

PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT4667447

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST
CONVEYING PARTY DATA	
Name	Execution Date
GOLDMAN SACHS BANK USA, AS COLLATERAL AGENT	10/27/2017
RECEIVING PARTY DATA	
Name:	MACOM CONNECTIVITY SOLUTIONS, LLC (SUCCESSOR TO APPLIED MICRO CIRCUITS CORPORATION)
Street Address:	100 CHELMSFORD STREET
City:	LOWELL
State/Country:	MASSACHUSETTS
Postal Code:	01851
PROPERTY NUMBERS Total: 71	
Property Type	Number
Patent Number:	8384421
Patent Number:	8397197
Patent Number:	8421514
Patent Number:	8429315
Patent Number:	8497721
Patent Number:	8499012
Patent Number:	8539413
Patent Number:	8604854
Patent Number:	8618856
Patent Number:	8732351
Patent Number:	8762362
Patent Number:	8762915
Patent Number:	8767757
Patent Number:	8793334
Patent Number:	8793435
Patent Number:	8806135
Patent Number:	8850121
Patent Number:	8881161
Patent Number:	8893267
Patent Number:	8898204

PATENT

Property Type	Number
Patent Number:	8918791
Patent Number:	8949581
Patent Number:	8964452
Patent Number:	8990473
Patent Number:	9032152
Patent Number:	9058284
Patent Number:	9142286
Patent Number:	9146677
Patent Number:	9152661
Patent Number:	9158713
Patent Number:	9170642
Patent Number:	9213643
Patent Number:	9280479
Patent Number:	9300578
Patent Number:	9336162
Patent Number:	9336164
Patent Number:	9367454
Patent Number:	9438225
Patent Number:	9558123
Patent Number:	9568511
Patent Number:	9588923
Patent Number:	9720830
Patent Number:	9734072
Application Number:	14100228
Application Number:	15256787
Application Number:	15098573
Application Number:	15712519
Application Number:	15149249
Application Number:	13953059
Application Number:	14519271
Application Number:	14566945
Application Number:	14203896
Application Number:	14243949
Application Number:	15250966
Application Number:	15351477
Application Number:	15384437
Application Number:	15149244
Application Number:	15015338

Property Type	Number
Application Number:	14101948
Application Number:	15366251
Application Number:	14838778
Application Number:	14710837
Application Number:	14497619
Application Number:	14482780
Application Number:	15068737
Application Number:	14264716
Application Number:	14045065
Application Number:	15414739
Application Number:	15444478
Application Number:	13838624
Application Number:	15372581

CORRESPONDENCE DATA

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ATTORNEY DOCKET NUMBER: 244130/1354

NAME OF SUBMITTER: OREN EPSTEIN

SIGNATURE: /OE/

DATE SIGNED: 10/31/2017

Total Attachments: 12

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RELEASE OF PATENT SECURITY INTEREST

This RELEASE OF PATENT SECURITY INTEREST (this “Release”) dated as of October 27, 2017, is made by GOLDMAN SACHS BANK USA, as Collateral Agent (as defined in the Credit Agreement referred to below), in favor of MACOM CONNECTIVITY SOLUTIONS, LLC (successor to Applied Micro Circuits Corporation), a Delaware limited liability company (the “Grantor”). Capitalized terms used but not otherwise defined herein shall have the meanings ascribed to those terms in the Patent Security Agreement (as defined below) or the Security Agreement (as defined below), as applicable.

Reference is made to the Credit Agreement dated as of May 8, 2014 (as amended, restated, extended, supplemented or otherwise modified from time to time, the “Credit Agreement”), among MACOM Technology Solutions Holdings, Inc. (f/k/a M/A-COM Technology Solutions Holdings, Inc.) (the “Borrower”), each Lender from time to time party thereto, Goldman Sachs Bank USA, as Administrative Agent, the Collateral Agent, Swing Line Lender and an L/C Issuer, and the other agents and parties party thereto.

WHEREAS, the Grantor is party to a Security Agreement, dated as of May 8, 2014 (as amended, restated, extended, supplemented or otherwise modified from time to time, the “Security Agreement”), in favor of the Collateral Agent.

WHEREAS, in connection with the Credit Agreement and the Security Agreement, the Grantor executed and delivered to the Collateral Agent a Patent Security Agreement, dated as of May 4, 2017 (as amended, restated, extended, supplemented or otherwise modified from time to time, the “Patent Security Agreement”), which was recorded with the United States Patent and Trademark Office on May 11, 2017 at Reel/Frame 42444/0891;

WHEREAS, pursuant to the terms and conditions of the Patent Security Agreement, the Grantor granted to the Collateral Agent, for the benefit of the Secured Parties, a security interest (the “Security Interest”) in all of the Grantor’s right, title or interest in or to any and all of the Owned Patents, then owned or at any time thereafter acquired by the Grantor or in which the Grantor then had or at any time in the future may have acquired any right, title or interest (the “Patent Collateral”), including the patents and patent applications listed on Schedule A attached hereto (the “Specified Patents”);

WHEREAS, pursuant to that certain Officer’s Certificate dated as of the date hereof (the “Certificate”), the Borrower certified to the Collateral Agent that the Grantor is selling certain assets and property, including the Transferred Intellectual Property Rights (as defined in the Purchase Agreement attached as Annex A to the Release of Security Interest in Specified Property entered into by the Grantor and the Collateral Agent as of the date hereof) included in the Specified Property (as defined in such Release of Security Interest in Specified Property) (the “Released Intellectual Property Rights”) to Project Denver Holdings, LLC, a Delaware limited liability company, in a disposition of assets permitted pursuant to Section 7.05(e) of the Credit Agreement; and

WHEREAS, the Collateral Agent, solely in reliance on the representations, warranties and certifications made pursuant to the Certificate and without independent

investigation, has agreed to release its security interest solely in the Released Intellectual Property Rights, including the Specified Patents, and not in any other Patent Collateral, in accordance with the last sentence of Section 7.05 of the Credit Agreement and as authorized pursuant to Section 9.11 of the Credit Agreement.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Collateral Agent hereby agrees as follows:

Section 1. Release of Security Interest. Without any warranty or representation by, or other recourse to, the Collateral Agent, the Collateral Agent hereby releases its Security Interest in the Released Intellectual Property Rights, including the Specified Patents. This Release is not intended to and does not release, relinquish, discharge or terminate the Collateral Agent's security interest in any Patent Collateral (or other asset or collateral of the Grantor) other than the Released Intellectual Property Rights. Except for the release of the Security Interest in the Released Intellectual Property Rights, all terms and provisions of the Patent Security Agreement shall remain in full force and effect.

Section 2. Miscellaneous. Delivery by telecopier, .pdf or other electronic imaging means of an executed signature page to this Release shall be effective as delivery of an original executed counterpart of this Release.

Section 3. Governing Law. This Release shall be governed by, and construed in accordance with, the laws of the State of New York.

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IN WITNESS WHEREOF, the Collateral Agent has duly executed and delivered this Release of Patent Security Interest as of the day and year first written above.

GOLDMAN SACHS BANK USA, as
Collateral Agent

By:  _____

Name:

Title:

Gabriel Jacobson
Authorized Signatory

[Signature Page to Release of Patent Security Interest]

PATENT
REEL: 044652 FRAME: 0614

**SCHEDULE A
TO
RELEASE OF PATENT SECURITY INTEREST**

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
DIGITAL CMOS CIRCUIT WITH NOISE CANCELLATION	Applied Micro Circuits Corporation ¹	Apr-21-2011	13/092,084	Feb-26-2013	8,384,421	Aug-26-2020
INTEGRATED CIRCUIT MODULE TIME DELAY BUDGETING	Applied Micro Circuits Corporation	May-25-2011	13/115,858	Mar-12-2013	8,397,197	Sep-12-2020
HAZARD-FREE MINIMAL-LATENCY FLIP-FLOP (HFML-FF)	Applied Micro Circuits Corporation	Sep-02-2011	13/225,044	Apr-16-2013	8,421,514	Oct-16-2020
STASHING SYSTEM AND METHOD FOR THE PREVENTION OF CACHE THRASHING	Applied Micro Circuits Corporation	Jun-24-2011	13/167,783	Apr-23-2013	8,429,315	Oct-23-2020
Pass gate shadow latch	Applied Micro Circuits Corporation	Jun-15-2011	13/160,569	Jul-30-2013	8,497,721	Jan-30-2021
SYSTEM AND METHOD FOR ATTACHED STORAGE STACKING	Applied Micro Circuits Corporation	Jun-18-2010	12/818,870	Jul-30-2013	8,499,012	Jan-30-2021
FREQUENCY OPTIMIZATION USING USEFUL SKEW TIMING	Applied Micro Circuits Corporation	Apr-27-2010	12/767,894	Sep-03-2013	8,539,413	Mar-03-2021
Pseudo single-phase flip-flop (PSP-FF)	Applied Micro Circuits Corporation	Mar-06-2012	13/412,679	Dec-10-2013	8,604,854	Jun-10-2021

¹ Applied Micro Circuits Corporation merged with and into MACOM Connectivity Solutions, LLC on January 26, 2017.

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
SHADOW LATCH	Applied Micro Circuits Corporation	Mar-31-2011	13/077,949	Dec-31-2013	8,618,856	Jun-30-2021
System and method for packet splitting	Applied Micro Circuits Corporation	Nov-01-2010	12/917,425	May-20-2014	8,732,351	Nov-20-2017
SYSTEM AND METHOD FOR UPDATING A DATA STRUCTURE	Applied Micro Circuits Corporation	Oct-21-2011	13/278,701	Jun-24-2014	8,762,362	Dec-24-2017
SYSTEM AND METHOD FOR INTEGRATED CIRCUIT DIE SIZE REDUCTION	Applied Micro Circuits Corporation	Sep-17-2010	12/884,264	Jun-24-2014	8,762,915	Dec-24-2017
PACKET FORWARDING SYSTEM AND METHOD USING PATRICIA TRIE CONFIGURED HARDWARE	Applied Micro Circuits Corporation	Feb-15-2012	13/396,711	Jul-01-2014	8,767,757	Jan-01-2018
NETWORK-ATTACHED STORAGE (NAS) BANDWIDTH MANAGER	Applied Micro Circuits Corporation	Jul-19-2010	12/839,225	Jul-29-2014	8,793,334	Jan-29-2018
Load miss result buffer with shared data lines	Applied Micro Circuits Corporation	Sep-30-2011	13/250,596	Jul-29-2014	8,793,435	Jan-29-2018
LOAD STORE UNIT WITH LOAD MISS RESULT BUFFER	Applied Micro Circuits Corporation	Sep-30-2011	13/250,481	Aug-12-2014	8,806,135	Feb-12-2018
Outstanding load miss buffer with shared entries	Applied Micro Circuits Corporation	Sep-30-2011	13/250,544	Sep-30-2014	8,850,121	Mar-30-2018
Operating system with hardware-enabled task manager for offloading CPU task scheduling	Applied Micro Circuits Corporation	Jan-28-2010	12/695,953	Nov-04-2014	8,881,161	May-4-2018
SYSTEM AND METHOD FOR PARTITIONING	Applied Micro Circuits	Aug-17-2011	13/212,112	Nov-18-2014	8,893,267	May-18-2018

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
RESOURCES IN A SYSTEM-ON-CHIP (SOC)	Corporation					
SYSTEM AND METHOD FOR CONTROLLING UPDATES OF A DATA STRUCTURE	Applied Micro Circuits Corporation	Oct-21-2011	13/278,753	Nov-25-2014	8,898,204	May-25-2018
Method and system for queuing a request by a processor to access a shared resource and granting access in accordance with an embedded lock ID	Applied Micro Circuits Corporation	Mar-10-2011	13/045,453	Dec-23-2014	8,918,791	Jun-23-2018
THRESHOLD CONTROLLED LIMITED OUT OF ORDER LOAD EXECUTION	Applied Micro Circuits Corporation	May-09-2011	13/103,833	Feb-03-2015	8,949,581	Aug-3-2018
Programmable resistance-modulated write assist for a memory device	Applied Micro Circuits Corporation	Dec-26-2012	13/726,800	Feb-24-2015	8,964,452	Aug-24-2018
Managing requests to open and closed banks in a memory system	Applied Micro Circuits Corporation	Oct-04-2012	13/644,924	Mar-24-2015	8,990,473	Sep-24-2018
Cache miss detection filter	Applied Micro Circuits Corporation	Mar-22-2013	13/848,828	May-12-2015	9,032,152	Nov-12-2018
Method and apparatus for performing table lookup	Applied Micro Circuits Corporation	Mar-16-2012	13/422,979	Jun-16-2015	9,058,284	Dec-16-2018
Integrated circuit memory device with read-disturb control	Applied Micro Circuits Corporation	Apr-15-2013	13/863,208	Sep-22-2015	9,142,286	Mar-22-2019
Systems and methods for queue request ordering without stalling requests in aliasing conditions by using a hash indexed	Applied Micro Circuits Corporation	Jan-28-2013	13/752,161	Sep-29-2015	9,146,677	Mar-29-2019

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
based table						
SYSTEM AND METHOD FOR SEARCHING A DATA STRUCTURE	Applied Micro Circuits Corporation	Oct-21-2011	13/278,785	Oct-06-2015	9,152,661	Apr-6-2019
Packet processing with dynamic load balancing	Applied Micro Circuits Corporation	May-03-2010	12/772,832	Oct-13-2015	9,158,713	Apr-13-2019
Dynamic power control	Applied Micro Circuits Corporation	Mar-21-2013	13/848,377	Oct-27-2015	9,170,642	Apr-27-2019
Broadcast messaging and acknowledgment messaging for power management in a multiprocessor system	Applied Micro Circuits Corporation	Mar-13-2013	13/799,268	Dec-15-2015	9,213,643	Jun-15-2019
Multi-level integrated photonic devices	Applied Micro Circuits Corporation	May-22-2012	13/478,100	Mar-08-2016	9,280,479	Sep-8-2019
LARGE RECEIVE OFFLOAD FUNCTIONALITY FOR A SYSTEM ON CHIP	Applied Micro Circuits Corporation	Feb-21-2013	13/772,535	Mar-29-2016	9,300,578	Sep-29-2019
System and method for pre-fetching data based on a FIFO queue of packet messages reaching a first capacity threshold	Applied Micro Circuits Corporation	Feb-16-2012	13/398,679	May-10-2016	9,336,162	Nov-10-2019
SCHEDULING MEMORY BANKS BASED ON MEMORY ACCESS PATTERNS	Applied Micro Circuits Corporation	Oct-04-2012	13/644,935	May-10-2016	9,336,164	Nov-10-2019
ADDRESS INDEX RECOVERY USING HASH-BASED EXCLUSIVE OR	Applied Micro Circuits Corporation	Aug-15-2013	13/967,607	Jun-14-2016	9,367,454	Dec-14-2019
HIGH EFFICIENCY HALF-CROSS-COUPLED DECOUPLING	Applied Micro Circuits Corporation	Jun-04-2015	14/736,882	Sep-06-2016	9,438,225	Mar-6-2020

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
CAPACITOR						
Retrieval hash index	Applied Micro Circuits Corporation	May-18-2016	15/157,597	Jan-31-2017	9,558,123	Jul-31-2020
High frequency voltage supply monitor	Applied Micro Circuits Corporation	Mar-13-2014	14/208,408	Feb-14-2017	9,568,511	Aug-14-2020
Flow pinning in a server on a chip	Applied Micro Circuits Corporation	Jan-24-2014	14/162,903	Mar-07-2017	9,588,923	Sep-7-2020
SYSTEMS AND METHODS FACILITATING REDUCED LATENCY VIA STASHING IN SYSTEM ON CHIPS	Applied Micro Circuits Corporation	Jul-10-2015	14/796,167	Aug-01-2017	9,720,830	Feb-1-2021
MAIN MEMORY PREFETCH OPERATION AND MULTIPLE PREFETCH OPERATION	Applied Micro Circuits Corporation	Mar-24-2015	14/666,771	Aug-15-2017	9,734,072	Feb-15-2021
ALLOCATION OF LOAD INSTRUCTION(S) TO A QUEUE BUFFER IN A PROCESSOR SYSTEM BASED ON PREDICTION OF AN INSTRUCTION PIPELINE HAZARD	Applied Micro Circuits Corporation	Dec-09-2013	14/100,228			
Clock Control Based on Voltage Associated with a Microprocessor	Applied Micro Circuits Corporation	Sep-06-2016	15/256,787			
DATA MANAGEMENT FOR CACHE MEMORY	Applied Micro Circuits Corporation	Apr-14-2016	15/098,573			
DATA MANAGEMENT	Applied Micro Circuits Corporation	Sep-22-2017	15/712,519			

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
FOR CACHE MEMORY	Corporation					
EFFICIENT TECHNIQUES FOR PROCESS VARIATION REDUCTION FOR STATIC TIMING ANALYSIS	Applied Micro Circuits Corporation	May-09-2016	15/149,249			
END-TO-END FLOW CONTROL IN SYSTEM ON CHIP INTERCONNECTS	Applied Micro Circuits Corporation	Jul-29-2013	13/953,059			
FLEXIBLE AND ROBUST POWER GRID CONNECTIVITY	Applied Micro Circuits Corporation	Oct-21-2014	14/519,271			
GENERATING AND/OR EMPLOYING A DESCRIPTOR ASSOCIATED WITH A MEMORY TRANSLATION TABLE	Applied Micro Circuits Corporation	Dec-11-2014	14/566,945			
Hazard Prediction for a Group of memory Access Instructions Using a Buffer Associated with Branch Prediction	Applied Micro Circuits Corporation	Mar-11-2014	14/203,896			
Implementation of Load Acquire/Store Release Instructions Using Load/Store Operation with DMB Operation	Applied Micro Circuits Corporation	Apr-03-2014	14/243,949			
MANAGING A DATA PACKET FOR AN OPERATING SYSTEM ASSOCIATED WITH A MULTI-	Applied Micro Circuits Corporation	Aug-30-2016	15/250,966			

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
NODE SYSTEM						
MEMORY PAGE REQUEST FOR OPTIMIZING MEMORY PAGE LATENCY ASSOCIATED WITH NETWORK NODES	Applied Micro Circuits Corporation	Nov-15-2016	15/351,477			
METHOD TO DYNAMICALLY INJECT ERRORS IN A REPAIRABLE MEMORY ON SILICON AND A METHOD TO VALIDATE BUILT-IN-SELF-REPAIR LOGIC	Applied Micro Circuits Corporation	Dec-20-2016	15/384,437			
MIMCAP CREATION AND UTILIZATION METHODOLOGY	Applied Micro Circuits Corporation	May-09-2016	15/149,244			
MULTIPLE-QUEUE INTEGER COALESCING MAPPING ALGORITHM WITH SHARED BASED TIME	Applied Micro Circuits Corporation	Feb-04-2016	15/015,338			
MULTI-STAGE ADDRESS TRANSLATION FOR A COMPUTING DEVICE	Applied Micro Circuits Corporation	Dec-10-2013	14/101,948			
OPTIMIZING MEMORY MAPPING(S) ASSOCIATED WITH NETWORK NODES	Applied Micro Circuits Corporation	Dec-01-2016	15/366,251			
PACKAGE PROGRAMMABLE DECOUPLING	Applied Micro Circuits Corporation	Aug-28-2015	14/838,778			

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
CAPACITOR ARRAY	Corporation					
PREFETCH TAG FOR EVICTION PROMOTION	Applied Micro Circuits Corporation	May-13-2015	14/710,837			
PRIORITY FRAMEWORK FOR A COMPUTING DEVICE	Applied Micro Circuits Corporation	Sep-26-2014	14/497,619			
PULSE-LATCH BASED BUS DESIGN FOR INCREASED BANDWIDTH	Applied Micro Circuits Corporation	Sep-10-2014	14/482,780			
SELF-REFERENCED ON-DIE VOLTAGE DROOP DETECTOR	Applied Micro Circuits Corporation	Mar-14-2016	15/068,737			
SYSTEMS AND METHODS FACILITATING MULTI-WORD ATOMIC OPERATION SUPPORT FOR SYSTEM ON CHIP ENVIRONMENTS	Applied Micro Circuits Corporation	Apr-29-2014	14/264,716			
Tcp segmentation offload in a server on a chip	Applied Micro Circuits Corporation	Oct-03-2013	14/045,065			
TECHNIQUES FOR STATISTICAL FREQUENCY ENHANCEMENT OF STATICALLY TIMED DESIGNS	Applied Micro Circuits Corporation	Jan-25-2017	15/414,739			
VARIATION IMMUNE ON-DIE VOLTAGE DROOP DETECTOR	Applied Micro Circuits Corporation	Feb-28-2017	15/444,478			
VIRTUAL APPLIANCE ON A CHIP	Applied Micro Circuits Corporation	Mar-15-2013	13/838,624			

Title	Owner	Application Date	Application Number	Grant Date	Grant Number	Expiration Date
WRITE ASSIST FOR MEMORIES WITH RESISTIVE BIT LINES	Applied Micro Circuits Corporation	Dec-08-2016	15/372,581			