

- a. The use of Marvell's MNP-type chips and simulators in the United States in certain normal operating modes directly infringes the Asserted Claims of the CMU Patents. *See* Dkt. 762 at Questions 1-2 and 6-7.
- b. The use of Marvell's NLD-type chips and simulator in the United States in certain normal operating modes directly infringes the Asserted Claims of the CMU Patents. *See id.* at Questions 3-4 and 8-9.
- c. The use of Marvell's KavcicViterbi Simulator in the United States directly infringed the Asserted Claims of the CMU Patents. *See id.* at Questions 5 and 10.
- d. Marvell induced infringement in the United States of the Asserted Claims of the CMU Patents with its MNP-type chips and NLD-type chips. *See id.* at Questions 11 and 13.
- e. Marvell's sales of its MNP-type chips and NLD-type chips contributed to the infringement in the United States of the Asserted Claims of the CMU Patents. *See id.* at Questions 12 and 14.
- f. Marvell did not prove by clear and convincing evidence that the Asserted Claims of CMU Patents are invalid. *See id.* at Questions 15 and 16.
- g. Compensatory damages for Marvell's unlicensed use of the methods of Claim 4 of '839 patent and Claim 2 of the '180 patent for the period of March 6, 2009 through July 28, 2012 were \$1,169,140,271. *See id.* at Question 17.

2. Under 35 U.S.C. § 283, courts "may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable."

3. In *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006), the Supreme Court held that a plaintiff seeking a permanent injunction in a patent case, like CMU here, must satisfy the traditional four-factor test by showing: (i) that it has suffered an irreparable injury; (ii) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (iii) that considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (iv) that the public interest would not be disserved by a permanent injunction. *Id.* at 391.

4. All four factors in this case favor a permanent injunction. CMU suffers from irreparable harm from Marvell's continued direct and indirect infringement that cannot be remedied by damages or an ongoing royalty. Further, the balance of equities and the public interest favor the protection of CMU's patent rights.

5. The specific terms of the permanent injunction entered against Marvell should include the terms set forth in the attached Proposed Order.

6. In light of the jury's determination that Marvell's uses of the methods of the Asserted Claims of the CMU Patents in the United States result in Marvell's worldwide sales, and the fact that Marvell's post-verdict continued infringing uses of those methods are willful, Marvell should pay to CMU an ongoing royalty of between \$0.50 and \$1.50 per chip for every MNP-type and NLD-type chip sold by Marvell, anywhere in the world, during the time period starting from January 14, 2013 and extending until such time as the permanent injunction goes into effect, and during any time period that the injunction is stayed or otherwise not in effect, and until April 3, 2018.

7. For every MNP-type and NLD-type chip sold by Marvell, anywhere in the world, during the time period from July 29, 2012 (Marvell produced sales data only through July 28, 2012) to January 14, 2013 (the date when the Court entered judgment), Marvell should pay to

CMU supplemental damages equal to the royalty found by the jury – fifty (50) cents per chip.

These supplemental damages should be enhanced subject to 35 U.S.C. § 284 and Marvell should also pay prejudgment interest on these supplemental damages.

WHEREFORE, CMU respectfully requests that this Court enter the attached Proposed Order.

Respectfully submitted,

Dated: February 11, 2013

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CERTIFICATE OF SERVICE

I hereby certify that on February 11, 2013 the foregoing was filed electronically. Notice of this filing will be sent to all parties by operation of the Court's electronic filing system.

Parties may access this filing through the Court's system.

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**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF PENNSYLVANIA**

CARNEGIE MELLON UNIVERSITY,)	
)	
Plaintiff,)	
v.)	Civil Action No. 2:09-cv-00290-NBF
)	
MARVELL TECHNOLOGY GROUP, LTD.,)	
and MARVELL SEMICONDUCTOR, INC.,)	
)	
Defendants.)	

**[PROPOSED] ORDER OF PERMANENT INJUNCTION,
POST-JUDGMENT ROYALTIES, AND SUPPLEMENTAL DAMAGES**

AND NOW, this ____ day of _____, 2013, upon consideration of Plaintiff Carnegie Mellon University’s (“CMU”) Motion for a Permanent Injunction, Post-Judgment Royalties, and Supplemental Damages, Dkt. ____, in this patent infringement action against Marvell Technology Group, Ltd. (“MTGL”) and Marvell Semiconductor, Inc. (“MSI”) (collectively, “Marvell”), it is hereby ORDERED that Plaintiff’s Motion is GRANTED, and in that connection:

WHEREAS, a jury trial was held in the above-captioned matter from November 26, 2012 to December 26, 2012.

WHEREAS, the jury found, among other things:

- That use of Marvell’s MNP-type chips and simulators in the United States in certain normal operating modes directly infringes claim 4 of the U.S. Patent 6,201,839 (“the ‘839 Patent”) and claim 2 of U.S. Patent 6,438,180 (“the ‘180 Patent”) (collectively “the Asserted Claims of the CMU Patents”);

- That use of Marvell's NLD-type chips and simulator in the United States in certain normal operating modes directly infringes the Asserted Claims of the CMU Patents;
- That use of Marvell's KavcicViterbi Simulator in the United States directly infringed the Asserted Claims of the CMU Patents;
- That Marvell induced infringement in the United States of the Asserted Claims of the CMU Patents with its MNP-type chips;
- That Marvell induced infringement in the United States of the Asserted Claims of the CMU Patents with its NLD-type chips;
- That Marvell's sales of its MNP-type chips contributed to the infringement in the United States of the Asserted Claims of the CMU Patents;
- That Marvell's sales of its NLD-type chips contributed to the infringement in the United States of the Asserted Claims of the CMU Patents with its NLD-type chips;
- That Marvell did not prove by clear and convincing evidence that the Asserted Claims of CMU Patents are invalid; and
- Compensatory damages for Marvell's unlicensed use of the methods of Claim 4 of '839 patent and Claim 2 of the '180 patent for the period of March 6, 2009 through July 28, 2012 were \$1,169,140,271.

Dkt. 762.

WHEREAS, the jury awarded damages to CMU based on sales data produced by Marvell for sales of the MNP-type and NLD-type chips through July 28, 2012.

WHEREAS, based on the submission in connection with this Motion and the record in this action, the Court concludes that CMU has shown that it would suffer from irreparable harm from Marvell's continued direct and indirect infringement, and that the balance of equities and public interest favor the protection of CMU's patent rights.

NOW THEREFORE, having considered the entire record in this action, the verdict of the jury and the papers submitted by parties, and good cause having been shown,

IT IS HEREBY ORDERED:

1. Starting on the date of _____, 2013 and extending through until April 3, 2018 (the expiration date of the CMU Patents), both Marvell Technology Group, Ltd. ("MTGL") and Marvell Semiconductor, Inc. ("MSI"), and their respective officers, directors, agents, servants, employees, attorneys, subsidiaries, and those persons acting in concert or participation with any of them who receive actual notice hereof (collectively "the Enjoined Parties"), are hereby permanently restrained and enjoined, pursuant to 35 U.S.C. § 283 and Fed. R. Civ. P. 65(d), from directly infringing under 35 U.S.C. § 271(a), contributing to the infringement of under 35 U.S.C. § 271(c), or inducing the infringement of under 35 U.S.C. § 271(b), any of the '839 Patent and the '180 Patent. In particular, during the time period that this injunction is applicable, the Enjoined Parties are permanently restrained and enjoined from, among other things:

A. Operating or otherwise using in the United States the MNP-type and NLD-type chips (as defined below in paragraph 4) in Infringing Modes (as defined below in paragraph 5).

B. Running, executing, or otherwise using the MNP-type and NLD-type simulators in the United States in configurations that simulate an Infringing Mode of an MNP-type or NLD-type chip.

C. Running, executing, or otherwise using the KavcicViterbi simulator in the United States.

D. Providing instructions, anywhere in the world, on how to operate the MNP-type and NLD-type chips in an Infringing Mode for MNP-type and NLD-type chips used or to be used in the United States.

E. Anywhere in the world, facilitating any Marvell customer in any activities that result in said customer operating or otherwise using in the United States the MNP-type and NLD-type chips in Infringing Modes, including operating or otherwise using such chips as part of said customer's "sales cycle" activities in the United States.

F. Anywhere in the world, facilitating any Marvell customer in any activities that result in said customer running, executing, or otherwise using the MNP-type and NLD-type simulators in the United States in configurations that simulate an Infringing Mode of an MNP-type or NLD-type chip.

G. Selling or offering for sale in the United States the MNP-type and NLD-type chips that are used or to be used in the United States in an Infringing Mode.

2. In light of the jury's determination that Marvell's uses of the methods of the Asserted Claims of the CMU Patents in the United States result in Marvell's worldwide sales, and the fact that Marvell's post-verdict continued infringing uses of those methods are willful, Marvell shall pay to CMU an ongoing royalty of \$ _____ per chip for every MNP-type and

NLD-type chip sold by Marvell, anywhere in the world, during the time period starting from January 14, 2013 and extending until such time as the injunction set forth in paragraph 1 above goes into effect, and during any time period that the injunction set forth in paragraph 1 is stayed or otherwise not in effect, and until April 3, 2018 (the date of expiration of the CMU patents). Marvell shall pay this ongoing royalty to CMU quarterly, with payments made in U.S. dollars and according to CMU's payment instructions within fourteen (14) days of the end of each quarter. Concurrent with each quarterly payment, Marvell shall provide a statement to CMU, under the penalty of perjury, that identifies the products on which a royalty is being paid, the number of units sold, and the calculation of the total royalty amount. CMU shall have the right to audit Marvell's sales information on a periodic basis.

3. For every MNP-type and NLD-type chip sold by Marvell, anywhere in the world, during the time period from July 29, 2012 to January 14, 2013, Marvell shall pay to CMU a royalty of fifty (50) cents per chip. Marvell shall pay this royalty to CMU in U.S. dollars according to payment instructions provided by CMU.

4. The MNP-type and NLD-type chips, to which applies the permanent injunction of paragraph 1 above and/or ongoing royalty of paragraph 2 above, include the chips listed in Exhibit A to this Order and any other chip with a feature or features not more than colorably different from any of the infringing feature or features in any of the MNP-type and NLD-type chips.

5. The "Infringing Modes" for the MNP-type and NLD-type chips referred to in paragraph 1 above are, (a) for the MNP-type chips, the MNP or EMNP (as the case may be) is enabled, and (b) for the NLD-type chips, any non-linear mode, such as non-linear modes 1, 2, or

3, where, consistent with Marvell's description of said modes, at a given time instance of the trellis more than one signal sample is used to compute a branch metric value.

Hon. Judge Nora Barry Fischer

EXHIBIT A

The permanent injunction is applicable to the following listed Marvell MNP and NLD-type chips, and any other Marvell chip with a feature or features not more than colorably different from any of the infringing feature or features in any of the MNP-type and NLD-type chips.

MNP-Type Chips

88c5575M	88i5501	88i6605	88i6776
88c7500M	88i5510	88i6611	88i8034
88c3108	88i5531	88i6612	88i8845
88c3188	88i6310	88i6615	88i8846
88c6300	88i6311	88i6632	88i6745M
88c6301	88i6312	88i6633	
88c6310	88i6313	88i6777	
88c6320	88i6314	88i6888	
88c6575M	88i6315	88i6889	
88c6590	88i6321	88i8036	
88c6591	88i6323	88i8037	
88c6592	88i6340	88i6340M	
88c6593	88i6370	88i6717	
88c6594	88i6371	88i6718	
88c6595	88i6380	88i6723	
88c6596	88i6501	88i6724	
88c6600	88i6522	88i6725	
88c6723	88i6523	88i6726	
88c7500P	88i6525	88i6731	
88c6710	88i6526	88i6735	
88c6720	88i6535	88i6736	
88c6721	88i6545	88i6737	
88c6730	88i6550	88i6738	
88c6740	88i6555	88i6740	
88c8800	88i6571	88i6745	
88c8801	88i6603	88i6775	

NLD-Type Chip

88c8820	88i8029	88i9138	88i9012	88i9446
88c8830	88i8038	88i9145	88i9015	88i9447
88c8840	88i8062	88i9146	88i9017	88i1005
88c8900	88i8063	88i1012	88i9018	88i1017
88c8901	88i8530	88i1067	88i9020	88i1038
88c8910	88i8810	88i9305	88i9022	88i1046
88c9000	88i8817	88i9311	88i9025	88i1047
88src9000	88i8822	88i9312	88i9031	88i1048
88c9010	88i8823	88i9317	88i9035	88i1049
88c9100	88i8826	88i9318	88i9045	88i1064
88c9110	88i8827	88i9319	88i9046	88i1065
88c9200	88i8829	88i9321	88i9060	88i1068
88c9210	88i8830	88i9322	88i9205	88i1069
88src9210	88i8831	88i9335	88i9212	88i1149
88src9210	88i8832	88i9346	88i9217	88i1160
88c9199	88i8835	88i9347	88i9222	88i1161
88c9300	88i8838	88i9348	88i9225	88i1248
88c9310	88i8839	88i9405	88i9226	
88c9311	88i9103	88i9411	88i9245	
88c9399	88i9104	88i9412	88i9246	
88c9400	88i9105	88i9421	88i1061	
88c9410	88i9108	88i9422	88i1062	
88c9411	88i9112	88i8912	88i9118	
88c10010	88i9115	88i8922	88i9119	
88c11010	88i9117	88i8925	88i9137	
88src10000	88i9122	88i8945	88i9160	
88src10030	88i9125	88i8946	88i9435	
88src10050	88i9126	88i9010	88i9441	