

TRADEMARK ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

ETAS ID: TM560646

SUBMISSION TYPE:	NEW ASSIGNMENT		
NATURE OF CONVEYANCE:	SECURITY INTEREST		
CONVEYING PARTY DATA			
Name	Formerly	Execution Date	Entity Type
CALIX, INC.		01/27/2020	Corporation: DELAWARE
RECEIVING PARTY DATA			
Name:	BANK OF AMERICA, N.A., AS AGENT		
Street Address:	121 SW Morrison St., OR1-129-17-01		
City:	Portland		
State/Country:	OREGON		
Postal Code:	97204		
Entity Type:	National Banking Association: UNITED STATES		
PROPERTY NUMBERS Total: 20			
Property Type	Number	Word Mark	
Registration Number:	1357966	OCCAM	
Registration Number:	1356286	OCCAM	
Registration Number:	5120659	AXOS	
Registration Number:	4151481	B6	
Registration Number:	3303025	C7	
Registration Number:	2789178	CALIX	
Registration Number:	5525492	CALIX CLOUD	
Registration Number:	4392669	COMPASS	
Registration Number:	4489136	CONSUMER CONNECT	
Registration Number:	4064466	E3	
Registration Number:	3802134	E5	
Registration Number:	3839295	E7	
Registration Number:	5885839	EXOS	
Registration Number:	4734689	FIBER FORWARD	
Registration Number:	4968809	GIGACENTER	
Registration Number:	4973269	GIGAHUB	
Registration Number:	5829438	GIGAMESH	
Registration Number:	4968883	GIGAPOINT	
Registration Number:	5758750	GIGASPIRE	

OP \$515.00 1357966

Property Type	Number	Word Mark
Registration Number:	2707608	

CORRESPONDENCE DATA

Fax Number: 7044448847

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 213-457-9854

Email: ksaltrick@mcguirewoods.com

Correspondent Name: McGuireWoods LLP

Address Line 1: 355 S. Grand Avenue, Suite 4200

Address Line 2: Attention: Y.Lee, Esq.

Address Line 4: Los Angeles, CALIFORNIA 90071

NAME OF SUBMITTER:	Yoojin Lee
SIGNATURE:	/s/ Yoojin Lee
DATE SIGNED:	02/05/2020

Total Attachments: 9

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MEMORANDUM AND NOTICE OF SECURITY INTEREST
IN INTELLECTUAL PROPERTY

January 27, 2020

CALIX, INC., a Delaware corporation (the “Debtor”) hereby acknowledges that it has granted to **BANK OF AMERICA, N.A.**, a national banking association (“Agent”), as Agent under the Loan Agreement referred to below, whose address is OR1-129-17-01 121 SW Morrison St., Fl 17, Portland, Oregon 97204, a security interest in and to all of Debtor’s right, title and interest in and to (a) the patents and patent registrations and applications therefor which are identified on Exhibit A attached hereto and herein incorporated by this reference owned by Debtor (the “Patents”) and (b) the trademarks and trademark registrations which are identified on Exhibit B attached hereto and herein incorporated by this reference owned by Debtor (the “Trademarks”), together with the goodwill and assets of the business, as set forth in the Loan Agreement (as defined below).

The terms and conditions of the aforementioned security interest are contained in that certain (a) Loan and Security Agreement dated as of January 27, 2020 (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the “Loan Agreement”) by and among, the Debtor, the Lenders party thereto and Agent, as security for the Obligations (as defined in the Loan Agreement) as set forth in the Loan Agreement and other agreements referred to therein. Nothing contained in this Memorandum and Notice of Security Interest in Intellectual Property shall be construed as a present or absolute assignment of any of the collateral nor as limiting any interest which Agent may have in any other collateral described in the Loan Agreement or otherwise.

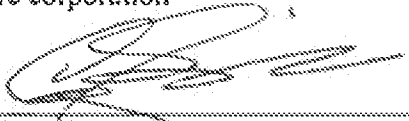
The parties hereby agree that this Memorandum and Notice of Security Interest in Intellectual Property and all claims shall be governed by the law of the State of New York, without giving effect to any conflict of law principles except federal laws relating to national banks and Sections 14.14, 14.15 and 14.16 of the Loan Agreement are hereby incorporated by reference. Debtor hereby authorizes the filing of this Memorandum and Notice of Security Interest in Intellectual Property with the United States Patent and Trademark Office.

[Signature Pages Follow]

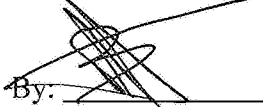
IN WITNESS WHEREOF, the undersigned has duly executed this Memorandum and Notice of Security Interest in Intellectual Property as of the date first written above.

DEBTOR:

CALIX, INC.,
a Delaware corporation

By: 
Name: Cory Sindelar
Title: Chief Financial Officer

BANK OF AMERICA, NA.,
as Agent and Lender


By: _____

Name: Brett German

Title: Senior Vice President

MEMORANDUM AND NOTICE OF SECURITY INTEREST IN INTELLECTUAL PROPERTY
(CALIX, INC.)
SIGNATURE PAGE

TRADEMARK
REEL: 006857 FRAME: 0600

EXHIBIT A
PATENTS

Title of Invention	Patent Number
FREE SPACE OPTICAL "BACKPLANE" (FSO)	6,526,211
INTEGRATED TELEPHONY SUBSCRIBER LINE PROTECTION AND FILTER DEVICE	6,606,231
ATM UTOPIA BUS SNOOPER SWITCH	6,618,376
OPTICAL ETHERNET OVERLAY FOR LOOP TOPOLOGY NETWORK	6,623,186
FIBER GUIDE CONNECTED TO A HEATSINK FASTENER	6,661,663
FACEPLATE WITH INTEGRATED LIGHT-PIPE	6,692,132
UPSTREAM SCRAMBLER SEEDING SYSTEM AND METHOD IN A PASSIVE OPTICAL NETWORK	6,700,903
GENERIC INTERFACE FOR SYSTEM AND APPLICATION MANAGEMENT	6,725,233
HEAT SINK WITH A CUTOUT	6,728,103
FAST THRESHOLD DETERMINATION FOR PACKET-MULTIPLEXED DIGITAL COMMUNICATION	6,785,344
ANGLED CONNECTOR	6,793,521
CONCURRENT SWITCHING OF SYNCHRONOUS AND ASYNCHRONOUS TRAFFIC	6,798,784
RANGING CELL DETECTION IN A NOISY ENVIRONMENT	6,801,547
VIRTUAL LOCAL AREA NETWORK PROTECTION SWITCHING	6,834,056
STRATUM TRACEABLE CLOCK DRIVER FOR VOICE DEJITTERING AND CONTROL	6,856,615
COMMAND LINE INTERFACE ABSTRACTION ENGINE	6,907,572
OPTICAL NETWORK RESTORATION	6,952,395
SYSTEM AND METHOD TO UNIFORMLY ACCESS DEVICES	6,952,830
ARBITER FOR AN INPUT BUFFERED COMMUNICATION SWITCH	6,954,811
ADAPTIVE BIT RATE TRANSPONDER	6,996,123
ETHERNET BASED TDM SWITCH	6,999,450
TRAFFIC MERGING SYSTEM	7,006,497
NETWORK ADDRESS ASSIGNMENT IN A PASSIVE OPTICAL NETWORK	7,020,157
BACKPLANE BUS	7,035,294
N TO ONE AND ONE TO ONE EQUIPMENT PROTECTION SWITCHING	7,058,011
ASYNCHRONOUS RECEIVE AND TRANSMIT PACKET CROSSPOINT	7,068,672
SYSTEM AND METHOD FOR SYNCHRONIZATION OF DEVICES ACROSS A PACKET NETWORK	7,103,072
CONFIGURATION MANAGEMENT UTILIZING GENERALIZED MARKUP LANGUAGE	7,155,496
CONNECTION REARRANGEMENT IN COMMUNICATION SWITCHES	7,187,672
METHODS, DEVICES AND COMPUTER-READABLE STORAGE MEDIA FOR PASSIVE OPTICAL NETWORK ADDRESS ASSOCIATION RECOVERY	7,318,096
FILTERING SUBSCRIBER TRAFFIC TO PREVENT DENIAL-OF-SERVICE ATTACKS	7,379,423
MULTI-STREAM JITTER BUFFER FOR PACKETIZED VOICE	7,463,598

Exhibit A

Title of Invention	Patent Number
APPLICATIONS	
CONTROLLING ARP TRAFFIC TO ENHANCE NETWORK SECURITY AND SCALABILITY IN TCP/IP NETWORKS	7,490,351
BROADBAND LOOP CARRIER SYSTEM	7,492,761
NETWORK ADDRESS ASSIGNMENT IN A PASSIVE OPTICAL NETWORK	7,525,980
BACKPLANE BUS	7,551,650
MERGING MULTIPLE DATA FLOWS IN A PASSIVE OPTICAL NETWORK	7,586,920
CONTROLLING ARP PACKET TRAFFIC TO ENHANCE NETWORK SECURITY AND SCALABILITY IN TCP/IP NETWORKS	7,596,693
NETWORK INTERFACE DEVICE COMMUNICATION VIA POWER LINE	7,652,390
PLUGGABLE OPTICAL DIPLEXER/TRIPLEXER MODULE	7,664,405
TRAFFIC MANAGEMENT FOR A PASSIVE OPTICAL NETWORK TERMINAL	7,672,233
NETWORK INTERFACE DEVICE ENCLOSURE	7,672,450
DEVICE MONITORING VIA GENERALIZED MARKUP LANGUAGE	7,685,508
FIBER OPTIC PARKING DUST COVER	7,706,657
ON-HOOK SIGNAL DETECTOR	7,756,105
METHOD AND SYSTEM TO FACILITATE MANAGEMENT OF A DISTRIBUTED NETWORK	7,836,153
MERGING MULTIPLE NETWORK DATA FLOWS	7,843,939
TRAFFIC MANAGEMENT FOR A PASSIVE OPTICAL NETWORK TERMINAL	7,848,343
METHOD, DEVICE AND COMPUTER-READABLE STORAGE MEDIUM FOR NETWORK ADDRESS ASSOCIATION RECOVERY	7,895,318
COMMUNICATION BETWEEN NETWORK INTERFACE DEVICE AND SUBSCRIBER DEVICES VIA POWER SUPPLY LINES	7,923,855
EFFICIENT MANAGEMENT OF RING NETWORKS	8,004,966
CLASS LOADER FOR MANAGING A NETWORK	8,010,973
APPLYING ADAPTIVE THRESHOLDS TO MULTICAST STREAMS WITHIN COMPUTER NETWORKS	8,121,124
UPGRADE RESILIENT MULTI-TRANSPORT OPTICAL NETWORK TERMINAL	8,139,605
NETWORK INTERFACE DEVICE COMMUNICATION VIA POWER LINE	8,212,375
PASSIVE OPTICAL NETWORK PROTECTION SWITCHING	8,244,125
AUTOMATICALLY SELECTING A CLOCK RECOVERY MODE WITHIN OPTICAL NETWORK TERMINALS	8,244,126
ONT-BASED MICRONODE MANAGEMENT	8,249,452
NETWORK DEVICE AUTHENTICATION	8,312,275
AUTOMATIC CONTROL NODE SELECTION IN RING NETWORKS	8,320,282
INLINE PACKET REPLICATION IN NETWORK DEVICES	8,325,727
COMMUNICATION BETWEEN NETWORK INTERFACE DEVICE AND SUBSCRIBER DEVICES VIA POWER SUPPLY LINES	8,338,981
SECURE DHCP PROCESSING FOR LAYER TWO ACCESS NETWORKS	8,341,725
VIRTUAL SNOOPING BRIDGE IN COMPUTER NETWORKS	8,345,540
JOINING MULTIPLE SPANNING TREE NETWORKS ACROSS RING	8,355,348

Exhibit A

Title of Invention	Patent Number
NETWORK	
OPTICAL NETWORK INTERFACE DEVICES AND METHODS	8,401,387
RETURN PATH FOR USPSTREAM COMMUNICATIONS ORIGINATING FROM OPTICAL NODE	8,428,465
OPTICAL NETWORK INTERFACE DEVICES AND METHODS	8,433,195
SYSTEM FOR CORRELATING A SUBSCRIBER UNIT WITH A PARTICULAR SUBSCRIBER IN A PASSIVE OPTICAL NETWORK	8,451,979
OPTICAL TRANSCEIVER ASSEMBLY	8,463,098
METHODS AND APPARATUSES TO SUPPORT MULTIPLE FIBER NETWORKING PLATFORMS	8,472,485
CABLE RESTRAINT	8,494,335
NETWORK DEVICE AUTHENTICATION	8,495,371
AUTOMATED VLAN ASSIGNMENT TO DOMAIN IN RING NETWORK	8,526,443
MERGING MULTIPLE NETWORK DATA FLOWS	8,559,440
PROTECTING OPTICAL TRANSPORTS FROM CONSECUTIVE IDENTICAL DIGITS IN OPTICAL COMPUTER NETWORKS	8,600,057
MULTI-CARD NETWORK DEVICE APPEARING AS SINGLE ENTITY IN SPANNING TREE NETWORK	8,625,466
NETWORK INTERFACE DEVICE SYNCHRONIZATION	8,630,546
SYSTEMS AND METHODS FOR MULTICAST ADMISSION CONTROL	8,660,004
TRANSPARENT CLOCK FOR PRECISION TIMING DISTRIBUTION	8,718,482
PROTECTING OPTICAL TRANSPORTS FROM CONSECUTIVE IDENTICAL DIGITS IN OPTICAL COMPUTER NETWORKS	8,731,198
ETHERNET OAM TO ATM OAM INTERWORKING FOR LOOPBACK CAPABILITY	8,824,308
INLINE PACKET REPLICATION IN NETWORK DEVICES	8,837,481
SYSTEMS AND METHODS FOR MEASURING FRAME LOSS IN MULTIPOINT NETWORKS	8,848,563
SECURE DHCP PROCESSING FOR LAYER TWO ACCESS NETWORKS	8,862,705
ISOLATION VLAN FOR LAYER TWO ACCESS NETWORKS	8,875,233
SCHEDULING DELIVERY OF UPSTREAM TRAFFIC BASED ON DOWNSTREAM TRAFFIC IN OPTICAL NETWORKS	8,917,993
DETERMINING QUALITY OF EXPERIENCE WITH A NETWORK	8,964,572
SYSTEM AND METHOD FOR SERVICING A DEVICE HAVING A MATRIX BARCODE	8,967,460
GRANT SCHEDULER FOR OPTICAL NETWORK DEVICES	8,976,688
OPTICAL NETWORK DEVICE WITH MULTI-TRANSPORT SUPPORT	8,983,308
SYSTEMS AND METHODS FOR MEASURING FRAME LOSS IN MULTIPOINT NETWORKS	8,989,032
PROVISIONING NETWORK DEVICES IN ETHERNET-BASED ACCESS NETWORKS	9,025,951
HYBRID RANGING USING AN OUT OF BAND SIGNAL IN OPTICAL NETWORKS	9,048,946
SYSTEM AND METHOD OF PROPAGATING LINK STATUS ACROSS A NETWORK	9,137,129
DISTRIBUTED CACHE SYSTEM FOR OPTICAL NETWORKS	9,137,326
NETWORK INTERFACE DEVICE SYNCHRONIZATION	9,178,613

Exhibit A

Title of Invention	Patent Number
SYSTEM AND METHOD FOR AUTOMATED QUALITY OF SERVICE CONFIGURATION THROUGH THE ACCESS NETWORK	9,185,042
DISTRIBUTED SYSTEM AND METHOD FOR FLOW IDENTIFICATION IN AN ACCESS NETWORK	9,240,938
APPLYING HEURISTICS TO MANAGE MULTICAST SUBSCRIPTIONS WITHIN COMPUTER NETWORKS	9,294,534
SYSTEM AND METHOD OF COMPENSATING FOR SPECTRAL EXCURSION	9,306,697
METHODS AND APPARATUSES FOR NETWORK FLOW ANALYSIS AND CONTROL	9,319,293
SYSTEM AND METHOD FOR SECURE NETWORK COMMUNICATIONS	9,369,432
TRANSPARENT CLOCK FOR PRECISION TIMING DISTRIBUTION	9,391,768
METHODS AND APPARATUSES FOR DISTRIBUTED PACKET FLOW CONTROL	9,391,903
ROGUE OPTICAL NETWORK INTERFACE DEVICE DETECTION (Multi Wavelength)	9,496,952
ROGUE OPTICAL NETWORK INTERFACE DEVICE DETECTION (Circuitry Local to ONT)	9,515,725
NETWORK LATENCY TESTING	9,515,908
OPTICAL NETWORK DEVICE WITH INTEGRATED PORT MIRRORING	9,591,386
METHODS AND APPARATUSES FOR DYNAMIC BACKHAUL BANDWIDTH MANAGEMENT IN WIRELESS NETWORKS	9,642,145
EFFICIENT MANAGEMENT OF RING NETWORKS	9,686,098
ROGUE OPTICAL NETWORK INTERFACE DEVICE DETECTION (Single Wavelength)	9,692,505
SYSTEM AND METHOD FOR LOCATING NODES WITHIN A WIRELESS NETWORK	9,716,979
PROVISIONING NETWORK DEVICES IN ETHERNET-BASED ACCESS NETWORKS	9,787,492
MITIGATING SPECTRAL EXCURSIONS IN PASSIVE OPTICAL NETWORKS	9,806,845
OPTICAL NETWORK TERMINAL WAVELENGTH NOTIFICATION	10,014,938
METHODS AND APPARATUSES FOR DYNAMIC BACKHAUL BANDWIDTH MANAGEMENT IN WIRELESS NETWORKS	9,642,145
METHODS AND APPARATUSES FOR DYNAMIC BACKHAUL BANDWIDTH MANAGEMENT IN WIRELESS NETWORKS	10,091,691
OPTICAL NETWORK DEVICE WITH INTEGRATED PORT MIRRORING	10,097,910
ROGUE OPTICAL NETWORK INTERFACE DEVICE DETECTION	10,158,421
SYSTEM AND METHOD FOR LOCATING NODES WITHIN A WIRELESS NETWORK	10,165,409
CONCURRENT OPTICAL NETWORK TERMINAL SIMULATION	10,194,007
METHODS AND APPARATUS FOR IMPROVING RELIABILITY OF AN OPTICAL DEVICE USING AUXILIARY LASERS IN A PHOTONIC INTEGRATED UNIT	10,277,327
DISTRIBUTED SYSTEM AND METHOD FOR FLOW IDENTIFICATION IN AN ACCESS NETWORK	10,284,463
CHANNEL BONDING TECHNIQUES IN A NETWORK	10,461,864
WEBSITE FILTERING USING BIFURCATED DOMAIN NAME SYSTEM	10,469,499

Exhibit A

PATENT APPLICATIONS

Title of Invention	Application Number
DEVICE SPECIFIC WEBSITE FILTERING USING A BIFURCATED DOMAIN NAME SYSTEM	Non-provisional application filed 15/488,111
CHANNEL BONDING TECHNIQUES IN A NETWORK	Notice of Allowance received 16/506,412
BURST MODE SPECTRAL EXCURSION MITIGATION	Non-provisional application filed 16/730,709

Exhibit A

EXHIBIT B
TRADEMARKS


Mark	Registration Number
OCCAM	1357966
OCCAM	1356286
AXOS	5120659
B6	4151481
C7	3303025
CALIX	2789178
CALIX CLOUD	5525492
COMPASS	4392669
CONSUMER CONNECT	4489136
E3	4064466
E5	3802134
E7	3839295
EXOS	5885839
FIBER FORWARD	4734689
GIGACENTER	4968809
GIGAHUB	4973269
GIGAMESH	5829438
GIGAPOINT	4968883
GIGASPIRE	5758750
	2707608

Exhibit B