

PATENT ASSIGNMENT

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SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY AGREEMENT

CONVEYING PARTY DATA

Name	Execution Date
Calix, Inc.	07/29/2013

RECEIVING PARTY DATA

Name:	Bank of America, N.A., as Administrative Agent
Street Address:	315 Montgomery St., 13th Floor
City:	San Francisco
State/Country:	CALIFORNIA
Postal Code:	94104

PROPERTY NUMBERS Total: 111

Property Type	Number
Patent Number:	RE37125
Patent Number:	6486462
Patent Number:	6522828
Patent Number:	6526211
Patent Number:	6553434
Patent Number:	6580774
Patent Number:	6606231
Patent Number:	6618376
Patent Number:	6623186
Patent Number:	6661663
Patent Number:	6692132
Patent Number:	6700903
Patent Number:	6725233
Patent Number:	6728103
Patent Number:	6732206

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Patent Number:	6748439
Patent Number:	6754745
Patent Number:	6785344
Patent Number:	6793521
Patent Number:	6798784
Patent Number:	6801547
Patent Number:	6834056
Patent Number:	6856615
Patent Number:	6907572
Patent Number:	6952395
Patent Number:	6952830
Patent Number:	6954811
Patent Number:	6980725
Patent Number:	6996123
Patent Number:	6999450
Patent Number:	7006497
Patent Number:	7020157
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Patent Number:	7068672
Patent Number:	7103072
Patent Number:	7155496
Patent Number:	7187672
Patent Number:	7318096
Patent Number:	7379423
Patent Number:	7463598
Patent Number:	7490351
Patent Number:	7492761
Patent Number:	7525980
Patent Number:	7551650
Patent Number:	7586920
Patent Number:	7596693
Patent Number:	7652390
Patent Number:	7664405
Patent Number:	7672233

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Patent Number:	7685508
Patent Number:	7706657
Patent Number:	7756105
Patent Number:	7836153
Patent Number:	7843939
Patent Number:	7848343
Patent Number:	7895318
Patent Number:	7923855
Patent Number:	8004966
Patent Number:	8010973
Patent Number:	8121124
Patent Number:	8139605
Patent Number:	8212375
Patent Number:	8244125
Patent Number:	8244126
Patent Number:	8249452
Patent Number:	8312275
Patent Number:	8320282
Patent Number:	8325727
Patent Number:	8338981
Patent Number:	8341725
Patent Number:	8345540
Patent Number:	8355348
Patent Number:	8401387
Patent Number:	8428465
Patent Number:	8433195
Patent Number:	8463098
Patent Number:	8451979
Application Number:	12260665
Application Number:	12512245
Application Number:	12564656
Application Number:	12575014
Application Number:	12648817
Application Number:	12652949

	12777832
Application Number:	12892457
Application Number:	12908559
Application Number:	12916880
Application Number:	12942617
Application Number:	13028659
Application Number:	13093371
Application Number:	13163074
Application Number:	13163114
Application Number:	13183123
Application Number:	13188023
Application Number:	13361433
Application Number:	13364679
Application Number:	13364695
Application Number:	13452041
Application Number:	13494158
Application Number:	13494176
Application Number:	13552258
Application Number:	13585147
Application Number:	13595444
Application Number:	13627582
Application Number:	13668400
Application Number:	13725317
Application Number:	13764255
Application Number:	13791560
Application Number:	13889078

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER:

27729-38810

PATENT

REEL: 030899 FRAME: 0600

	Dusan Clark
Signature:	/Dusan Clark/
Date:	07/29/2013
Total Attachments: 7 source=Calix Patents#page1.tif source=Calix Patents#page2.tif source=Calix Patents#page3.tif source=Calix Patents#page4.tif source=Calix Patents#page5.tif source=Calix Patents#page6.tif source=Calix Patents#page7.tif	

NOTICE
OF
GRANT OF SECURITY INTEREST
IN
PATENTS

United States Patent and Trademark Office

Ladies and Gentlemen:

Please be advised that pursuant to the Security and Pledge Agreement dated as of July 29, 2013 (as amended, modified, extended, restated, renewed, replaced, or supplemented from time to time, the "Agreement") by and among from time to time party thereto (each a "Grantor" and collectively, the "Grantors") and Bank of America, N.A., as administrative agent (the "Administrative Agent") for the Secured Parties referenced therein, the undersigned Grantor has granted a continuing security interest in and continuing lien upon the patents and patent applications shown on Schedule 1 attached hereto to the Administrative Agent for the ratable benefit of the Secured Parties.

The undersigned Grantor and the Administrative Agent, on behalf of the Secured Parties, hereby acknowledge and agree that the security interest in the foregoing patents and patent applications (a) may only be terminated in accordance with the terms of the Agreement and (b) is not to be construed as an assignment of any patent or patent application.

[Signature page follows]

Very truly yours,

CALIX, INC.

By: Michael Ashby

Name: Michael Ashby

Title: Executive Vice President & Chief Financial Officer

Acknowledged and Accepted:

BANK OF AMERICA, N.A., as Administrative Agent

By: _____

Name: _____

Title: _____

Signature page to Notice of Grant of Security Interest in Patents

PATENT

REEL: 030899 FRAME: 0603

Very truly yours,

CALIX, INC.

By: _____
Name: _____
Title: _____

Acknowledged and Accepted:

BANK OF AMERICA, N.A., as Administrative Agent

By: *Rick Freeman*
Name: RIK FREEMAN
Title: SVP

Signature page to Notice of Grant of Security Interest in Patents

Schedule I

US PATENTS

Patent #	Title of Invention	Application #	Issue Date
37,125	UNIVERSAL DEMARCATION POINT	09/185,939	4/3/2001
1383287	ARBITER FOR AN INPUT BUFFERED COMMUNICATION SWITCH (DE, FR, GB)	EP03254534,5	6/6/2007
6486462	TUNABLE OPTICAL ADD-DROP MULTIPLEXER	09/853,417	11/26/2002
6522828	ELECTRICAL POWER DISTRIBUTION SYSTEM	09/902,028	2/18/2003
6526211	FREE SPACE OPTICAL "BACKPLANE" (PSO)	09/844,896	2/25/2003
6553434	PSEUDO MASTER/SLAVE DECOUPLING OF HIGH SPEED BUS COMMUNICATIONS TIMING	09/369,135	4/22/2003
6580774	METHOD AND APPARATUS TO PERFORM CELL SYNCHRONIZATION IN AN ASYNCHRONOUS TRANSFER MODE	09/371,867	6/17/2003
6606231	INTEGRATED TELEPHONY SUBSCRIBER LINE PROTECTION AND FILTER DEVICE	10/056,934	8/12/2003
6618376	ATM UTOPIA BUS SNOOPER SWITCH	09/809,600	9/9/2003
6623186	OPTICAL ETHERNET OVERLAY FOR LOOP TOPOLOGY NETWORK	09/844,953	9/23/2003
6661663	FIBER GUIDE CONNECTED TO A HEATSINK FASTENER	10/072,598	12/9/2003
6692132	FACEPLATE WITH INTEGRATED LIGHT-PIPE	10/080,811	2/17/2004
6700903	UPSTREAM SCRAMBLER SEEDING SYSTEM AND METHOD IN A PASSIVE OPTICAL NETWORK	09/576,984	3/2/2004
6725233	GENERIC INTERFACE FOR SYSTEM AND APPLICATION MANAGEMENT	09/858,443	4/20/2004
6728103	HEAT SINK WITH A CUTOFF	10/071,968	4/27/2004
6732206	EXPANDED ADDRESSING FOR TRAFFIC QUEUES AND PRIORITIZATION	09/368,800	5/4/2004
6748439	SYSTEM AND METHOD FOR SELECTING INTERNET SERVICE PROVIDERS FROM A WORKSTATION THAT IS CONNECTED TO A	09/370,105	6/8/2004
6754745	METHOD AND APPARATUS FOR DISTRIBUTING A CLOCK IN A NETWORK	09/370,077	6/22/2004
6785344	FAST THRESHOLD DETERMINATION FOR PACKET-MULTIPLEXED DIGITAL COMMUNICATION	09/614,653	8/31/2004
6793521	ANGLED CONNECTOR	10/051,940	9/21/2004
6798784	CONCURRENT SWITCHING OF SYNCHRONOUS AND ASYNCHRONOUS TRAFFIC	09/874,352	9/28/2004
6801547	RANGING CELL DETECTION IN A NOISY ENVIRONMENT	09/576,099	10/5/2004
6834056	VIRTUAL LOCAL AREA NETWORK PROTECTION SWITCHING	09/892,811	12/21/2004
6856615	STRATUM TRACEABLE CLOCK DRIVER FOR VOICE DEJITTERING AND CONTROL	09/638,522	2/15/2005
6907572	COMMAND LINE INTERFACE ABSTRACTION ENGINE	09/927,250	6/14/2005
6952395	OPTICAL NETWORK RESTORATION	09/872,851	10/4/2005
6952830	SYSTEM AND METHOD TO UNIFORMLY ACCESS DEVICES	09/931,792	10/4/2005
6954811	ARBITER FOR AN INPUT BUFFERED COMMUNICATION SWITCH	10/199,996	10/11/2005
6980725	SPACE REUSE DURING TECHNOLOGY UPGRADE IN A PROTECTION AREA OF AN OUTDOOR ENCLOSURE	10/137,210	12/27/2005
6996123	ADAPTIVE BIT RATE TRANSPONDER	09/833,528	2/7/2006

[Notice of Grant of Security Interest in Patents]

6999450	ETHERNET BASED TDM SWITCH	09/842,559	2/14/2006
7006497	TRAFFIC MERGING SYSTEM	09/874,904	2/28/2006
7020157	NETWORK ADDRESS ASSIGNMENT IN A PASSIVE OPTICAL NETWORK	10/144,008	3/28/2006
7035294	BACKPLANE BUS	09/874,402	4/25/2006
7058011	N TO ONE AND ONE TO ONE EQUIPMENT PROTECTION SWITCHING	09/793,071	6/6/2006
7068672	ASYNCHRONOUS RECEIVE AND TRANSMIT PACKET CROSSPOINT	09/874,395	6/27/2006
7103072	SYSTEM AND METHOD FOR SYNCHRONIZATION OF DEVICES ACROSS A PACKET NETWORK	10/326,505	9/5/2006
7155496	CONFIGURATION MANAGEMENT UTILIZING GENERALIZED MARKUP LANGUAGE	10/060,462	12/26/2006
7187672	CONNECTION REARRANGEMENT IN COMMUNICATION SWITCHES	10/147,446	3/6/2007
7318096	METHODS, DEVICES AND COMPUTER-READABLE STORAGE MEDIA FOR PASSIVE OPTICAL NETWORK ADDRESS ASSOCIATION	10/691,166	1/8/2008
7379423	FILTERING SUBSCRIBER TRAFFIC TO PREVENT DENIAL-OF-SERVICE ATTACKS	10/394,288	5/27/2008
7463598	MULTI-STREAM JITTER BUFFER FOR PACKETIZED VOICE APPLICATIONS	10/052,446	12/9/2008
7490351	CONTROLLING ARP TRAFFIC TO ENHANCE NETWORK SECURITY AND SCALABILITY IN TCP/IP NETWORKS	10/388,251	2/10/2009
7492761	BROADBAND LOOP CARRIER SYSTEM	10/109,794	2/17/2009
7525980	NETWORK ADDRESS ASSIGNMENT IN A PASSIVE OPTICAL NETWORK	10/910,523	4/28/2009
7551650	BACKPLANE BUS	11/404,236	6/23/2009
7586920	MERGING MULTIPLE DATA FLOWS IN A PASSIVE OPTICAL NETWORK	10/857,349	9/8/2009
7596693	CONTROLLING ARP PACKET TRAFFIC TO ENHANCE NETWORK SECURITY AND SCALABILITY IN TCP/IP NETWORKS	11/591,620	9/29/2009
7652390	NETWORK INTERFACE DEVICE COMMUNICATION VIA POWER LINE	11/313,222	1/26/2010
7664405	PLUGGABLE OPTICAL DIPLEXER/TRIPLEXER MODULE	11/122,653	2/16/2010
7672233	TRAFFIC MANAGEMENT FOR A PASSIVE OPTICAL NETWORK TERMINAL	11/157,226	3/2/2010
7672450	NETWORK INTERFACE DEVICE ENCLOSURE	10/937,809	3/2/2010
7685508	DEVICE MONITORING VIA GENERALIZED MARKUP LANGUAGE	10/060,581	3/23/2010
7706657	FIBER OPTIC PARKING DUST COVER	12/347,906	4/27/2010
7756105	ON-HOOK SIGNAL DETECTOR	10/377,065	7/13/2010
7836153	METHOD AND SYSTEM TO FACILITATE MANAGEMENT OF A DISTRIBUTED NETWORK	09/632,075	11/16/2010
7843939	MERGING MULTIPLE NETWORK DATA FLOWS	12/258,908	11/30/2010
7848343	TRAFFIC MANAGEMENT FOR A PASSIVE OPTICAL NETWORK TERMINAL	11/157,438	12/7/2010
7895318	METHOD, DEVICE AND COMPUTER-READABLE STORAGE MEDIUM FOR NETWORK ADDRESS ASSOCIATION RECOVERY	11/957,992	2/22/2011
7923855	COMMUNICATION BETWEEN NETWORK INTERFACE DEVICE AND SUBSCRIBER DEVICES VIA POWER SUPPLY LINES	11/706,842	4/12/2011
8004966	EFFICIENT MANAGEMENT OF RING NETWORKS	12/109,519	8/23/2011

8010973	CLASS LOADER FOR MANAGING A NETWORK	11/756,595	8/30/2011
8121124	APPLYING ADAPTIVE THRESHOLDS TO MULTICAST STREAMS WITHIN COMPUTER NETWORKS	12/485,475	2/21/2012
8139605	UPGRADE RESILIENT MULTI-TRANSPORT OPTICAL NETWORK TERMINAL	12/115,220	3/20/2012
8212375	NETWORK INTERFACE DEVICE COMMUNICATION VIA POWER LINE	12/187,880	7/3/2012
8244125	PASSIVE OPTICAL NETWORK PROTECTION SWITCHING	12/356,587	8/14/2012
8244126	AUTOMATICALLY SELECTING A CLOCK RECOVERY MODE WITHIN OPTICAL NETWORK TERMINALS	12/327,504	8/14/2012
8249452	ONT-BASED MICRONODE MANAGEMENT	12/407,492	8/21/2012
8312275	NETWORK DEVICE AUTHENTICATION	12/652,957	11/13/2012
8320282	AUTOMATIC CONTROL NODE SELECTION IN RING NETWORKS	12/512,223	11/27/2012
8325727	INLINE PACKET REPLICATION IN NETWORK DEVICES	12/756,537	12/4/2012
8338981	COMMUNICATION BETWEEN NETWORK INTERFACE DEVICE AND SUBSCRIBER DEVICES VIA POWER SUPPLY LINES	13/026,592	12/25/2012
8341725	SECURE DHCP PROCESSING FOR LAYER TWO ACCESS NETWORKS	12/512,239	12/25/2012
8345540	VIRTUAL SNOOPING BRIDGE IN COMPUTER NETWORKS	12/759,362	1/1/2013
8355348	JOINING MULTIPLE SPANNING TREE NETWORKS ACROSS RING NETWORK	12/692,091	1/15/2013
8401387	OPTICAL NETWORK INTERFACE DEVICES AND METHODS	12/121,243	3/19/2013
8428465	RETURN PATH FOR USPSTREAM COMMUNICATIONS ORIGINATING FROM OPTICAL NODE	12/260,690	4/23/2013
8433195	OPTICAL NETWORK INTERFACE DEVICES AND METHODS	12/121,283	4/30/2013
8463098	OPTICAL TRANSCEIVER ASSEMBLY	12/860,211	6/11/2013
8451979	System for correlating a subscriber unit with a particular subscriber in a passive optical network	09/873,933	5/28/2013
N/A	RETURN PATH COMPLIANCE IN NETWORKS	12/260,665	N/A
N/A	SECURE DHCP PROCESSING FOR LAYER TWO ACCESS NETWORKS	12/512,245	N/A
N/A	OPTICAL NETWORK DEVICE WITH MULTI-TRANSPORT SUPPORT	12/564,656	N/A
N/A	AUTOMATED VLAN ASSIGNMENT TO DOMAIN IN RING NETWORK	12/575,014	N/A
N/A	METHODS AND APPARATUSES TO SUPPORT MULTIPLE FIBER NETWORKING PLATFORMS	12/648,817	N/A
N/A	NETWORK DEVICE AUTHENTICATION	12/652,949	N/A
N/A	MULTI-CARD NETWORK DEVICE APPEARING AS SINGLE ENTITY IN SPANNING TREE NETWORK	12/777,832	N/A
N/A	CABLE RESTRAINT	12/892,457	N/A
N/A	MERGING MULTIPLE NETWORK DATA FLOWS	12/908,559	N/A
N/A	NETWORK INTERFACE DEVICE SYNCHRONIZATION	12/916,880	N/A
N/A	TRANSPARENT CLOCK FOR PRECISION TIMING DISTRIBUTION	12/942,617	N/A
N/A	SYSTEMS AND METHODS FOR MULTICAST ADMISSION CONTROL	13/028,659	N/A
N/A	PROVISIONING NETWORK DEVICES IN ETHERNET-BASED ACCESS NETWORKS	13/093,371	N/A
N/A	GRANT SCHEDULER FOR OPTICAL NETWORK DEVICES	13/163,074	N/A
N/A	SCHEDULING DELIVERY OF UPSTREAM TRAFFIC BASED ON DOWNSTREAM TRAFFIC IN OPTICAL NETWORKS	13/163,114	N/A

N/A	EFFICIENT MANAGEMENT OF RING NETWORKS	13/183,123	N/A
N/A	COMMUNICATION AMONG NETWORK DEVICES AT SUBSCRIBER PREMISES	13/188,023	N/A
N/A	ISOLATION VLAN FOR LAYER TWO ACCESS NETWORKS	13/361,433	N/A
N/A	PROTECTING OPTICAL TRANSPORTS FROM CONSECUTIVE IDENTICAL DIGITS IN OPTICAL COMPUTER NETWORKS	13/364,679	N/A
N/A	PROTECTING OPTICAL TRANSPORTS FROM CONSECUTIVE IDENTICAL DIGITS IN OPTICAL COMPUTER NETWORKS	13/364,695	N/A
N/A	ETHERNET OAM TO ATM OAM INTERWORKING FOR LOOPBACK CAPABILITY	13/452,041	N/A
N/A	SYSTEMS AND METHODS FOR MEASURING FRAME LOSS IN MULTIPOINT NETWORKS	13/494,158	N/A
N/A	SYSTEMS AND METHODS FOR MEASURING FRAME LOSS IN MULTIPOINT NETWORKS	13/494,176	N/A
N/A	APPLYING HEURISTICS TO MANAGE MULTICAST SUBSCRIPTIONS WITHIN COMPUTER NETWORKS	13/552,258	N/A
N/A	DISTRIBUTED CACHE SYSTEM FOR OPTICAL NETWORKS	13/585,147	N/A
N/A	DETECTING AND COMMUNICATING POTENTIAL OPTICAL FIBER ISSUES IN OPTICAL NETWORKS	13/595,444	N/A
N/A	DETERMINING QUALITY OF EXPERIENCE WITH A NETWORK	13/627,582	N/A
N/A	INLINE PACKET REPLICATION IN NETWORK DEVICES	13/668,400	N/A
N/A	LASER POWER CONTROL USING BIAS AND MODULATION CURRENT FEEDBACK	13/725,317	N/A
N/A	SYSTEM AND METHOD OF PROPAGATING LINK STATUS ACROSS A NETWORK	13/764,255	N/A
N/A	NETWORK ACTIVATION TESTING	13/791,560	N/A
N/A	METHODS AND APPARATUSES FOR DYNAMIC BACKHAUL BANDWIDTH MANAGEMENT IN WIRELESS NETWORKS	13/889,078	N/A