

<b>PATENT ASSIGNMENT COVER SHEET</b>
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Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT4475195

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	SECURITY INTEREST

**CONVEYING PARTY DATA**

Name	Execution Date
MELLANOX TECHNOLOGIES, LTD.	06/19/2017
MELLANOX TECHNOLOGIES TLV LTD.	06/19/2017
MELLANOX TECHNOLOGIES SILICON PHOTONICS INC.	06/19/2017

**RECEIVING PARTY DATA**

<b>Name:</b>	JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT
<b>Street Address:</b>	10 S. DEARBORN
<b>Internal Address:</b>	7TH FLOOR
<b>City:</b>	CHICAGO
<b>State/Country:</b>	ILLINOIS
<b>Postal Code:</b>	60603

**PROPERTY NUMBERS Total: 184**

Property Type	Number
<b>PCT Number:</b>	US2016048929
<b>Patent Number:</b>	9514050
<b>Patent Number:</b>	7668979
<b>Patent Number:</b>	7814242
<b>Patent Number:</b>	7461236
<b>Patent Number:</b>	8018849
<b>Patent Number:</b>	7853774
<b>Patent Number:</b>	8635378
<b>Patent Number:</b>	9329798
<b>Patent Number:</b>	7577820
<b>Patent Number:</b>	7734894
<b>Patent Number:</b>	8127111
<b>Patent Number:</b>	7805392
<b>Patent Number:</b>	8065259
<b>Patent Number:</b>	8086554
<b>Patent Number:</b>	9009660
<b>Patent Number:</b>	7624248

PATENT

<b>Property Type</b>	<b>Number</b>
<b>Patent Number:</b>	7636835
<b>Patent Number:</b>	8190855
<b>Patent Number:</b>	7539845
<b>Patent Number:</b>	7774579
<b>Patent Number:</b>	7793074
<b>Patent Number:</b>	7461210
<b>Patent Number:</b>	7805577
<b>Patent Number:</b>	7882307
<b>Patent Number:</b>	8200901
<b>Patent Number:</b>	8631205
<b>Patent Number:</b>	9298618
<b>Patent Number:</b>	7620791
<b>Patent Number:</b>	7877401
<b>Patent Number:</b>	8620940
<b>Patent Number:</b>	8194690
<b>Patent Number:</b>	7805575
<b>Patent Number:</b>	8677081
<b>Patent Number:</b>	8250555
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<b>Patent Number:</b>	7853754
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<b>Patent Number:</b>	8560780
<b>Patent Number:</b>	7853752
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<b>Patent Number:</b>	8181168
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<b>Patent Number:</b>	8151088
<b>Patent Number:</b>	8737392
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<b>Patent Number:</b>	8327187
<b>Patent Number:</b>	8392661
<b>Patent Number:</b>	8549249
<b>Patent Number:</b>	8886899

<b>Property Type</b>	<b>Number</b>
<b>Patent Number:</b>	9063825
<b>Patent Number:</b>	9135215
<b>Patent Number:</b>	9479431
<b>Patent Number:</b>	8934347
<b>Patent Number:</b>	9507745
<b>Patent Number:</b>	8572353
<b>Patent Number:</b>	9213652
<b>Patent Number:</b>	8539155
<b>Patent Number:</b>	8521963
<b>Patent Number:</b>	8799624
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<b>Patent Number:</b>	6356573
<b>Patent Number:</b>	6368890
<b>Patent Number:</b>	6678292
<b>Patent Number:</b>	6555407
<b>Patent Number:</b>	6816521
<b>Application Number:</b>	15048924
<b>Application Number:</b>	15072154
<b>Application Number:</b>	62304348
<b>Application Number:</b>	15137048
<b>Application Number:</b>	15058262
<b>Application Number:</b>	15092637
<b>Application Number:</b>	15146013

<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15087562
<b>Application Number:</b>	15063527
<b>Application Number:</b>	15154945
<b>Application Number:</b>	62304355
<b>Application Number:</b>	15149134
<b>Application Number:</b>	15145983
<b>Application Number:</b>	15064108
<b>Application Number:</b>	15145848
<b>Application Number:</b>	15082313
<b>Application Number:</b>	15051750
<b>Application Number:</b>	15077945
<b>Application Number:</b>	15161316
<b>Application Number:</b>	15086990
<b>Application Number:</b>	15075158
<b>Application Number:</b>	15152077
<b>Application Number:</b>	15081969
<b>Application Number:</b>	15086095
<b>Application Number:</b>	62336763
<b>Application Number:</b>	15075936
<b>Application Number:</b>	15050480
<b>Application Number:</b>	15197066
<b>Application Number:</b>	15202590
<b>Application Number:</b>	15168118
<b>Application Number:</b>	15177348
<b>Application Number:</b>	15186897
<b>Application Number:</b>	62359225
<b>Application Number:</b>	15181436
<b>Application Number:</b>	15195538
<b>Application Number:</b>	15196088
<b>Application Number:</b>	15182635
<b>Application Number:</b>	15199105
<b>Application Number:</b>	15194585
<b>Application Number:</b>	62362072
<b>Application Number:</b>	62356570
<b>Application Number:</b>	15186557
<b>Application Number:</b>	15186477
<b>Application Number:</b>	15250953
<b>Application Number:</b>	15250999

<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	62377616
<b>Application Number:</b>	15257957
<b>Application Number:</b>	15276823
<b>Application Number:</b>	15278143
<b>Application Number:</b>	15289176
<b>Application Number:</b>	15280266
<b>Application Number:</b>	15279002
<b>Application Number:</b>	15218028
<b>Application Number:</b>	15225859
<b>Application Number:</b>	15356588
<b>Application Number:</b>	15391886
<b>Application Number:</b>	62427162
<b>Application Number:</b>	15394005
<b>Application Number:</b>	15395260
<b>Application Number:</b>	15395210
<b>Application Number:</b>	15368721
<b>Application Number:</b>	15350127
<b>Application Number:</b>	15390558
<b>Application Number:</b>	15390504
<b>Application Number:</b>	15391894
<b>Application Number:</b>	15402247
<b>Application Number:</b>	62426644
<b>Application Number:</b>	62426240
<b>Application Number:</b>	15401042
<b>Application Number:</b>	15387958
<b>Application Number:</b>	15390560
<b>Application Number:</b>	62426241
<b>Application Number:</b>	15387718
<b>Application Number:</b>	15393284
<b>Application Number:</b>	15361528
<b>Application Number:</b>	15382481
<b>Application Number:</b>	14675935
<b>Application Number:</b>	13487361
<b>Application Number:</b>	14208405
<b>Application Number:</b>	14609660
<b>Application Number:</b>	14450476
<b>Application Number:</b>	14747044
<b>Application Number:</b>	14967665

Property Type	Number
Application Number:	14450527
Application Number:	14286000
Application Number:	12582443
Application Number:	14246213
Application Number:	14508027
Application Number:	14636296
Application Number:	15143754
Application Number:	15083408
Application Number:	15201754
Application Number:	15244171
Application Number:	62341108
Application Number:	15187109
Application Number:	15162487
Application Number:	15273615
Application Number:	29573801

**CORRESPONDENCE DATA**

**Fax Number:** (650)251-5002

*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:** (650) 251-5147

**Email:** jnull@stblaw.com

**Correspondent Name:** ALEX MOSER

**Address Line 1:** 2475 HANOVER STREET

**Address Line 4:** PALO ALTO, CALIFORNIA 94304

<b>ATTORNEY DOCKET NUMBER:</b>	509265/1950
<b>NAME OF SUBMITTER:</b>	J. JASON MULL
<b>SIGNATURE:</b>	/J. Jason Mull/
<b>DATE SIGNED:</b>	06/23/2017

**Total Attachments: 14**

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PATENT SECURITY AGREEMENT dated as of June 19, 2017 (this “Agreement”), among Mellanox Technologies, Ltd., Mellanox Technologies TLV Ltd. and Mellanox Technologies Silicon Photonics Inc. (each a “Grantor” and collectively, the “Grantors”) and JPMorgan Chase Bank, N.A. (“JPMCB”), as Administrative Agent.

Reference is made to (a) the Credit Agreement dated as of February 22, 2016, (as amended, restated, supplemented or otherwise modified from time to time, the “Credit Agreement”), among Mellanox Technologies, Ltd. and Mellanox Technologies, Inc. (the “Borrowers”), the Lenders from time to time party thereto and JPMCB, as Administrative Agent, (b) the Collateral Agreement dated as of February 22, 2016 (as amended, restated, supplemented or otherwise modified from time to time, the “Collateral Agreement”), among the Borrowers, the Subsidiary Loan Parties from time to time party thereto and JPMCB, as Administrative Agent and (c) Supplement No. 1 to the Collateral Agreement, dated as of September 30, 2016, whereby EZchip Semiconductor, Inc. became a Subsidiary Loan Party and a Grantor under the Collateral Agreement with the same force and effect as if originally named therein as such. The Lenders have agreed to extend credit to the Borrowers subject to the terms and conditions set forth in the Credit Agreement. The obligations of the Lenders to extend such credit are conditioned upon, among other things, the execution and delivery of this Agreement. The Subsidiary Loan Parties party hereto are Affiliates of the Borrowers, will derive substantial benefits from the extension of credit to the Borrowers pursuant to the Credit Agreement and are willing to execute and deliver this Agreement in order to induce the Lenders to extend such credit. Accordingly, the parties hereto agree as follows:

SECTION 1. Terms. Each capitalized term used but not otherwise defined herein shall have the meaning specified in the Credit Agreement or the Collateral Agreement, as applicable. The rules of construction specified in Section 1.03 of the Credit Agreement also apply to this Agreement, *mutatis mutandis*. Notwithstanding anything contained in this Agreement to the contrary: (a) with respect to the security interests granted by the Israeli Grantors hereunder, this Agreement and each of the terms hereof relating to Patent Collateral shall be limited solely to Patent Collateral located in the United States of America or governed by the laws of the United States of America (including, for the avoidance of doubt, federal laws and state laws); and (b) in respect of Patent Collateral constituting OCS-Funded Know-How, the creation of any security interest over such Patent Collateral and any realization in respect thereof shall be: (i) subject to the OCS Provision (including the Research Law and the OCS approvals dated January 26, 2016 as may be amended from time to time); and (ii) governed by the laws of the State of Israel and subject to the exclusive jurisdiction of the Israeli courts.

SECTION 2. Grant of Security Interest. As security for the payment in full of the Obligations, each Grantor pursuant to the Collateral Agreement did, and hereby does, grant to the Administrative Agent, its successors and assigns, for the benefit of the Secured Parties, a security interest in all right, title and interest in, to and under any and all of the following assets now owned or at any time hereafter acquired by such Grantor or in, to or under which such Grantor now has or at any time hereafter may acquire any right, title or interest (collectively, the “Patent Collateral”):



(a) all letters patent of the United States of America or the equivalent thereof in any other country, all registrations and recordings thereof and all applications for letters patent of the United States of America or the equivalent thereof in any other country or any political subdivision thereof, including registrations, recordings and pending applications in the United States Patent and Trademark Office, including, in the case of any Grantor, any of the foregoing set forth under its name on Schedule I (as limited by Section 1 above with respect to the security interests granted by the Israeli Grantors hereunder); and

(b) all reissues, continuations, divisionals, continuations-in-part, reexaminations, supplemental examinations, *inter partes* reviews, renewals, adjustments or extensions thereof, and the inventions disclosed or claimed therein, including the right to make, have made, use, sell, offer to sell, import or export the inventions disclosed or claimed therein.

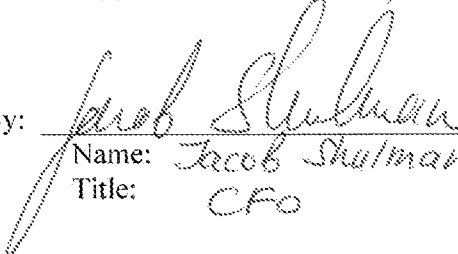
SECTION 3. Collateral Agreement. The security interests granted to the Administrative Agent herein are granted in furtherance, and not in limitation of, the security interests granted to the Administrative Agent pursuant to the Collateral Agreement. Each Grantor hereby acknowledges and affirms that the rights and remedies of the Administrative Agent with respect to the Patent Collateral are more fully set forth in the Collateral Agreement, the terms and provisions of which are hereby incorporated herein by reference as if fully set forth herein. In the event of any conflict between the terms of this Agreement and the Collateral Agreement, the terms of the Collateral Agreement shall govern.

SECTION 4. Counterparts. This Agreement may be executed in counterparts (and by different parties hereto on different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page of this Agreement by facsimile or other electronic imaging shall be effective as delivery of a manually executed counterpart of this Agreement.

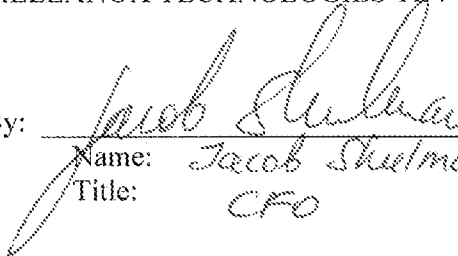
[*Signature Pages Follow*]

IN WITNESS WHEREOF, the parties hereto have duly executed this Agreement as of the day and year first above written.

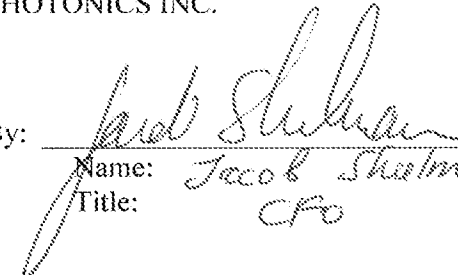
MELLANOX TECHNOLOGIES, LTD.

By:   
Name: Jacob Shulman  
Title: CFO


MELLANOX TECHNOLOGIES TLV LTD.

By:   
Name: Jacob Shulman  
Title: CFO

MELLANOX TECHNOLOGIES SILICON  
PHOTONICS INC.

By:   
Name: Jacob Shulman  
Title: CFO

JPMORGAN CHASE BANK, N.A. as  
Administrative Agent for the Lenders

By:   
Name: **Bruce S. Borden**  
Title: **Executive Director**

## SCHEDULE I

### U.S. Patent Registrations and Applications

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Mellanox Technologies Silicon Photonics Inc.	Reducing power requirements for optical links	15/048,924	Pending
Mellanox Technologies Silicon Photonics Inc.	Temperature control of components on an optical device	15/072,154	Pending
Mellanox Technologies Ltd.	Atomic access to object pool over RDMA transport network	62/304,348	Pending
Mellanox Technologies Ltd.	Compact Optical Fiber Splitters	15/137,048	Pending
Mellanox Technologies Ltd.	Control of Persistent Memory via a Computer Bus	15/058,262	Pending
Mellanox Technologies Ltd.	Control of Communication Network Performance by Varying Active Optical Cable Parameters	15/092,637	Pending
Mellanox Technologies Ltd.	Efficient transport flow processing on an accelerator	15/146,013	Pending
Mellanox Technologies Ltd.	Electro-optic transceiver module with wavelength compensation	15/087,562	Pending
Mellanox Technologies Ltd.	Flexible buffer allocation in a network switch	15/063,527	Pending
Mellanox Technologies Ltd.	Host bus access by add-on devices via a network interface controller	15/154,945	Pending
Mellanox Technologies Ltd.	In-node aggregation and disaggregation of MPI all2all and alltoallv collectives	62/304,355	Pending
Mellanox Technologies Ltd.	Interconnection Between Silicon Photonics Devices and Optical Fibers	15/149,134	Pending
Mellanox Technologies Ltd.	Network-based computational accelerator	15/145,983	Pending
Mellanox Technologies Ltd.	Optoelectronic transducer with integrally mounted thermoelectric cooler	15/064,108	Pending
Mellanox Technologies Ltd.	Packet steering	15/145,848	Pending
Mellanox Technologies Ltd.	Redundant and reconfigurable transceiver	15/082,313	Pending
Mellanox Technologies Ltd.	Remote host management over a network	15/051,750	Pending
Mellanox Technologies Ltd.	Using a single work item to send multiple messages	15/077,945	Pending
Mellanox Technologies Ltd.	Efficient use of buffer space in a network switch	15/161,316	Pending

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Mellanox Technologies Ltd.	Facilitating communication of data packets using credit-based flow control	15/086,990	Pending
Mellanox Technologies Ltd.	Flexible application of congestion control measures	15/075,158	Pending
Mellanox Technologies Ltd.	Forwarding of adaptive routing notifications	15/152,077	Pending
Mellanox Technologies Ltd.	Optimizing buffer allocation for network flow control	15/081,969	Pending
Mellanox Technologies Ltd.	Single Double Cuckoo Hash	15/086,095	Pending
Mellanox Technologies Ltd.	Synchronized network stream switching by classifying flow attributes	62/336,763	Pending
Mellanox Technologies Ltd.	Systems and methods for distributed storage of data across multiple hash tables	15/075,936	Pending
Mellanox Technologies Ltd.	Unicast forwarding of adaptive-routing notifications	15/050,480	Pending
Mellanox Technologies Ltd.	Laser chip with multiple outputs on common side	15/197,066	pending
Mellanox Technologies Ltd.	Efficient peer-to-peer entity ID-based access control	15/202,590	pending
Mellanox Technologies Ltd.	End-to-end enhanced reliable datagram transport	15/168,118	pending
Mellanox Technologies Ltd.	Enforcing transaction order in peer-to-peer interactions	15/177,348	pending
Mellanox Technologies Ltd.	Field replaceable modular optical interconnect unit with optical module for datacenter switch system	15/186,897	pending
Mellanox Technologies Ltd.	Integrating silicon photonics and laser dies using flip-chip technology	62/359,225	pending
Mellanox Technologies Ltd.	Network interface controller with direct connection to host memory	15/181,436	pending
Mellanox Technologies Ltd.	Opto-mechanical coupler	15/195,538	pending
Mellanox Technologies Ltd.	Selective acknowledgment of RDMA packag	15/196,088	pending
Mellanox Technologies Ltd.	Self-adjusting cooling module	15/182,635	pending
Mellanox Technologies Ltd.	Transducer reliability testing	15/199,105	pending
Mellanox Technologies Ltd.	Adaptive flow prioritization	15/194,585	pending
Mellanox Technologies	Credit Loop Deadlock Detection	62/362,072	pending

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Ltd.	and Recovery in Arbitrary Topology Networks		
Mellanox Technologies Ltd.	Estimated counting of distinct flows	62/356,570	pending
Mellanox Technologies Ltd.	Generating high-speed test traffic in a network switch	15/186,557	pending
Mellanox Technologies Ltd.	IP Route Caching with Two Search Stages on Prefix Length	15/186,477	pending
Mellanox Technologies Ltd.	Aggregation Protocol	15/250,953	pending
Mellanox Technologies Ltd.	SILICON PHOTONICS CONNECTOR	15/250,999	pending
Mellanox Technologies Ltd.	Using Hardware Gather-Scatter Capabilities to Optimize MPI All-to-All	62/377,616	pending
Mellanox Technologies Ltd.	EFFICIENT MATCHING OF TCAM RULES USING HASH TABLES IN RAM	15/257,957	pending
Mellanox Technologies Ltd.	Network Monitoring Using Selective Mirroring	15/276,823	pending
Mellanox Technologies Ltd.	Hardware-based congestion control for TCP traffic	15/278,143	Pending
Mellanox Technologies Ltd.	Dynamic optimization for IP forwarding performance	15/289,176	pending
Mellanox Technologies Ltd.	Opto-mechanical couple	15/280,266	pending
Mellanox Technologies Ltd.	power Supply Voltage Monitoring and High-Resolution Adaptive Clock Stretching Circuit	15/279,002	pending
Mellanox Technologies TLV Ltd.	Scalable deadlock-free deterministic minimal-path routing for dragonfly networks	15/218,028	pending
Mellanox Technologies TLV Ltd.	Routable Quantized Congestion Notification (R-QCN)	15/225,859	pending
Mellanox Technologies Ltd.	Simplified packet routing	15/356,588	pending
Mellanox Technologies Ltd.	Hardware Device Safe Mode	15/391,886	pending
Mellanox Technologies Ltd.	Distributed Deep Neural Network Inference	62/427,162	pending
Mellanox Technologies Ltd.	Switch System with a Modular Detachable Front Panel	15/394,005	pending
Mellanox Technologies Ltd.	Length Determined AOC	15/395,260	pending
Mellanox Technologies Ltd.	Adaptive Datacenter Connector - Backshell with High Thermal Performance	15/395,210	pending

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Mellanox Technologies Ltd.	FAN-OUT JOINT FOR FIBEROPTIC CABLES	15/368,721	pending
Mellanox Technologies Ltd.	Cable Backplane	15/350,127	pending
Mellanox Technologies Ltd.	DISTRIBUTION OF MESSAGES TO QUEUES IN A DISTRIBUTED COMPUTING ENVIRONMENT	15/390,558	pending
Mellanox Technologies Ltd.	Automated control of descriptor type for packet transmission	15/390,504	pending
Mellanox Technologies Ltd.	Utilizing Management Network for Secured Configuration and Platform Management	15/391,894	pending
Mellanox Technologies Ltd.	Integrated Circuit Inductor	15/402,247	pending
Mellanox Technologies TLV Ltd.	Converting a Switch to a Packet Analyzer/Generator	62/426,644	pending
Mellanox Technologies TLV Ltd.	Coordinate Assignment in Pristine Partial Tori and Mesh Networks	62/426,240	pending
Mellanox Technologies TLV Ltd.	Fabric Wise Width Reduction	15/401,042	pending
Mellanox Technologies TLV Ltd.	A Method For Finding Logic Equivalence Between RTL Wires and Post Synthesis (Netlist) Nets	15/387,958	pending
Mellanox Technologies TLV Ltd.	Conditional mirroring; Multi-stage selective mirroring	15/390,560	pending
Mellanox Technologies TLV Ltd.	DEADLOCK-FREE ROUTING IN LOSSLESS MULTIDIMENSIONAL CARTESIAN TOPOLOGIES WITH MINIMAL NUMBER OF VIRTUAL BUFFERS	62/426,241	pending
Mellanox Technologies TLV Ltd.	Adaptive routing based on flow-control credits	15/387,718	pending
Mellanox Technologies TLV Ltd.	DEADLOCK-FREE ROUTING IN LOSSLESS MULTIDIMENSIONAL CARTESIAN TOPOLOGIES WITH MINIMAL NUMBER OF VIRTUAL BUFFERS	15/393,284	pending
Mellanox Technologies TLV Ltd.	Low Complexity Measurement of Packet Traversal Time in Network Element	15/361,528	pending
Mellanox Technologies Silicon Photonics Inc.	CONSTRUCTION OF INTEGRATED MODE TRANSFORMERS	15/382,481	pending
Mellanox Technologies	Caching in multicore and	14/047,128	9514050

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Inc.	multiprocessor architectures		
Mellanox Technologies Ltd.	Buffering data in a parallel processing environment	11/313,900	7668979
Mellanox Technologies Ltd.	Managing data flows in a parallel processing environment	11/314,254	7814242
Mellanox Technologies Ltd.	Transferring data in a parallel processing environment	11/314,861	7461236
Mellanox Technologies Ltd.	Flow control in a parallel processing environment	11/313,895	8018849
Mellanox Technologies Ltd.	Managing buffer storage in a parallel processing environment	11/314,270	7853774
Mellanox Technologies Ltd.	Flow control in a parallel processing environment	13/229,294	8635378
Mellanox Technologies Ltd.	Flow control in a parallel processing environment	14/159,608	9329798
Mellanox Technologies Ltd.	Managing data in a parallel processing environment	11/404,958	7577820
Mellanox Technologies Ltd.	Managing data forwarded between processors in a parallel processing environment based on operations associated with instructions issued by the processors	12/110,871	7734894
Mellanox Technologies Ltd.	Managing data provided to switches in a parallel processing environment	12/110,956	8127111
Mellanox Technologies Ltd.	Pattern matching in a multiprocessor environment with finite state automaton transitions based on an order of vectors in a state transition table	11/564,694	7805392
Mellanox Technologies Ltd.	Pattern matching in a multiprocessor environment	12/890,996	8065259
Mellanox Technologies Ltd.	Pattern matching in a multiprocessor environment with finite state automaton transitions based on an order of vectors in a state transition table	13/188,580	8086554
Mellanox Technologies Ltd.	Programming in a multiprocessor environment	11/564,723	9009660
Mellanox Technologies Ltd.	Programming in a multiprocessor environment	14/675,935	pending
Mellanox Technologies Ltd.	Managing memory in a parallel processing environment	11/404,187	7624248
Mellanox Technologies Ltd.	Coupling data in a parallel processing environment	11/404,658	7636835
Mellanox Technologies	Coupling data for interrupt	12/036,918	8190855



<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Ltd.	processing in a parallel processing environment		
Mellanox Technologies Ltd.	Coupling integrated circuits in a parallel processing environment	11/404,409	7539845
Mellanox Technologies Ltd.	Protection in a parallel processing environment using access information associated with each switch to prevent data from being forwarded outside a plurality of tiles	11/404,461	7774579
Mellanox Technologies Ltd.	Directing data in a parallel processing environment	11/404,281	7793074
Mellanox Technologies Ltd.	Managing set associative cache memory according to entry type	11/404,654	7461210
Mellanox Technologies Ltd.	Managing memory access in a parallel processing environment	11/404,655	7805577
Mellanox Technologies Ltd.	Managing cache memory in a parallel processing environment	11/404,641	7882307
Mellanox Technologies Ltd.	Managing cache memory in a parallel processing environment	12/983,368	8200901
Mellanox Technologies Ltd.	Managing cache memory in a parallel processing environment	13/491,413	8631205
Mellanox Technologies Ltd.	Managing cache memory in a parallel processing environment	14/154,277	9298618
Mellanox Technologies Ltd.	Mapping memory in a parallel processing environment	11/404,207	7620791
Mellanox Technologies Ltd.	Pattern matching	11/753,315	7877401
Mellanox Technologies Ltd.	Pattern matching	12/977,565	8620940
Mellanox Technologies Ltd.	Packet processing in a parallel processing environment	11/753,325	8194690
Mellanox Technologies Ltd.	Packet processing in a parallel processing environment	13/487,361	pending
Mellanox Technologies Ltd.	Caching in multicore and multiprocessor architectures	11/754,118	7805575
Mellanox Technologies Ltd.	Transferring and storing data in multicore and multiprocessor architectures	13/211,065	8677081
Mellanox Technologies Ltd.	Cache coherency in multiprocessor system	14/208,405	pending
Mellanox Technologies Ltd.	Compiling code for parallel processing architectures based on control flow	12/028,002	8250555
Mellanox Technologies Ltd.	Compiling code for parallel processing architectures based on control flow	13/588,141	8949806

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Mellanox Technologies Ltd.	Compiling code for parallel processing architectures based on control flow	14/609,660	pending
Mellanox Technologies Ltd.	Caching in multicore and multiprocessor architectures	11/754,062	7853754
Mellanox Technologies Ltd.	Caching in multicore and multiprocessor architectures	12/958,920	8112581
Mellanox Technologies Ltd.	Caching in multicore and multiprocessor architectures	11/754,162	7853755
Mellanox Technologies Ltd.	Caching in multicore and multiprocessor architectures	12/966,686	7987321
Mellanox Technologies Ltd.	Caching in multicore and multiprocessor architectures	13/190,035	8234451
Mellanox Technologies Ltd.	Caching in multicore and multiprocessor architectures	13/553,884	8560780
Mellanox Technologies Ltd.	Caching in multicore and multiprocessor architectures	11/754,016	7853752
Mellanox Technologies Ltd.	Distributing parallelism for parallel processing architectures	12/028,003	8250556
Mellanox Technologies Ltd.	Communication scheduling for parallel processing architectures	12/028,005	8291400
Mellanox Technologies Ltd.	Memory access assignment for parallel processing architectures	12/028,007	8181168
Mellanox Technologies Ltd.	Configuring routing in mesh networks	12/169,436	8050256
Mellanox Technologies Ltd.	Configuring routing in mesh networks	12/169,442	8045546
Mellanox Technologies Ltd.	Configuring routing in mesh networks	12/169,456	8151088
Mellanox Technologies Ltd.	Configuring routing in mesh networks	13/278,663	8737392
Mellanox Technologies Ltd.	Managing shared resource in an operating system by distributing reference to object and setting protection levels	12/885,957	8799914
Mellanox Technologies Ltd.	Managing shared resource in an operating system by distributing reference to object and setting protection levels	14/450,476	pending
Mellanox Technologies Ltd.	Low-overhead operating systems	12/885,978	8327187
Mellanox Technologies Ltd.	Managing cache coherence	12/885,994	8392661
Mellanox Technologies Ltd.	Supporting secondary atomic operations using primary atomic operations	12/886,013	8549249
Mellanox Technologies	Managing memory requests based	12/886,050	8886899

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Ltd.	on priority		
Mellanox Technologies Ltd.	Memory controller load balancing with configurable striping domains	12/886,136	9063825
Mellanox Technologies Ltd.	Memory controller load balancing with configurable striping domains	14/747,044	pending
Mellanox Technologies Ltd.	Route prediction in packet switched networks	12/886,163	9135215
Mellanox Technologies Ltd.	Route prediction in packet switched networks	14/854,286	9479431
Mellanox Technologies Ltd.	Low latency dynamic route selection	12/886,346	8934347
Mellanox Technologies Ltd.	Low latency dynamic route selection	14/594,299	9507745
Mellanox Technologies Ltd.	Condensed router headers with low latency output port calculation	12/886,366	8572353
Mellanox Technologies Ltd.	Managing cache access and streaming data	12/886,365	9213652
Mellanox Technologies Ltd.	Managing cache access and streaming data	14/967,665	pending
Mellanox Technologies Ltd.	Managing home cache assignment	12/886,372	8539155
Mellanox Technologies Ltd.	Managing cache coherence	12/886,376	8521963
Mellanox Technologies Ltd.	Configurable device interfaces	12/886,382	8799624
Mellanox Technologies Ltd.	Configurable device interfaces	14/450,527	pending
Mellanox Technologies Ltd.	Memory-mapped data transfers	12/886,386	8612711
Mellanox Technologies Ltd.	Computing in parallel processing environments	13/280,927	8738860
Mellanox Technologies Ltd.	Computing in parallel processing environments	14/286,000	pending
Mellanox Technologies Ltd.	High Performance, Scalable Multi Chip Interconnect	13/789,801	9424228
Mellanox Technologies Ltd.	Configuring routing in mesh networks	13/278,676	9384165
Mellanox Technologies Ltd.	Protection in a parallel processing environment	12/582,443	pending
Mellanox Technologies Ltd.	Global socket to socket cache coherence architecture	14/246,213	pending
Mellanox Technologies Ltd.	Multi-core processor using three-dimensional integration	14/508,027	pending

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Mellanox Technologies Ltd.	Computing in parallel processing environments	14/636,296	pending
Mellanox Technologies Ltd.	High-performance network processor	09/609,221	6778534
Mellanox Technologies Ltd.	Wildcards in radix- search tree structures	09/753,690	6594655
Mellanox Technologies Ltd.	Deterministic search algorithm	09/593,397	6625612
Mellanox Technologies Ltd.	Look-ahead tree structure	09/616,877	6532457
Mellanox Technologies Ltd.	Flow control in a parallel processing environment	15/143,754	pending
Mellanox Technologies Ltd.	Managing cache memory in a parallel processing environment	15/083,408	pending
Mellanox Technologies Ltd.	Configuring routing in mesh networks	15/201,754	pending
Mellanox Technologies Ltd.	HIGH PERFORMANCE, SCALABLE MULTI CHIP INTERCONNECT	15/244,171	pending
Mellanox Technologies Ltd.	Dynamically-tuned Interrupt Moderation	62/341,108	pending
Mellanox Technologies Ltd.	Printed Circuit Board Assembly with a Photonic Integrated Circuit for an Electro-Optical Interface	15/187,109	pending
Mellanox Technologies Ltd.	ELECTRIC NANODEVICE AND METHOD OF MANUFACTURING SAME	12/811,710	8563380
Mellanox Technologies Ltd.	HIGH SPEED LASING DEVICE	13/489,017	8798112
Mellanox Technologies Ltd.	VCSEL with monitor emission through high reflectivity mirror	09/438,955	6879611
Mellanox Technologies Ltd.	Transverse mode and polarization control of surface emitting lasers through the formation of a dielectric stack	10/242,070	6885690
Mellanox Technologies Ltd.	Optical Source with Monitor	09/103723	6111903
Mellanox Technologies Ltd.	Field Modulated Vertical Cavity Surface Emitting Laser with Internal Optical Pumping	09/114142	6285704
Mellanox Technologies Ltd.	High Powered Laser Diode	09/114143	6163556
Mellanox Technologies Ltd.	Pre-Fusion Oxidized and Wafer	09/832112	6668005
Mellanox Technologies Ltd.	Vertical Cavity Surface Emitting Laser	09/235302	6356573

<u>Loan Party</u>	<u>Title</u>	<u>Application Number</u>	<u>Grant Number</u>
Mellanox Technologies Ltd.	Top Contact VCSEL With Monitor	09/506895	6368890
Mellanox Technologies Ltd.	Top Contact VCSEL With Monitor	10/071043	6678292
Mellanox Technologies Ltd.	Method and Apparatus for the Controlled Oxidation of Materials	09/693233	6555407
Mellanox Technologies Ltd.	Photonic Device with Monitor	10/431880	6816521
Mellanox Technologies Silicon Photonics Inc.	Temperature control of components on an optical device	15/162,487	pending
Mellanox Technologies Silicon Photonics Inc.	RESOLUTION OF MODE HOPPING IN THE OUTPUT OF LASER CAVITIES	PCT/US16/48929	pending
Mellanox Technologies Silicon Photonics Inc.	EDGE CONSTRUCTION ON OPTICAL DEVICES	15/273615	pending
Mellanox Technologies Ltd.	EDGE RETAINER FOR A PRINTED CIRCUIT CARD	29/573,801	pending