, directly or indirectly, one hundred percent (100.0%) of each class of outstanding capital stock of each Subsidiary of Borrower (unless such Subsidiary is dissolved or merged into Borrower or a Guarantor) free and clear of all Liens (except Liens created by this Agreement).

“ **Claims** ” is defined in Section 12.3.

“ **Code** ” is the Uniform Commercial Code, as the same may, from time to time, be enacted and in effect in the State of California; provided, that, to the extent that the Code is used to define any term herein or in any Loan Document and such term is defined differently in different Articles or Divisions of the Code, the definition of such term contained in Article or Division 9 shall govern; provided further, that in the event that, by reason of mandatory provisions of law, any or all of the attachment, perfection, or priority of, or remedies with respect to, Bank’s Lien on any Collateral is governed by the Uniform Commercial Code in effect in a jurisdiction other than the State of California, the term “Code” shall mean the Uniform Commercial Code as enacted and in effect in such other jurisdiction solely for purposes of the provisions thereof relating to such attachment, perfection, priority, or remedies and for purposes of definitions relating to such provisions.

“ **Collateral** ” is any and all properties, rights and assets of Borrower described on Exhibit A.

“ **Collateral Account** ” is any Deposit Account, Securities Account, or Commodity Account.

“ **Commitment Fee** ” is defined in Section 2.6(a).

“ **Commitment Increase Request** ” is defined in Section 2.2(c).

“ **Commodity Account** ” is any “commodity account” as defined in the Code with such additions to such term as may hereafter be made.

“ **Compliance Certificate** ” is that certain certificate in the form attached hereto as Exhibit B.

“ **Contingent Obligation** ” is, for any Person, any direct or indirect liability, contingent or not, of that Person for (a) any indebtedness, lease, dividend, letter of credit or other obligation of another such as an obligation, in each case, directly or indirectly guaranteed, endorsed, co made, discounted or sold with recourse by that Person, or for which that Person is directly or indirectly liable; (b) any obligations for undrawn letters of credit for the account of that Person; and (c) all obligations from any interest rate, currency or commodity swap agreement, interest rate cap or collar agreement, or other agreement or arrangement designated to protect a Person against fluctuation in interest rates, currency exchange rates or commodity prices; but “Contingent Obligation” does not include endorsements in the ordinary course of business. The amount of a Contingent Obligation is the stated or determined amount of the primary obligation for which the Contingent Obligation is made or, if not determinable, the maximum reasonably anticipated liability for it determined by the Person in good faith; but the amount may not exceed the maximum of the obligations under any guarantee or other support arrangement.

“ **Continuation Date** ” means any date on which Borrower continues a LIBOR Advance into another Interest Period.

“ **Control Agreement** ” is any control agreement entered into among the depository institution at which Borrower maintains a Deposit Account or the securities intermediary or commodity intermediary at which Borrower maintains a Securities Account or a Commodity Account, Borrower, and Bank pursuant to which Bank obtains control (within the meaning of the Code) over such Deposit Account, Securities Account, or Commodity Account.

“ **Conversion Date** ” means any date on which Borrower converts a Prime Rate Advance to a LIBOR Advance or a LIBOR Advance to a Prime Rate Advance.

“ **Copyrights** ” are any and all copyright rights, copyright applications, copyright registrations and like protections in each work of authorship and derivative work thereof, whether published or unpublished and whether or not the same also constitutes a trade secret.

“ **Credit Extension** ” is any Advance, any Overadvance, Letter of Credit, or any other extension of credit by Bank for Borrower’s benefit.

“ **Currency** ” is coined money and such other banknotes or other paper money as are authorized by law and circulate as a medium of exchange.

“ **Current Liabilities** ” is on any day, obligations that should, under GAAP, be classified as liabilities on Borrower’s consolidated balance sheet, including all Indebtedness and current portion of Subordinated Debt permitted by Bank to be paid by Borrower (but excluding (i) all other Subordinated Debt, (ii) Obligations to Bank, and (iii) any Indebtedness that is cash secured or is otherwise collateralized pursuant to terms acceptable to Bank in its sole discretion), that mature within one (1) year.

“ **Default Rate** ” is defined in Section 2.5(e).

“ **Deferred Revenue** ” is all amounts received or invoiced in advance of performance under contracts and not yet recognized as revenue.

“ **Deposit Account** ” is any “ **deposit account** ” as defined in the Code with such additions to such term as may hereafter be made.

“ **Designated Deposit Account** ” is the account number ending 843 (last three digits) maintained by Borrower with Bank.

“ **Dollars** ,” “ **dollars** ” or use of the sign “\$” means only lawful money of the United States and not any other currency, regardless of whether that currency uses the “\$” sign to denote its currency or may be readily converted into lawful money of the United States.

“ **Dollar Equivalent** ” is, at any time, (a) with respect to any amount denominated in Dollars, such amount, and (b) with respect to any amount denominated in a Foreign Currency, the equivalent amount therefor in Dollars as determined by Bank at such time on the basis of the then-prevailing rate of exchange in San Francisco, California, for sales of the Foreign Currency for transfer to the country issuing such Foreign Currency.

“ **Domestic Subsidiary** ” is a Subsidiary organized under the laws of the United States or any state or territory thereof or the District of Columbia.

“ **Effective Date** ” is defined in the preamble hereof.

“ **Eligible Accounts** ” means Accounts owing to Borrower which arise in the ordinary course of Borrower’s business that meet all Borrower’s representations and warranties in Section 5.3, that have been, at the option of Bank, confirmed in accordance with Section 6.3(f) of this Agreement, and are due and owing from Account Debtors deemed creditworthy by Bank in its good faith business judgment. Bank reserves the right at any time after the Effective Date and with notice to Borrower, to adjust any of the criteria set forth below and to establish new criteria, in each case, in its good faith business judgment. Unless Bank otherwise agrees in writing, Eligible Accounts shall not include:

- (a) Accounts (i) for which the Account Debtor is Borrower’s Affiliate, executive officer, or agent, or (ii) that are intercompany Accounts;
- (b) Accounts that the Account Debtor has not paid within ninety (90) days ([***) ([***)] days for Eligible [***) Accounts) of invoice date regardless of invoice payment period terms;
- (c) Accounts with credit balances over ninety (90) days from invoice date ([***) (180) days for Eligible [***) Accounts);
- (d) Accounts owing from an Account Debtor if fifty percent (50%) or more of the Accounts owing from such Account Debtor have not been paid within ninety (90) days of invoice date ([***) ([***)] days for Eligible [***) Accounts);
- (e) Accounts owing from an Account Debtor (i) which does not have its principal place of business in the United States or (ii) whose billing address (as set forth in the applicable invoice for such Account) is not in the United States, in each case other than Eligible Foreign Accounts;
- (f) Accounts billed from and/or payable to Borrower outside of the United States;
- (g) Accounts in which Bank does not have a first priority, perfected security interest under all applicable laws;
- (h) Accounts billed and/or payable in a Currency other than Dollars other than Eligible Foreign Accounts;
- (i) Accounts owing from an Account Debtor to the extent that Borrower is indebted or obligated in any manner to the Account Debtor (as creditor, lessor, supplier or otherwise - sometimes called “contra” accounts, accounts payable, customer deposits or credit accounts), but only to the extent so indebted or obligated;
- (j) Accounts with or in respect of accruals for marketing allowances, incentive rebates, price protection, cooperative advertising and other similar marketing credits, but only to the extent of such allowances, rebates, or similar marketing credits;

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(k) Accounts owing from an Account Debtor which is a United States government entity or any department, agency, or instrumentality thereof (other than RUS Accounts subject to requirements of the RUS) unless Borrower has assigned its payment rights to Bank and the assignment has been acknowledged under the Federal Assignment of Claims Act of 1940, as amended;

(l) Accounts with customer deposits and/or with respect to which Borrower has received an upfront payment, to the extent of such customer deposit and/or upfront payment;

(m) Accounts for demonstration or promotional equipment, or in which goods are consigned, or sold on a “sale guaranteed”, “sale or return”, “sale on approval”, or other terms if Account Debtor’s payment may be conditional, but only to the extent of such consignment or conditional payment;

(n) Accounts owing from an Account Debtor where goods or services have not yet been rendered to the Account Debtor (sometimes called memo billings or pre-billings);

(o) Accounts (other than RUS Accounts subject to requirements of the RUS) subject to contractual arrangements between Borrower and an Account Debtor where payments shall be scheduled or due according to completion or fulfillment requirements (sometimes called contracts accounts receivable, progress billings, milestone billings, or fulfillment contracts), but only to the extent of such amounts subject to completion or fulfillment requirements;

(p) Accounts (other than RUS Accounts subject to requirements of the RUS) owing from an Account Debtor the amount of which may be subject to withholding based on the Account Debtor’s satisfaction of Borrower’s complete performance (but only to the extent of the amount withheld; sometimes called retainage billings);

(q) Accounts (other than RUS Accounts subject to requirements of the RUS) subject to trust provisions, subrogation rights of a bonding company, or a statutory trust;

(r) Accounts owing from an Account Debtor that has been invoiced for goods that have not been shipped to the Account Debtor unless Bank, Borrower, and the Account Debtor have entered into an agreement acceptable to Bank 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 Borrower (sometimes called “bill and hold” accounts);

(s) Accounts for which the Account Debtor has not been invoiced;

(t) Accounts that represent non-trade receivables or that are derived by means other than in the ordinary course of Borrower’s business;

(u) Accounts for which Borrower has permitted Account Debtor’s payment to extend beyond ninety (90) days (including Accounts with a due date that is more than ninety (90) days from invoice date) (one hundred eighty (180) days for Eligible [***] Accounts);

(v) Accounts arising from chargebacks, debit memos or other payment deductions taken by an Account Debtor, but only to the extent of such chargeback or debt;

(w) Accounts arising from product returns and/or exchanges (sometimes called “warranty” or “RMA” accounts);

(x) Accounts in which the Account Debtor disputes liability or makes any claim (but only up to the disputed or claimed amount), or if the Account Debtor is subject to an Insolvency Proceeding (whether voluntary or involuntary), or becomes insolvent, or goes out of business;

[*] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission
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(y) Accounts owing from an Account Debtor with respect to which Borrower has received Deferred Revenue (but only to the extent of such Deferred Revenue);

(z) Accounts owing from an Account Debtor, whose total obligations to Borrower exceed twenty-five percent (25%) of all Accounts, except for Eligible [***] Accounts, for which such percentage is [***] percent ([***]%), for the amounts that exceed that percentage, unless Bank approves in writing; and

(aa) Accounts for which Bank in its good faith business judgment determines collection to be doubtful, including, without limitation, accounts represented by “refreshed” or “recycled” invoices.

For the avoidance of doubt, if Eligible Accounts in this definition owing from [***] that would constitute Eligible Accounts notwithstanding the specific requirements for Eligible [***] Accounts, such Accounts shall be treated as Eligible Accounts under this Agreement.

“ **Eligible [***] Accounts** ” are, from the Effective Date through February 1, 2018, Accounts for which the Account Debtor is [***] and which (i) otherwise satisfy the definition of Eligible Accounts, and (ii) at no time will total Advances made against such Accounts exceed [***] Dollars (\$[***]).

“ **Eligible Foreign Accounts** ” are Accounts for which the Account Debtor is [***], which are Account Debtors that do not have their principal place of business in the United States, and which (a) otherwise satisfy the definition of Eligible Accounts, (b) are billed and collected in the United States, and (c) are billed and/or payable in Dollars, Euros, Pounding Sterling, or Canadian Dollars.

“ **Equipment** ” is all “ **equipment** ” as defined in the Code with such additions to such term as may hereafter be made, and includes without limitation all machinery, fixtures, goods, vehicles (including motor vehicles and trailers), and any interest in any of the foregoing.

“ **ERISA** ” is the Employee Retirement Income Security Act of 1974, and its regulations.

“ **Euros** ,” “ **euros** ” and “ **€** ” each mean the official currency of the European Union, as adopted by the European Council at its meeting in Madrid, Spain on December 15 and 16, 1995.

“ **Event of Default** ” is defined in Section 8.

“ **Exchange Act** ” is the Securities Exchange Act of 1934, as amended.

“ **Foreign Currency** ” means lawful money of a country other than the United States.

“ **Foreign Subsidiary** ” is any Subsidiary which is not a Domestic Subsidiary.

“ **Formula Advance** ” is defined in Section 2.2(a).

“ **Funding Date** ” is any date on which a Credit Extension is made to or for the account of Borrower which shall be a Business Day.

“ **FX Contract** ” is any foreign exchange contract by and between Borrower and Bank under which Borrower commits to purchase from or sell to Bank a specific amount of Foreign Currency on a specified date.

“ **GAAP** ” is generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants and statements and pronouncements of the Financial Accounting Standards Board or in such other statements by such other Person as may be approved by a significant segment of the accounting profession, which are applicable to the circumstances as of the date of determination.

“ **General Intangibles** ” is all “general intangibles” as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation, all Intellectual Property, claims, income and other tax refunds, security and other deposits, payment intangibles, contract rights, options to purchase or sell real or personal property, rights in all litigation presently or hereafter pending (whether in contract, tort or otherwise), insurance policies (including without limitation key man, property damage, and business interruption insurance), payments of insurance and rights to payment of any kind.

“ **Good Faith Deposit** ” is defined in Section 2.6(b).

“ **Governmental Approval** ” is any consent, authorization, approval, order, license, franchise, permit, certificate, accreditation, registration, filing or notice, of, issued by, from or to, or other act by or in respect of, any Governmental Authority.

“ **Governmental Authority** ” is any nation or government, any state or other political subdivision thereof, any agency, authority, instrumentality, regulatory body, court, central bank or other entity exercising executive, legislative, judicial, taxing, regulatory or administrative functions of or pertaining to government, any securities exchange and any self-regulatory organization.

“ **Guarantor** ” is any Person providing a Guaranty in favor of Bank.

“ **Guaranty** ” is any guarantee of all or any part of the Obligations, as the same may from time to time be amended, restated, modified or otherwise supplemented.

“ **Increase Activation Fee** ” is defined in Section 2.2(c).

“ **Increased Revolving Line** ” is defined in Section 2.2(c).

“ **Increased Revolving Line Effective Date** ” is defined in Section 2.2(c).

“ **Indebtedness** ” is (a) indebtedness for borrowed money or the deferred price of property or services, such as reimbursement and other obligations for surety bonds and letters of credit, (b) obligations evidenced by notes, bonds, debentures or similar instruments, (c) capital lease obligations, and (d) Contingent Obligations.

“ **Indemnified Person** ” is defined in Section 12.3.

“ **Insolvency Proceeding** ” is any proceeding by or against any Person under the United States Bankruptcy Code, or any other bankruptcy or insolvency law, including assignments for the benefit of creditors, compositions, extensions generally with its creditors, or proceedings seeking reorganization, arrangement, or other relief.

“ **Intellectual Property** ” means, with respect to any Person, all of such Person’s right, title, and interest in and to the following:

- (a) its Copyrights, Trademarks and Patents;
- (b) any and all trade secrets and trade secret rights, including, without limitation, any rights to unpatented inventions, know-how and operating manuals;
- (c) any and all source code;
- (d) any and all design rights which may be available to such Person;
- (e) any and all claims for damages by way of past, present and future infringement of any of the foregoing, with the right, but not the obligation, to sue for and collect such damages for said use or infringement of the Intellectual Property rights identified above; and

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(f) all amendments, renewals and extensions of any of the Copyrights, Trademarks or Patents.

“ **Interest Payment Date** ” means, with respect to any LIBOR Advance, the last day of each Interest Period applicable to such LIBOR Advance and, with respect to Prime Rate Advances, the Payment Date.

“ **Interest Period** ” means, as to any LIBOR Advance, the period commencing on the date of such LIBOR Advance, or on the conversion/continuation date on which the LIBOR Advance is converted into or continued as a LIBOR Advance, and ending on the date that is one (1), two (2), three (3), or six (6) months thereafter, in each case as Borrower may elect in the applicable Notice of Borrowing or Notice of Conversion/Continuation; provided, however, that (a) no Interest Period with respect to any LIBOR Advance shall end later than the Revolving Line Maturity Date, (b) the last day of an Interest Period shall be determined in accordance with the practices of the LIBOR interbank market as from time to time in effect, (c) if any Interest Period would otherwise end on a day that is not a Business Day, that Interest Period shall be extended to the following Business Day unless, in the case of a LIBOR Advance, the result of such extension would be to carry such Interest Period into another calendar month, in which event such Interest Period shall end on the preceding Business Day, (d) any Interest Period pertaining to a LIBOR Advance that begins on the last Business Day of a calendar month (or on a day for which there is no numerically corresponding day in the calendar month at the end of such Interest Period) shall end on the last Business Day of the calendar month at the end of such Interest Period, and (e) interest shall accrue from and include the first Business Day of an Interest Period but exclude the last Business Day of such Interest Period.

“ **Interest Rate Determination Date** ” means each date for calculating the LIBOR for purposes of determining the interest rate in respect of an Interest Period. The Interest Rate Determination Date shall be the second Business Day prior to the first day of the related Interest Period for a LIBOR Advance.

“ **Inventory** ” is all “ **inventory** ” as defined in the Code in effect on the date hereof with such additions to such term as may hereafter be made, and includes without limitation all merchandise, raw materials, parts, supplies, packing and shipping materials, work in process and finished products, including without limitation such inventory as is temporarily out of Borrower’s custody or possession or in transit and including any returned goods and any documents of title representing any of the above.

“ **Investment** ” is any beneficial ownership interest in any Person (including stock, partnership interest or other securities), and any loan, advance or capital contribution to any Person.

“ **IP Agreement** ” is that certain Intellectual Property Security Agreement between Borrower and Bank dated as of the Effective Date, as may be amended, modified or restated from time to time.

“ **Letter of Credit** ” means a standby letter of credit issued by Bank or another institution based upon an application, guarantee, indemnity or similar agreement on the part of Bank as set forth in Section 2.3.

“ **Letter of Credit Application** ” is defined in Section 2.3(b).

“ **Letter of Credit Reserve** ” is defined in Section 2.3(e).

“ **LIBOR** ” means, for any Interest Rate Determination Date with respect to an Interest Period for any Advance to be made, continued as or converted into a LIBOR Advance, the rate of interest per annum determined by Bank to be the per annum rate of interest at which deposits in Dollars are offered to Bank in the London interbank market (rounded upward, if necessary, to the nearest 0.00001%) in which Bank customarily participates at 11:00 a.m. (local time in such interbank market) two (2) Business Days prior to the first day of such Interest Period for a period approximately equal to such Interest Period and in an amount approximately equal to the amount of such Advance; provided that, in the event such rate of interest is less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

“ **LIBOR Advance** ” means an Advance that bears interest based at the LIBOR Rate.

“ **LIBOR Rate** ” means, for each Interest Period in respect of LIBOR Advances comprising part of the same Advances, an interest rate per annum (rounded upward, if necessary, to the nearest 0.00001%) equal to LIBOR for such Interest Period divided by one (1) minus the Reserve Requirement for such Interest Period.

“ **LIBOR Rate Margin** ” is (a) if the Adjusted Quick Ratio is at least [***], two percent (2.00%), (b) if the Adjusted Quick Ratio is at least [***] but less than [***], two and one-half of one percent (2.50%), and (c) if the Adjusted Quick Ratio is less than [***], three percent (3.00%).

“ **Lien** ” is a claim, mortgage, deed of trust, levy, charge, pledge, security interest or other encumbrance of any kind, whether voluntarily incurred or arising by operation of law or otherwise against any property.

“ **Loan Documents** ” are, collectively, this Agreement and any schedules, exhibits, certificates, notices, and any other documents related to this Agreement, the IP Agreement, the Stock Pledge Agreement, any Bank Services Agreement, any subordination agreement, any note, or notes or guaranties executed by Borrower or any Guarantor, and any other present or future agreement by Borrower and/or any Guarantor with or for the benefit of Bank in connection with this Agreement or Bank Services, all as amended, restated, or otherwise modified.

“ **Material Adverse Change** ” is (a) a material impairment in the perfection or priority of Bank’s Lien in the Collateral or in the value of such Collateral; (b) a material adverse change in the business, operations, or condition (financial or otherwise) of Borrower; or (c) a material impairment of the prospect of repayment of any portion of the Obligations.

“ **Monthly Financial Statements** ” is defined in Section 6.2(c).

“ **Non-Formula Advance** ” is defined in Section 2.2(d).

“ **Non-Formula Amount** ” is Five Million Dollars (\$5,000,000).

“ **Notice of Borrowing** ” means a notice given by Borrower to Bank in accordance with Section 3.4, substantially in the form of Exhibit C, with appropriate insertions.

“ **Notice of Conversion/Continuation** ” means a notice given by Borrower to Bank in accordance with Section 3.5, substantially in the form of Exhibit D, with appropriate insertions.

“ **Obligations** ” are Borrower’s obligations to pay when due any debts, principal, interest, fees, Bank Expenses, the Unused Revolving Line Facility Fee, the Termination Fee, and other amounts Borrower owes Bank now or later, whether under this Agreement, the other Loan Documents, including, without limitation, all obligations relating to Bank Services and interest accruing after Insolvency Proceedings begin and debts, liabilities, or obligations of Borrower assigned to Bank, and to perform Borrower’s duties under the Loan Documents.

“ **Operating Documents** ” are, for any Person, such Person’s formation documents, as certified by the Secretary of State (or equivalent agency) of such Person’s jurisdiction of organization on a date that is no earlier than thirty (30) days prior to the Effective Date, and, (a) if such Person is a corporation, its bylaws in current form, (b) if such Person is a limited liability company, its limited liability company agreement (or similar agreement), and (c) if such Person is a partnership, its partnership agreement (or similar agreement), each of the foregoing with all current amendments or modifications thereto.

“ **Overadvance** ” is defined in Section 2.3.

“ **Patents** ” means all patents, patent applications and like protections including without limitation improvements, divisions, continuations, renewals, reissues, extensions and continuations-in-part of the same.

“ **Payment Date** ” is the last calendar day of each month.

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“ **Perfection Certificate** ” is defined in Section 5.1.

“ **Permitted Indebtedness** ” is:

- (a) Borrower’s Indebtedness to Bank under this Agreement and the other Loan Documents;
- (b) Indebtedness existing on the Effective Date which is shown on the Perfection Certificate;
- (c) Subordinated Debt;
- (d) unsecured Indebtedness to trade creditors incurred in the ordinary course of business;
- (e) Indebtedness incurred as a result of endorsing negotiable instruments received in the ordinary course of business;
- (f) Indebtedness secured by Liens permitted under clauses (a) and (c) of the definition of “Permitted Liens” hereunder;
- (g) unsecured Indebtedness under corporate credit cards used in the ordinary course of business;
- (h) Indebtedness incurred in the ordinary course of business under performance, surety, statutory, or appeal bonds in an aggregate principal amount not to exceed [***] Dollars (\$[***]) in any fiscal year;
- (i) Indebtedness composing Permitted Investments;
- (j) overdrafts paid within ten (10) days;
- (k) Indebtedness incurred solely in connection with deposits for real property in the ordinary course of business;
- (l) other Indebtedness not otherwise permitted by Section 7.4 not exceeding [***] Dollars (\$[***]) in the aggregate outstanding at any time; and
- (m) extensions, refinancings, modifications, amendments and restatements of any items of Permitted Indebtedness (a) through (l) above, provided that the principal amount thereof is not increased or the terms thereof are not modified to impose more burdensome terms upon Borrower or its Subsidiary, as the case may be.

“ **Permitted Investments** ” are:

- (a) Investments (including, without limitation, Subsidiaries) existing on the Effective Date which are shown on the Perfection Certificate;
- (b) Investments consisting of Cash Equivalents;
- (c) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of Borrower;
- (d) Investments consisting of deposit accounts (but only to the extent that Borrower is permitted to maintain such accounts pursuant to Section 6.8 of this Agreement) in which Bank has a first priority perfected security interest;
- (e) Investments accepted in connection with Transfers permitted by Section 7.1;

(f) Investments consisting of the creation of a Subsidiary for the purpose of consummating a merger transaction permitted by Section 7.3 of this Agreement, which is otherwise a Permitted Investment;

(g) Investments (i) by Borrower in Subsidiaries (other than Calix International) not to [***] Dollars (\$[***]) in the aggregate in any fiscal year, (ii) by any Borrower or Secured Guarantor in any other Borrower or Secured Guarantor, and (iii) by Subsidiaries (other than Calix International) in other Subsidiaries (other than Calix International) not to exceed [***] Dollars (\$[***]) in the aggregate in any fiscal year or in Borrower;

(h) Investments consisting of (i) travel advances and employee relocation loans and other employee loans and advances in the ordinary course of business, and (ii) loans to employees, officers or directors relating to the purchase of equity securities of Borrower or its Subsidiaries pursuant to employee stock purchase plans or agreements approved by the Board;

(i) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of business;

(j) joint ventures or strategic alliances or collaboration of Borrower or a Subsidiary, provided that any cash investments by Borrower do not exceed [***] Dollars (\$[***]) in the aggregate in any fiscal year;

(k) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the ordinary course of business; provided that this paragraph (k) shall not apply to Investments of Borrower in any Subsidiary; and

(l) other Investments not otherwise permitted by this Agreement not exceeding [***] Dollars (\$[***]) in the aggregate outstanding at any time.

“ **Permitted Liens** ” are:

(a) Liens existing on the Effective Date which are shown on the Perfection Certificate or arising under this Agreement or the other Loan Documents;

(b) Liens for taxes, fees, assessments or other government charges or levies, either (i) not due and payable or (ii) being contested in good faith and for which Borrower maintains adequate reserves on Borrower’s Books, provided that no notice of any such Lien has been filed or recorded under the Internal Revenue Code of 1986, as amended, and the Treasury Regulations adopted thereunder;

(c) purchase money Liens (i) on Equipment acquired or held by Borrower incurred for financing the acquisition of the Equipment securing no more than [***] Dollars (\$[***]) in the aggregate amount outstanding, or (ii) existing on Equipment when acquired, if the Lien is confined to the property and improvements and the proceeds of the Equipment;

(d) Liens of carriers, warehousemen, suppliers, or other Persons that are possessory in nature arising in the ordinary course of business so long as such Liens attach only to Inventory, securing liabilities in the aggregate amount not to exceed [***] Dollars (\$[***]) and which are not delinquent or remain payable without penalty or which are being contested in good faith and by appropriate proceedings which proceedings have the effect of preventing the forfeiture or sale of the property subject thereto;

(e) Liens to secure payment of workers’ compensation, employment insurance, old-age pensions, social security and other like obligations incurred in the ordinary course of business (other than Liens imposed by ERISA);

(f) Liens incurred in the extension, renewal or refinancing of the Indebtedness secured by Liens described in (a) through (c), but any extension, renewal or replacement Lien must be limited to the property encumbered by the existing Lien and the principal amount of the indebtedness may not increase;

(g) leases or subleases of real property granted in the ordinary course of Borrower's business (or, if referring to another Person, in the ordinary course of such Person's business), and leases, subleases, non-exclusive licenses or sublicenses of personal property (other than Intellectual Property) granted in the ordinary course of Borrower's business (or, if referring to another Person, in the ordinary course of such Person's business), if the leases, subleases, licenses and sublicenses do not prohibit granting Bank a security interest therein;

(h) non-exclusive licenses of Intellectual Property granted to third parties in the ordinary course of business, and licenses of Intellectual Property that could not result in a legal transfer of title of the licensed property that may be exclusive in respects other than territory and that may be exclusive as to territory only as to discreet geographical areas outside of the United States;

(i) Liens relating to Indebtedness incurred under clause (f) of "Permitted Indebtedness";

(j) Liens arising from attachments or judgments, orders, or decrees in circumstances not constituting an Event of Default under Sections 8.4 and 8.7; and

(k) Liens in favor of other financial institutions arising in connection with Borrower's deposit and/or securities accounts held at such institutions, provided that (i) Bank has a first priority perfected security interest in the amounts held in such deposit and/or securities accounts (other than Liens securing customary fees and expenses of the depository or investment subsidiary) and (ii) such accounts are permitted to be maintained pursuant to Section 6.8 of this Agreement.

" **Permitted Priority Liens** " means Liens (i) described in subsection (c) of Permitted Liens, (ii) described in subsection (d) of Permitted Liens to the extent Bank does not require a landlord, warehouseman, and/or bailee waiver from such carriers, warehousemen, suppliers, or other Persons, (iii) described in subsection (j) of Permitted Liens, and (iv) in favor of other financial institutions arising in connection with Borrower's deposit and/or securities accounts held at such institutions to the extent Bank does not require a Control Agreement for such deposit and/or securities accounts or to the extent permitted by the applicable Control Agreement.

" **Person** " is any individual, sole proprietorship, partnership, limited liability company, joint venture, company, trust, unincorporated organization, association, corporation, institution, public benefit corporation, firm, joint stock company, estate, entity or government agency.

" **Pound Sterling** " and the sign " £ " each mean the lawful currency for the time being of the United Kingdom.

" **Prime Rate** " is the rate of interest per annum from time to time published in the money rates section of The Wall Street Journal or any successor publication thereto as the "prime rate" then in effect; provided that, in the event such rate of interest is less than zero, such rate shall be deemed to be zero for purposes of this Agreement; and provided further that if such rate of interest, as set forth from time to time in the money rates section of The Wall Street Journal, becomes unavailable for any reason as determined by Bank, the "Prime Rate" shall mean the rate of interest per annum announced by Bank as its prime rate in effect at its principal office in the State of California (such Bank announced Prime Rate not being intended to be the lowest rate of interest charged by Bank in connection with extensions of credit to debtors); provided that, in the event such rate of interest is less than zero, such rate shall be deemed to be zero for purposes of this Agreement.

" **Prime Rate Advance** " means an Advance that bears interest based at the Prime Rate.

" **Prime Rate Margin** " is (a) if the Adjusted Quick Ratio is at least [***], one-half of one percent (0.50%), (b) if the Adjusted Quick Ratio is at least [***] but less than [***], one percent (1.00%), and (c) if the Adjusted Quick Ratio is less than [***], one and one-half of one percent (1.50%).

“ **Quick Assets** ” is, on any date, Borrower’s unrestricted and unencumbered cash and Cash Equivalents maintained with Bank or Bank’s Affiliates or held in accounts subject to Control Agreements as permitted hereunder, plus net billed accounts receivable.

“ **Registered Organization** ” is any “registered organization” as defined in the Code with such additions to such term as may hereafter be made.

“ **Regulatory Change** ” means, with respect to Bank, any change on or after the date of this Agreement in United States federal, state, or foreign laws or regulations, including Regulation D, or the adoption or making on or after such date of any interpretations, directives, or requests applying to a class of lenders including Bank, of or under any United States federal or state, or any foreign laws or regulations (whether or not having the force of law) by any court or governmental or monetary authority charged with the interpretation or administration thereof.

“ **Requirement of Law** ” is as to any Person, the organizational or governing documents of such Person, and any law (statutory or common), treaty, rule or regulation or determination of an arbitrator or a court or other Governmental Authority, in each case applicable to or binding upon such Person or any of its property or to which such Person or any of its property is subject.

“ **Reserve Requirement** ” means, for any Interest Period, the average maximum rate at which reserves (including any marginal, supplemental, or emergency reserves) are required to be maintained during such Interest Period under Regulation D against “Eurocurrency liabilities” (as such term is used in Regulation D) by member banks of the Federal Reserve System. Without limiting the effect of the foregoing, the Reserve Requirement shall reflect any other reserves required to be maintained by Bank by reason of any Regulatory Change against (a) any category of liabilities which includes deposits by reference to which the LIBOR Rate is to be determined as provided in the definition of LIBOR or (b) any category of extensions of credit or other assets which include Advances.

“ **Reserves** ” means, as of any date of determination, such amounts as Bank may from time to time establish and revise in its good faith business judgment, reducing the amount of Advances and other financial accommodations which would otherwise be available to Borrower (a) to reflect events, conditions, contingencies or risks which, as determined by Bank in its good faith business judgment, do or may adversely affect (i) the Collateral or any other property which is security for the Obligations or its value (including without limitation any increase in delinquencies of Accounts), (ii) the assets, business or prospects of Borrower or any Guarantor, or (iii) the security interests and other rights of Bank in the Collateral (including the enforceability, perfection and priority thereof); or (b) to reflect Bank’s reasonable belief that any collateral report or financial information furnished by or on behalf of Borrower or any Guarantor to Bank is or may have been incomplete, inaccurate or misleading in any material respect; or (c) in respect of any state of facts which Bank determines constitutes an Event of Default or may, with notice or passage of time or both, constitute an Event of Default.

“ **Responsible Officer** ” is any of the Chief Executive Officer, President and Chief Financial Officer (including interim) of Borrower.

“ **Restricted License** ” is any material license or other material agreement with respect to which Borrower is the licensee (a) that prohibits or otherwise restricts Borrower from granting a security interest in Borrower’s interest in such license or agreement or any other property, or (b) for which a default under or termination of could interfere with Bank’s right to sell any Collateral.

“ **Revolving Line** ” is an aggregate principal amount equal to Thirty Million Dollars (\$30,000,000).

“ **Revolving Line Maturity Date** ” is August 7, 2019.

“ **RUS** ” is the Rural Utilities Service of the United States Department of Agriculture.

“ **RUS Accounts** ” are Accounts owed by an Account Debtor to Borrower with respect to which the Account Debtor receives funding from the RUS.

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“**SEC**” shall mean the Securities and Exchange Commission, any successor thereto, and any analogous Governmental Authority.

“**Secured Guarantor**” is any Guarantor who has (a) executed and delivered to Bank a Guaranty in form and substance satisfactory to Bank pursuant to which such Guarantor has granted Bank a first priority perfected Lien in the types of assets substantially similar to the Collateral to secure the Obligations; (b) delivered to Bank such appropriate Control Agreements in form and substance satisfactory to Bank if and to the extent required under Section 6.8(b); and (c) provided to Bank all other documentation in form and substance satisfactory to Bank in its discretion which in its opinion is appropriate with respect to the execution and delivery of the applicable documentation referred to above and which Bank has requested.

“**Securities Account**” is any “**securities account**” as defined in the Code with such additions to such term as may hereafter be made.

“**Specified Affiliate**” is any Person (a) more than ten percent (10.0%) of whose aggregate issued and outstanding equity or ownership securities or interests, voting, non-voting or both, are owned or held directly or indirectly, beneficially or of record, by Borrower, and/or (ii) whose equity or ownership securities or interests representing more than ten percent (10.0%) of such Person’s total outstanding combined voting power are owned or held directly or indirectly, beneficially or of record, by Borrower.

“**Stock Pledge Agreement**” is, individually and collectively, those certain Stock Pledge Agreements, dated as of the Effective Date, from Borrower for the benefit of Bank.

“**Streamline Period**” is, on and after the Effective Date, provided no Event of Default has occurred and is continuing, the period (a) commencing on the first day of the month following the day that Borrower provides to Bank a written report that Borrower has, at all times in the immediately preceding month, as determined by Bank in its sole but reasonable discretion, maintained the Streamline Ratio; and (b) terminating on the earlier to occur of (i) the occurrence of an Event of Default, and (ii) the first day thereafter in which Borrower fails to maintain the Streamline Ratio, as determined by Bank in its sole but reasonable discretion. Upon the termination of a Streamline Period, Borrower must maintain the Streamline Ratio each consecutive day for one (1) fiscal quarter as determined by Bank in its sole but reasonable discretion, prior to entering into a subsequent Streamline Period. Borrower shall give Bank prior written notice of Borrower’s election to enter into any such Streamline Period, and each such Streamline Period shall commence on the first day of the monthly period following the date Bank determines, in its sole but reasonable discretion, that the Streamline Ratio has been achieved.

“**Streamline Ratio**” is an Adjusted Quick Ratio of at least (a) [***] from the Effective Date through December 31, 2017, and (b) [***] from January 1, 2018 and at all times thereafter.

“**Subordinated Debt**” is indebtedness incurred by Borrower subordinated to all of Borrower’s now or hereafter indebtedness to Bank (pursuant to a subordination, intercreditor, or other similar agreement in form and substance satisfactory to Bank entered into between Bank and the other creditor), on terms reasonably acceptable to Bank.

“**Subsidiary**” is, as to any Person, a corporation, partnership, limited liability company or other entity of which shares of stock or other ownership interests having ordinary voting power (other than stock or such other ownership interests having such power only by reason of the happening of a contingency) to elect a majority of the board of directors or other managers of such corporation, partnership or other entity are at the time owned, or the management of which is otherwise controlled, directly or indirectly through one or more intermediaries, or both, by such Person. Unless the context otherwise requires, each reference to a Subsidiary herein shall be a reference to a Subsidiary of Borrower.

“**Target**” is defined in Section 7.3.

“**Termination Fee**” is defined in Section 2.6(d).

“ **Trademarks** ” means any trademark and servicemark rights, whether registered or not, applications to register and registrations of the same and like protections, and the entire goodwill of the business of Borrower connected with and symbolized by such trademarks.

“ **Transfer** ” is defined in Section 7.1.

“ **Unused Revolving Line Facility Fee** ” is defined in Section 2.6(d).

“ **Unused Revolving Line Margin** ” is (a) if the Adjusted Quick Ratio is at least [***], one-quarter of one percent (0.25%), and (b) if the Adjusted Quick Ratio is less than [***], three-eighths of one percent (0.375%).

[Signature page follows.]

[***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission
Confidential treatment has been requested with respect to portions of this agreement.

IN WITNESS WHEREOF , the parties hereto have caused this Agreement to be executed as of the Effective Date.

BORROWER:

CALIX, INC.

By: /s/ Cory Sindelar

Name: Cory Sindelar

Title: Interim Chief Financial Officer

BANK:

SILICON VALLEY BANK

By: /s/ Tim Giebink

Name: Tim Giebink

Title: Vice President

[Signature Page to Loan and Security Agreement]

<p>*** Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission Confidential treatment has been requested with respect to portions of this agreement.</p>
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EXHIBIT A - COLLATERAL DESCRIPTION

The Collateral consists of all of Borrower's right, title and interest in and to the following personal property:

All goods, Accounts (including health-care receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles, Intellectual Property, commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts, certificates of deposit, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located; and

All Borrower's Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds and insurance proceeds of any or all of the foregoing.

Notwithstanding the foregoing, the Collateral does not include any of the following: (a) with respect to stock in Foreign Subsidiaries, more than sixty-five percent (65.0%) of the presently existing and hereafter arising issued and outstanding shares of capital stock owned by Borrower of any Foreign Subsidiary which shares entitle the holder thereof to vote for directors or any other matter, (b) rights held under an inbound license in which Borrower is the licensee to the extent that such rights are not assignable by their terms without the consent of the licensor thereof (but only to the extent such restriction on assignment is enforceable under applicable law); (c) any interest of Borrower as a lessee or sublessee under a real property lease or an Equipment lease if Borrower is prohibited by the terms of such lease from granting a security interest in such lease or under which such an assignment or Lien would cause a default to occur under such lease (but only to the extent that such prohibition is enforceable under all applicable laws including, without limitation, the Code); provided, however, that upon termination of such prohibition, such interest shall immediately become Collateral without any action by Borrower or Bank; or (d) any intent-to use Trademark applications prior to the filing of a "Statement of Use", "Amendment to Allege Use" or similar filing with regard thereto, to the extent and solely during the period, in which the grant of a security interest therein may impair the validity or enforceability of any Trademark that may issue from such intent to use Trademark application under applicable law.

A-1

<p>***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission Confidential treatment has been requested with respect to portions of this agreement.</p>

EXHIBIT B
COMPLIANCE CERTIFICATE

TO: SILICON VALLEY BANK
FROM: CALIX, INC.

Date: _____

The undersigned authorized officer of CALIX, INC. (“**Borrower**”) certifies, solely in his or her capacity as an officer of Borrower and not in his or her individual capacity, that under the terms and conditions of the Loan and Security Agreement between Borrower and Bank (the “**Agreement**”), (1) Borrower is in complete compliance for the period ending _____ with all required covenants except as noted below, (2) there are no Events of Default, (3) all representations and warranties in the Agreement are true and correct in all material respects on this date except as noted below; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date, (4) Borrower, and each of its Subsidiaries, has timely filed all required tax returns and reports, and Borrower has timely paid all foreign, federal, state and local taxes, assessments, deposits and contributions owed by Borrower except as otherwise permitted pursuant to the terms of Section 5.9 of the Agreement, and (5) no Liens have been levied or claims made against Borrower or any of its Subsidiaries, if any, relating to unpaid employee payroll or benefits of which Borrower has not previously provided written notification to Bank. Attached are the required documents supporting the certification. The undersigned certifies that these are prepared in accordance with GAAP consistently applied from one period to the next except as explained in an accompanying letter or footnotes. The undersigned acknowledges that no borrowings may be requested at any time or date of determination that Borrower is not in compliance with any of the terms of the Agreement, and that compliance is determined not just at the date this certificate is delivered. Capitalized terms used but not otherwise defined herein shall have the meanings given them in the Agreement.

Please indicate compliance status by circling Yes/No under “Complies” column.

<u>Reporting Covenants</u>	<u>Required</u>	<u>Complies</u>
Monthly financial statements with Compliance Certificate	Monthly within 30 days	Yes No
Annual financial statements (CPA Audited)	Earlier of 120 days of FYE, or 10-K filing date	Yes No
Quarterly financial statements	Earlier of 90 days of FQE, or 10-Q filing date	Yes No
10-Q, 10-K and 8-K	Within 5 days after filing with SEC	Yes No
A/R & A/P Agings	Monthly within 30 days	Yes No
Deferred Revenue Report	Monthly within 30 days	Yes No
Detailed Debtor Listing	Monthly within 30 days	Yes No
Borrowing Base Reports	If Streamline Period in effect, monthly within 30 days; if Streamline Period not in effect, Friday of each week	Yes No
Board approved projections	Within later of 60 days of Board approval or FYE, and as within 10 days of any amendment/update	Yes No
The following Intellectual Property was registered after the Effective Date or after the last delivery date of a Compliance Certificate (if no registrations, state “None”)		

<u>Financial Covenant</u>	<u>Required</u>	<u>Actual</u>	<u>Complies</u>
Maintain as indicated (tested monthly):			
Adjusted Quick Ratio	See attached schedule	See attached schedule	Yes No

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Performance Pricing		
	Interest Rate	Applies
AQR \geq [***]	LIBOR + 2.00% or Prime + 0.50%	Yes No
AQR \geq [***] and $<$ [***]	LIBOR + 2.50% or Prime + 1.00	Yes No
AQR $<$ [***]	LIBOR + 3.00% or Prime + 1.50%	Yes No

	Unused Line Fee	Applies
AQR \geq [***]	0.25%	Yes No
AQR $<$ [***]	0.375%	Yes No

Streamline Period		Applies
(i) AQR \geq [***] from the Effective Date through December 31, 2017, or (ii) AQR \geq [***] from January 1, 2018 and at all times thereafter	Yes	Yes No
(i) AQR $<$ [***] from the Effective Date through December 31, 2017, or (ii) AQR $<$ [***] from January 1, 2018 and at all times thereafter	No	Yes No

The following financial covenant analyses and information set forth in Schedule 1 attached hereto are true and accurate as of the date of this Certificate.

The following are the exceptions with respect to the certification above: (If no exceptions exist, state "No exceptions to note.")

Attached are copies of all correspondence, reports, documents and other filings with any Governmental Authority regarding compliance with or maintenance of Governmental Approvals or Requirements of Law or that could reasonably be expected to have a material effect on any of the Governmental Approvals or otherwise on the operations of Borrower or any of its Subsidiaries.

CALIX, INC.

By: _____
 Name: _____
 Title: _____

BANK USE ONLY

Received by: _____
 AUTHORIZED SIGNER

Date: _____

Verified: _____
 AUTHORIZED SIGNER

Date: _____

Compliance Status: Yes No

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Schedule 1 to Compliance Certificate

Financial Covenants of Borrower

In the event of a conflict between this Schedule and the Loan Agreement, the terms of the Loan Agreement shall govern.

Dated: _____

I. Adjusted Quick Ratio (Section 6.9(a))

Required: Maintain at all times, subject to periodic reporting as of the last day of each fiscal month of Borrower, unless otherwise noted, on a consolidated basis with respect to Borrower, an Adjusted Quick Ratio as set forth below:

<u>Fiscal Months</u>	<u>Adjusted Quick Ratio</u>
June 2017 through September 2017	At least [***]
October 2017 through December 2017	At least [***]
January 2018 through March 2018	At least [***]
April 2018 through June 2018	At least [***]
July 2018 and each month thereafter	At least [***]

Actual:

A. Aggregate value of the unrestricted and unencumbered cash and Cash Equivalents of Borrower at Bank and Bank's Affiliates	\$ _____
B. Aggregate value of net billed accounts receivable of Borrower	\$ _____
C. Quick Assets (the sum of lines A and B)	\$ _____
D. Aggregate value of liabilities of Borrower on its consolidated balance sheet including all Indebtedness and current portion of Subordinated Debt permitted by Bank to be paid by Borrower (but excluding (i) all other Subordinated Debt, (ii) Obligations to Bank, and (iii) any Indebtedness that is cash secured or is otherwise collateralized pursuant to terms acceptable to Bank in its sole discretion), that matures within one (1) year	\$ _____
E. Aggregate value of Obligations to Bank	\$ _____
F. The sum of lines D and E	\$ _____
G. Aggregate value of the current portion of all amounts received or invoiced by Borrower in advance of performance under contracts and not yet recognized as revenue	\$ _____
H. Line F minus line G	\$ _____
I. Adjusted Quick Ratio (line C divided by line H)	_____:1.00

Is line I at least the required amount for such month?

_____ No, not in compliance ___ Yes, in compliance

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EXHIBIT C

FORM OF NOTICE OF BORROWING

CALIX, INC.

Date: _____

To: Silicon Valley Bank
3003 Tasman Drive
Santa Clara, CA 95054
Attention: IMX Production
Email: imxproduction@svb.com

and

Stephen Chang, Vice President
555 Mission Street, Suite 900
San Francisco, California 94105
Email: schang@svb.com

RE: Loan and Security Agreement dated as of August 7, 2017 (as amended, modified, supplemented or restated from time to time, the “**Loan Agreement**”), by and between CALIX, INC., a Delaware corporation (“**Borrower**”), and SILICON VALLEY BANK, a California corporation (“**Bank**”)

Ladies and Gentlemen:

The undersigned refers to the Loan Agreement, the terms defined therein and used herein as so defined, and hereby gives you notice irrevocably, pursuant to Section 3.4 of the Loan Agreement, of the borrowing of an Advance.

1. The Funding Date, which shall be a Business Day, of the requested borrowing is _____.
2. The aggregate amount of the requested Advance is \$_____.
3. The requested Advance shall consist of \$_____ of Prime Rate Advances and \$_____ of LIBOR Advances, provided that LIBOR Advances may only be requested when a Streamline Period is in effect.
4. The duration of the Interest Period for the LIBOR Advances included in the requested Advance shall be _____ months.

The undersigned hereby certifies that the following statements are true on the date hereof, and will be true on the date of the proposed Advance before and after giving effect thereto, and to the application of the proceeds therefrom, as applicable:

(a) all representations and warranties of Borrower contained in the Loan Agreement are true, accurate and complete in all material respects as of the date hereof; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date;

(b) no Event of Default has occurred and is continuing, or would result from such proposed Advance; and

C-1

***] Certain information in this document has been omitted and filed separately with the Securities and Exchange Commission Confidential treatment has been requested with respect to portions of this agreement.
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(c) the requested Advance will not cause the aggregate principal amount of the outstanding Advances to exceed, as of the designated Funding Date, the Availability Amount.

BORROWER

CALIX, INC.

By: _____

Name: _____

Title: _____

For internal Bank use only

LIBOR Pricing Date	LIBOR	LIBOR Variance	Maturity Date
		____%	

C-2

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EXHIBIT D

FORM OF NOTICE OF CONVERSION/CONTINUATION

CALIX, INC.

Date:

To: Silicon Valley Bank
3003 Tasman Drive
Santa Clara, CA 95054
Attention: IMX Production
Email: imxproduction@svb.com

and

Stephen Chang, Vice President
555 Mission Street, Suite 900
San Francisco, California 94105
Email: schang@svb.com

RE: Loan and Security Agreement dated as of August 7, 2017 (as amended, modified, supplemented or restated from time to time, the “**Loan Agreement**”), by and between CALIX, INC., a Delaware corporation (“**Borrower**”), and SILICON VALLEY BANK, a California corporation (“**Bank**”)

Ladies and Gentlemen:

The undersigned refers to the Loan Agreement, the terms defined therein being used herein as therein defined, and hereby gives you notice irrevocably, pursuant to Section 3.5 of the Loan Agreement, of the [conversion] [continuation] of the Advances specified herein, that:

1. The date of the [conversion] [continuation] is _____, 20__.
2. The aggregate amount of the proposed Advances to be [converted] is

\$ _____ or [continued] is \$ _____.

3. The Advances are to be [converted into] [continued as] [LIBOR] [Prime Rate] Advances, provided Advances may only be converted into or continued as LIBOR Advances when a Streamline Period is in effect.

4. The duration of the Interest Period for the LIBOR Advances included in the [conversion] [continuation] shall be _____ months.

The undersigned, on behalf of Borrower, hereby certifies that the following statements are true on the date hereof, and will be true on the date of the proposed [conversion] [continuation], before and after giving effect thereto and to the application of the proceeds therefrom:

(a) all representations and warranties of Borrower stated in the Loan Agreement are true, accurate and complete in all material respects as of the date hereof; provided, however, that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof; and provided, further that those representations and warranties expressly referring to a specific date shall be true, accurate and complete in all material respects as of such date;

D-1

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--

(b) no Event of Default has occurred and is continuing, or would result from such proposed [conversion] [continuation]; and

(c) the requested [conversion] [continuation] will not cause the aggregate principal amount of the outstanding Advances to exceed, as of the designated Funding Date, (i) the lesser of (A) the Revolving Line or (B) the Borrowing Base minus (ii) the amount of all outstanding Letters of Credit (including drawn but unreimbursed Letters of Credit and any Letter of Credit Reserve), and minus (iii) the aggregate outstanding principal amount of any Advances.

BORROWER CALIX, INC.

By: _____

Name: _____

Title: _____

For internal Bank use only

LIBOR Pricing Date	LIBOR	LIBOR Variance	Maturity Date
		____%	

D-2

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September 28, 2017

Cory Sindelar

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Dear Cory,

On behalf of Calix, Inc. (the "Company"), I am pleased to present you with this formal offer of employment for the full-time, exempt position of **Chief Financial Officer (CFO)** of the Company.

The terms of your position with the Company are as set forth below:

1. **Employment Period.** The period during which you are employed by the Company pursuant to this letter agreement shall constitute the "Employment Period" hereunder. Subject to fulfillment of any conditions imposed by this letter agreement, your commencement of employment hereunder shall be **OCTOBER 1, 2017** (the date you commence employment with the Company, the "Employment Commencement Date").

2. **Position and Responsibilities.**

(a) During the Employment Period, you shall serve as the **Chief Financial Officer (CFO)** of the Company, initially working out of the Company's office in **San Jose**. You shall report to the **President and Chief Executive Officer of the Company (the "CEO")**. You agree to perform in good faith and to the best of your ability all services that may be required of you hereunder or assigned by the CEO or the Board of Directors of the Company (the "Board") and to be available to render such services at all reasonable times and places in accordance with such directions and requests as may be made from time to time by the CEO or the Board.

(b) During the Employment Period, you are expected and agree to devote your full working time and attention to the business of the Company, and will not render services to any other business without the prior approval of the CEO or, directly or indirectly, engage or participate in any business that is competitive in any manner with the business of the Company. You agree that, prior to the Employment Commencement Date, you will resign, step down, or cease to provide service to any other business, job, charitable and civic activity, or consulting activity, other than incidental activities undertaken on behalf of these entities and activities undertaken on behalf of the Company related to these entities that are disclosed to the Company. Notwithstanding the foregoing, however, you shall be permitted to continue to serve on the boards of directors of the companies set forth on Attachment A hereto; provided, however, that you will devote only such time to those companies as is required to properly discharge your fiduciary duties thereto and you shall, as situations allow, make a good faith effort to resign from such boards as soon as practicable. Nothing in this letter agreement will prevent you from accepting speaking or presentation engagements in exchange for honoraria or from serving on boards of charitable organizations, from owning no more than 1% of the outstanding equity securities of a corporation whose stock is listed on a national stock exchange, or from investing in investments listed on Attachment A1.

(c) You also understand and agree that you must fully comply with the Company's standard operating policies, procedures, and practices that are from time to time in effect during the Employment Period.

3. **Compensation.**

(a) **Base Salary.** During the Employment Period, your annual gross base salary (as may be adjusted from time to time, the "Base Salary") will be **\$320,000.00 USD**, to be paid in accordance with the Company's normal payroll procedures, less all applicable withholdings and deductions. Your Base Salary will be reviewed periodically by the Board's Compensation Committee and may be adjusted in connection with such review.

(b) **Performance Bonus/Variable Compensation.** You shall be eligible to receive variable compensation for 2017 targeted at **60%** of the Base Salary earned by you in 2017 (the "Variable Compensation"). Variable Compensation shall be based on the achievement of the performance objectives and funding requirements as established under the Company's Executive Cash Bonus Plan, attached as Attachment B. Based on your start-date with the Company, your Variable Compensation will be based on second half performance period (Q4 2017) in accordance with the terms and conditions of the Company's Executive Cash Bonus Plan.

(c) **Inducement Award Stock Option Grant.** The Company will grant you an option to purchase 300,000 shares of the Company's Common Stock (the "Option"). You acknowledge and agree that the Option is the result of negotiations between you and the Company and constitutes a material inducement for you to commence employment with the Company. The Option will be governed in all respects by an option agreement (the "Option Agreement") to be entered into between you and the Company and shall have terms and conditions consistent with the Company's 2010 Equity Incentive Award Plan (the "Plan") and the Company's standard form of stock option agreement. The Option will have an exercise price per share equal to the closing trading price of the Company's Common Stock on the date of grant. The Option will vest and become exercisable over four years from your Employment Commencement Date, with 25% of the shares initially underlying the Option vesting and becoming exercisable on the one-year anniversary of the Employment Commencement Date, and the remainder of the shares underlying the Option vesting and becoming exercisable quarterly thereafter in substantially equal installments over the next 36 months. Vesting shall cease upon your last day of active employment with the Company. The remaining terms of the Option will be in accordance with the Option Agreement.

(d) **Withholding.** The Company shall deduct and withhold from any compensation payable to you any and all applicable federal, state, local, and foreign income and employment withholding taxes and any other amounts required to be deducted or withheld by the Company under applicable statutes, regulations, ordinances, or orders governing or requiring the withholding or deduction of amounts otherwise payable as compensation or wages.

4. **Change in Control and Severance Plan.** During the Employment Period, you will be eligible to participate in the Calix, Inc. Amended and Restated Executive Change in Control and Severance Plan ("CICSP"). A copy of the CICSP is attached as Attachment C.

5. **Benefits; Reimbursement.**

(a) **Benefit Plans.** During the Employment Period, you shall be eligible to participate in all employee benefits and benefit plans generally made available to the Company's employees from time-to-time, including, but not limited to, medical, dental, vision and long-term disability insurance benefits and arrangements, subject to the terms, conditions, and relevant qualification criteria for such benefits and benefit plans. The Company, in its discretion, may change from time-to-time the employee benefits and benefit plans it generally makes available to its employees.

(b) **Vacation, Sick, and Holiday Pay.** You shall be entitled to vacation, sick, and holiday pay pursuant to the terms of the Company's generally applicable employee policies, as may exist from time to time. You shall be entitled to twenty paid vacation days per year equivalent to that provided to other executive-level employees of the Company.

6. **Proof of Right to Work.** As a condition of employment, you must provide the Company, within three days after your Employment Commencement Date, with proof of employment eligibility. Such proof is required for the completion of the Form I-9 (Employment Eligibility Verification).

7. **Confidential Information and Invention Assignment Agreement.** As a condition of employment and the benefits provided by this letter agreement, you are required to timely execute and return the Company's Confidential Information and Invention Assignment Agreement in the form attached hereto as Attachment D (the "Confidentiality Agreement"). You shall at all times remain subject to the terms and conditions of such Confidentiality Agreement, and, except as provided in this Section 7, nothing in this letter agreement shall supersede, modify, or affect your obligations, duties, and responsibilities thereunder. For the avoidance of doubt and notwithstanding anything herein to the contrary, nothing in this letter agreement or the Confidentiality Agreement will be construed to prohibit you from filing a charge with, reporting possible violations to, or participating or cooperating with any governmental agency or entity, including but not limited to the EEOC, the Department of Justice, the Securities and Exchange Commission, Congress, or any agency Inspector General, or making other disclosures that are protected under the whistleblower, anti-discrimination, or anti-retaliation provisions of federal, state or local law or regulation. You do not need the prior authorization of the Company to make any such reports or disclosures, and you are not required to notify the Company that you have made such reports or disclosures.

8. **Termination of Employment.**

Upon cessation of your employment for any reason, you, or your estate if applicable, shall be paid any unpaid Base Salary earned under Paragraph 3a for services rendered through the date of such termination and any other amounts required by applicable law and you will be reimbursed for any business expenses incurred in accordance with the Company's policies subject to your timely submission of documentation of such expenses in accordance with the Company's policies.

9. **No Conflicts.** You understand and agree that by accepting this offer of employment, you represent to the Company that your performance will not breach any other agreement to which you are a party and that you have not, and will not during the term of your employment with the Company, enter into any oral or written agreement in conflict with any of the provisions of this letter agreement or the Company's policies. You will not use or disclose to any person associated with the Company, any confidential or proprietary information belonging to any former employer or other third party with respect to which you owe an obligation of confidentiality under any agreement or otherwise. The Company does not need and will not use such information and we will assist you in any way possible to preserve and protect the confidentiality of proprietary information belonging to third parties. We also expect you to abide by any obligations to refrain from soliciting any person employed by or otherwise associated with any former employer and suggest that you refrain from having any contact with such persons until such time as any non-solicitation obligation expires.

10. **At-Will Employment.** Your employment with the Company will be on an “at-will” basis, meaning that: (i) either you or the Company may terminate your employment at any time, with or without cause or advance notice, without further obligation or liability other than as expressly set forth in this letter agreement or the CICSP, (ii) the Company reserves the right to modify or amend the terms of your employment at any time at its sole discretion with reasonable advance notice, subject to the provisions of this letter agreement, and (iii) this policy of at-will employment shall reflect the entire agreement and may only be modified in an express written agreement signed by the CEO.

11. **Equal Opportunity/Affirmative Action.** As an employee, you will be expected to create, collaborate, and communicate in accordance with the Company’s principles. For compliance with United States law, the Company is an equal opportunity employer that does not permit, and will not tolerate, the unlawful discrimination or harassment of any employees, consultants, or third parties on the basis of sex, race, color, religion, age, national origin or ancestry, marital status, veteran status, mental or physical disability or medical condition, sexual orientation, gender identity, gender expression, pregnancy, childbirth or related medical condition, or any other status protected by law. Any questions regarding these policies should be directed to the Company’s Talent and Culture personnel.

12. **Disability Accommodation.** The Company does not discriminate against disabled applicants who are otherwise qualified and able to perform the essential functions of a particular position. If you are an individual with a disability and require reasonable accommodation in order to perform the essential functions of your position, please contact Diane Prins Sheldahl, Senior Vice President, Talent and Culture. If the accommodation can be accomplished without creating an undue hardship, the Company will be happy to cooperate in making this accommodation.

13. **Cessation of Benefits.** In the event of a breach by you of any of your obligations of this letter agreement or under the Confidentiality Agreement, you shall cease to be entitled to any further benefits under this letter agreement.

14. **Successors and Assigns.** This letter agreement and all rights hereunder are personal to you and may not be transferred or assigned by you at any time. The Company may assign its rights, together with its obligations hereunder, to any parent, subsidiary, affiliate, or successor, or in connection with any sale, transfer, or other disposition of all or substantially all of its business and assets, provided, however, that any such assignee assumes the Company’s obligations hereunder.

15. **Notices.**

(a) Any and all notices, demands, or other communications required or desired to be given hereunder by any party shall be in writing and shall be validly given or made to another party if delivered either personally or if deposited in the United States mail, certified or registered, postage prepaid, return receipt requested. If such notice, demand, or other communication shall be delivered personally, then such notice shall be conclusively deemed given at the time of such personal delivery.

(b) If such notice, demand or other communication is given by mail, such notice shall be conclusively deemed given 48 hours after deposit in the United States mail addressed to the party to whom such notice, demand, or other communication is to be given as hereinafter set forth:

To the Company:

Calix, Inc.
1035 N. McDowell Blvd.
Petaluma, CA 94954
Attn: Carl Russo, President and Chief Executive Officer

To You:

Cory Sindelar

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(c) Any party hereto may change its address for the purpose of receiving notices, demands, and other communications as herein provided by a written notice given in the manner aforesaid to the other party hereto.

16. **Governing Documents.** This letter agreement, collectively with (i) the Option Agreement and (ii) all agreements attached hereto or referenced herein, shall constitute the entire agreement and understanding of the Company and you with respect to the terms and conditions of your employment with the Company and the eligibility for any potential severance payments following separation from employment with the Company, and this letter agreement shall supersede all prior and contemporaneous written or verbal agreements and understandings between you and the Company relating to such subject matter. For the avoidance of doubt, that certain Consulting Agreement entered into between you and the Company effective as of May 31, 2017 shall be deemed terminated and of no further effect as of the Employment Commencement Date. This letter agreement may only be amended by written instrument signed by you and myself, the CEO.

17. **Governing Law.** The provisions of this letter agreement shall be construed and interpreted under the laws of the State of California applicable to agreements executed and wholly performed within the State of California. If any provision of this letter agreement as applied to any party or to any circumstance should be adjudged by an arbitrator or, if applicable, a court of competent jurisdiction to be void or unenforceable for any reason, the invalidity of that provision shall in no way affect (to the maximum extent permissible by law) the application of such provision under circumstances different from those adjudicated by the arbitrator or court, the application of any other provision of this letter agreement, or the enforceability or invalidity of this letter agreement as a whole. Should any provision of this letter agreement become or be deemed invalid, illegal, or unenforceable in any jurisdiction by reason of the scope, extent, or duration of its coverage, then such provision shall be deemed amended to the extent necessary to conform to applicable law so as to be valid and enforceable or, if such provision cannot be so amended without materially altering the intention of the parties, then such provision will be stricken, and the remainder of this letter agreement shall continue in full force and effect.

18. **Arbitration.** You will be subject to the arbitration requirements in this Paragraph 18.

(a) Except as provided herein, each party hereto agrees that any and all disputes which arise out of or relate to your employment, the termination of your employment, or the terms of this letter agreement shall be resolved through final and binding arbitration. **Such arbitration shall be in lieu of any trial before a judge and/or jury, and you and the Company expressly waive all rights to have such disputes resolved via trial before a judge and/or jury.** Such disputes shall include, without limitation, claims for breach of contract or of the covenant of good faith and fair dealing, claims of discrimination, claims under any federal, state or local law or regulation now in existence or hereinafter enacted and as amended from time to time concerning in any way your employment with the Company or its termination. The only claims not covered by this letter agreement to arbitrate disputes, which shall instead be resolved pursuant to applicable law, are: (i) claims for benefits under the unemployment insurance benefits; (ii) claims for workers' compensation benefits under any of the Company's workers' compensation insurance policy or fund; (iii) claims under the National Labor Relations Act; and (iv) claims that may not be arbitrated as a matter of law.

(b) Arbitration will be conducted in San Francisco, California. Arbitration shall be conducted in accordance with the Federal Arbitration Act ("FAA") and the National Rules for the Resolution of Employment Disputes of the American Arbitration Association ("AAA Rules" available at www.adr.org), provided, however, that the arbitrator shall allow the discovery authorized by California Code of Civil Procedure section 1282, et seq., or any other discovery required by applicable law in arbitration proceedings, including, but not limited to, discovery available under the applicable state and/or federal arbitration statutes. Also, to the extent that any of the AAA Rules or anything in this arbitration section conflicts with any arbitration procedures required by applicable law, the arbitration procedures required by applicable law shall govern.

(c) During the course of arbitration, the Company will bear the cost of (i) the arbitrator's fee, and (ii) any other expense or cost you would not be required to bear if you were free to bring the dispute or claim in court. Each party shall bear their own attorneys' fees incurred in connection with the arbitration. The arbitrator will not have authority to award attorneys' fees unless a statute or contract at issue in the dispute authorizes the award of attorneys' fees to the prevailing party. In such case, the arbitrator shall have the authority to make an award of attorneys' fees as required or permitted by the applicable statute or contract.

(d) The arbitrator shall issue a written award that sets forth the essential findings of fact and conclusions of law on which the award is based. The arbitrator shall have the authority to award any relief authorized by law in connection with the asserted claims or disputes. The arbitrator's award shall be subject to correction, confirmation, or vacation, as provided by applicable law setting forth the standard of judicial review of arbitration awards. Judgment upon the arbitrator's award may be entered in any court having jurisdiction thereof.

(e) This arbitration provision does not prohibit you from pursuing an administrative claim with a local, state or federal administrative agency such as the Department of Fair Employment and Housing, the Equal Employment Opportunity Commission, or the California Workers' Compensation Board, but this provision does prohibit you from seeking or pursuing court action regarding any such claim.

19. **Counterparts.** This letter agreement may be executed in more than one counterpart, each of which shall be deemed an original, but all of which together shall constitute but one and the same instrument.

20. **Construction.** The language of this letter agreement shall be construed as to its fair meaning, and not strictly for or against either party. Any rule of construction that any ambiguities in a contract shall be construed against the drafter of a contract shall not apply.

21. **Indemnification.** You will be provided indemnification subject to the terms of any separate written Company indemnification policy.

We are all delighted to be able to extend you this offer and look forward to working with you. To indicate your acceptance of the Company's offer, please sign and date this letter agreement in the space provided below via electronic signature. This letter agreement may not be modified or amended except by a written agreement, signed by the Company and by you.

Very truly yours,

Calix, Inc.

/s/ Carl Russo

Carl Russo
President and Chief Executive Officer

ACCEPTED AND AGREED:

Signature: /s/ Cory Sindelar

Date: September 28, 2017

Attachment A

List of Board Commitments

Attachment A1

List of Private Investments

Attachment B

Calix Executive Cash Incentive Plan

Attachment C

Calix, Inc. Amended and Restated Executive Change in Control and Severance Plan

Attachment D

Confidential Information and Invention Assignment Agreement

CALIX, INC.

NONSTATUTORY INDUCEMENT STOCK OPTION GRANT NOTICE

As an inducement material to the decision by the individual listed below (“Optionee”) to accept employment with Calix, Inc., a Delaware corporation, (the “Company”) and pursuant to that certain offer letter entered into by and between Optionee and the Company, dated as of October 1, 2017, the Company hereby grants to Optionee an option to purchase the number of shares of the Company’s common stock, par value \$0.025 (“Stock”), set forth below (the “Option”). This Option is subject to all of the terms and conditions set forth herein and in the Stock Option Agreement attached hereto as Exhibit A (the “Stock Option Agreement”), which is incorporated herein by reference. The Option is made and granted as a stand-alone award and is not granted under or pursuant to the Calix, Inc. 2010 Equity Incentive Award Plan (the “Plan”). However, unless otherwise defined herein, the terms defined in the Plan shall have the same defined meanings in the Grant Notice and the Stock Option Agreement.

Optionee:	CORY SINDELAR
Grant Date:	10/01/2017
Grant Number:	CF170711
ID:	4565
Effective:	10/01/2017
Exercise Price per Share:	\$5.05
Total Exercise Price:	\$1,515,000.00
Total Number of Shares Subject to the Option:	300,000
Expiration Date:	10/01/2027
Vesting Commencement Date:	10/01/2017

Vesting Schedule: Subject to the terms and conditions of this Grant Notice and the Stock Option Agreement and subject to Optionee’s continued service with the Company or a Subsidiary through the applicable vesting date, the Option shall vest and become exercisable with respect to twenty-five percent (25%) of the shares of Stock subject thereto on the first anniversary of the Vesting Commencement Date set forth above, and the remainder of the shares vesting quarterly thereafter in equal installments over the next 36 months.

Type of Option: Nonstatutory Stock Option

By his signature and the Company’s signature below, Optionee agrees to be bound by the terms and conditions of the Stock Option Agreement and this Grant Notice. Optionee has reviewed the Stock Option Agreement and this Grant Notice in their entirety, has had an opportunity to obtain the advice of counsel prior to executing this Grant Notice and fully understands all provisions of this Grant Notice and the Stock Option Agreement. Participant hereby agrees to accept as binding, conclusive and final all decisions or interpretations of the Administrator upon any questions arising under this Grant Notice or the Stock Option Agreement.

CALIX, INC.:

OPTIONEE:

By:

/s/ Diane Prins Sheldahl

 Diane R. Prins Sheldahl
 SVP, Talent & Culture

/s/ Cory Sindelar

 CORY SINDELAR

**EXHIBIT A
TO NONSTATUTORY INDUCEMENT STOCK OPTION GRANT NOTICE**

CALIX, INC. STOCK OPTION AGREEMENT

Pursuant to the Nonstatutory Inducement 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 Optionee an option (the “Option”) to purchase the number of shares of Stock indicated in the Grant Notice.

ARTICLE 1.

GENERAL

1.1 Non-Plan Grant; Incorporation of Terms of Plan. The Option is made and granted as a stand-alone award, separate and apart from, and outside of, the Calix, Inc. 2010 Equity Incentive Award Plan (the “Plan”), and shall not constitute an award granted under or pursuant to the Plan. Notwithstanding the foregoing, the terms, conditions and definitions set forth in the Plan shall apply to the Option as though the Option had been granted under the Plan (including but not limited to the adjustment provision contained in Section 14.2 of the Plan), and the Option shall be subject to such terms, conditions and definitions, which are hereby incorporated into this Agreement by reference. For the avoidance of doubt, the Option shall not be counted for purposes of calculating the aggregate number of Shares that may be issued or transferred pursuant to Awards under the Plan as set forth in Section 3.1(a) of the Plan. In the event of any inconsistency between the Plan and this Agreement, the terms of this Agreement shall control.

1.2 Employment Inducement Award. The Option is intended to constitute an “employment inducement award” under NYSE Listing Rule 303A.08, and consequently is intended to be exempt from the NYSE rules regarding shareholder approval of equity compensation plan. This Agreement and the terms and conditions of the Option shall be interpreted in accordance and consistent with such exemption.

ARTICLE 2.

GRANT OF OPTION

2.1 Grant of Option. In consideration of Optionee’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 Optionee 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 this Agreement. The Option shall be a Nonstatutory Stock Option.

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.

2.3 Consideration to the Company. In consideration of the grant of the Option by the Company, Optionee agrees to render faithful and efficient services to the Company or any Subsidiary. Nothing in this Agreement shall confer upon Optionee 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 Optionee 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 Optionee.

ARTICLE 3.

PERIOD OF EXERCISABILITY

3.1 Commencement of Exercisability.

(a) Subject to Sections 3.2, 3.3, 5.10 and 5.16 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 Optionee'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 Optionee.

(c) Notwithstanding Sections 3.1(a) hereof and the Grant Notice, but subject to Section 3.1(b) hereof, 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, then if Optionee 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. In addition, the Option may also be subject to accelerated vesting under certain circumstances to the extent set forth in the Calix, Inc. Executive Change in Control and Severance Plan, subject to the terms and conditions thereof and as may be amended from time to time.

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

(c) The expiration of one (1) year from the date of Optionee's Termination of Services by reason of Optionee's death or disability.

3.4 Tax Indemnity.

(a) Optionee 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 Optionee from, the Option, (2) the acquisition by Optionee of the Stock on exercise of the Option, or (3) the disposal of any Stock.

(b) The Option cannot be exercised until Optionee 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 Optionee. 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 Optionee, only Optionee may exercise the Option or any portion thereof. After the death of Optionee, any exercisable portion of the Option may, prior to the time when the Option becomes unexercisable under Section 3.3 hereof, be exercised by Optionee's personal representative or by any person empowered to do so under the deceased Optionee'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 Optionee 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 Optionee, 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 Optionee:

(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 Optionee 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 14.2 of the Plan.

ARTICLE 5.

OTHER PROVISIONS

5.1 Administration. The Administrator shall have full power and authority to take all actions and to make all determinations required or provided for under this Agreement, and shall have full power and authority to take all such other actions and make all such other determinations not inconsistent with the specific terms and provisions of this Agreement that the Administrator deems necessary and appropriate to the administration of this Agreement. All actions taken and all interpretations and determinations made by the Administrator in good faith shall be final and binding upon Optionee, 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 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 Optionee or his 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 14.2 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. Optionee acknowledges that the Option is subject to adjustment, modification and termination in certain events as provided in this Agreement and Section 14.2 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 Optionee shall be addressed to Optionee at Optionee'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 Optionee shall, if Optionee is then deceased, be given to the person entitled to exercise his 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. Optionee acknowledges that this Agreement is 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, this Agreement 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, this Agreement shall be deemed amended to the extent necessary to conform to such laws, rules and regulations.

5.10 Amendments, Suspension and Termination. 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 Optionee.

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 Optionee and his heirs, executors, administrators, successors and assigns.

5.12 Limitations Applicable to Section 16 Persons. Notwithstanding any other provision of this Agreement, if Optionee is subject to Section 16 of the Exchange Act, 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.

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

5.14 Entire Agreement. The Grant Notice and this Agreement (including all Exhibits thereto) constitute the entire agreement of the parties and supersede in their entirety all prior undertakings and agreements of the Company and Optionee with respect to the subject matter hereof.

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 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 Optionee or any other person for failure to do so) to adopt such amendments to 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.

**AMENDMENT TO CALIX, INC.
AMENDED AND RESTATED EXECUTIVE CHANGE IN CONTROL AND SEVERANCE PLAN**

Effective October 1, 2017, Schedule A (Group Listing) to the Calix, Inc. Amended and Restated Executive Change in Control and Severance Plan is amended and restated as follows:

**Schedule A
Group Listing**

Group A Participant(s):

President and Chief Executive Officer

Group B Participant(s)

Executive Vice President
Senior Vice President, Services
Chief Financial Officer

Group C Participant(s):

Senior Vice President
Vice President, General Counsel
Vice President, Information Technology
Vice President, Cloud Products
Vice President, Systems Products
Chief Marketing Officer

Group D Participant(s):

Vice President, Sales
Vice President, Supply Chain Operations
Vice President, Services Strategy, Portfolio and Operations

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Carl Russo , certify that:

1. I have reviewed this quarterly report on Form 10-Q of Calix, Inc. for the quarter ended September 30, 2017 ;
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; and
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: November 8, 2017

/s/ Carl Russo

Carl Russo

Chief Executive Officer

**CERTIFICATION OF INTERIM CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Cory Sindelar , certify that:

1. I have reviewed this quarterly report on Form 10-Q of Calix, Inc. for the quarter ended September 30, 2017 ;
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; and
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: November 8, 2017

/s/ Cory Sindelar

Cory Sindelar
Chief Financial Officer

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND INTERIM CHIEF 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 Quarterly Report of Calix, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended September 30, 2017 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 Quarterly Report on Form 10-Q fairly presents in all material respects the financial condition and results of operations of the Company.

Date: November 8, 2017

/s/ Carl Russo

Carl Russo

Chief 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 Quarterly Report of Calix, Inc. (the "Company") on Form 10-Q for the fiscal quarter ended September 30, 2017 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 Quarterly Report on Form 10-Q fairly presents in all material respects the financial condition and results of operations of the Company.

Date: November 8, 2017

/s/ Cory Sindelar

Cory Sindelar

Chief Financial Officer

This certification accompanies the Form 10-Q 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-Q), irrespective of any general incorporation language contained in such filing.