

EXHIBIT H Part 4

Marvell Has Not Proven Economic Prejudice



Marvell's "[in]action speaks louder than words"

- Marvell introduced at least 51 new NLD chips containing read channels designed **more than one year after the lawsuit began**

Compare 1st Chip Stipulation (Dkt. 194) with 2nd Chip Stipulation (Dkt. 639);
Marvell still selling chips shown in red (Dkt. 837-2 at ¶ 9)

New SOC	Read Channel	Date for Read Channel Design
88i9305 88i9311 88i9312 88i9317 88i9318 88i9319 88i9321 88i9322 88i9335 88i9346 88i9347 88i9348 88i1248	88c9310	March 2010
88i1064	88c9311	March 2010
88i9435	88c9400	March 2010
88i9405 88i9411 88i9412 88i9421 88i9422 88i9441 88i9446 88i9447	88c9410	March 2010
88i1067	88c9411	March 2010
88i1005 88i1038 88i1046 88i1047 88i1048 88i1049	88c10010	March 2010
	88c9300 88c9399 88c9199 88c11010 88src10030 88src10050 88src10000	March 2010
88i1012 88i1065 88i1068 88i1069 88i1017 88i1149 88i1160 88i1161	No disclosure from Marvell as of Oct. 26, 2012	No design spec produced

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Marvell "would not have acted differently" because it could not have acted differently

Technology	Para(s) in Wt Dec.	Testimony at Trial as to when Developed	Citation from Tr: 12/11/12	Relation to MNP Introduction in 2002-03
Programmable targets	22, 24, 25	2000-01	265, 278	Pre-dates MNP
Sync mark	22, 24, 25	2000, but went through 3 generations through 2008	271-72, 278	1 st Gen pre-dates MNP
High Rate RLL	22, 24, 25	Dr. Wu did not testify to a specific date, but DEX-1511.00003, which Dr. Wu used in his direct testimony, shows it as Sept. 2000.	259-264	Pre-dates
3-Interleaved ECC	22, 24, 25	1999	279 (transcript says "three NOV ECC")	Pre-dates
10-bit ECC	22, 24, 25	2000-01	256, 263, 278	Pre-dates
Permutated RLL & ECC	22, 24, 25	DEX-1511.00003, which Dr. Wu used in his direct testimony; shows it as 2000		Pre-dates
Iterative		Started in 1999, but did not produce products until 2008	264 and 269 (started in '99)	Post-dates
Disk Sync Write (DSW)	24, 25	2002-03	263, 279-80	Contemporaneous
10-Top Adaptive FIR	25	1998	279	Pre-dates

Dkt. 826 at Ex. 12

Dr. Cioffi's approach	23	Marvell never developed this approach. Marvell just considered it in the development of the MNP in around 2007. Dr. Cioffi's approach corresponds to Eq. 10 in the CMU patents. Compare D-Demo 1 at 67 (Marvell Opening slides showing Prof. Cioffi's "Trellis Equalizer") and D-Demo 4 at 5M-12 (Prof. McLaughlin cross slides) with Eq. 10 of CMU Patents (P-1, '839 patent at col. 6:30-32). The CMU patents show that Dr. Cioffi's approach is inferior to the CMU patents. See P-1 ('839 patent) at col. 11:30 to col. 13:37 and Figs. 7-13 (Q1 is Dr. Cioffi's approach and Q2 corresponds to the CMU patents). In fact, Dr. Blahut did not identify Dr. Cioffi's approach as a suitable alternative to the CMU patents. See Blahut Report (Dkt. 670) ¶¶ 329-339.	284, 297	Contemporaneous.
4K Sector	23	Dr. Wu did not explicitly testify as to when 4K sector was introduced, but P-1701, which Dr. Wu used in his direct testimony, shows that it was not introduced until 2007. Consistent with this, Dr. Sunardja testified that 4K sector was not installed until six years after the MNP.	P-1701 at p. 2 105-106	Post-dates
Zone Servo	23	2008	279	Post-dates

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Marvell “would not have acted differently” because it could not have acted differently

In 2007 and 2008 when no one was looking, Marvell told itself the truth about the MNP and NLD technology

From: Gregory Bent
Sent: Tuesday, February 6, 2007 9:28 AM
To: Alex Nazari <anazari@marvell.com>
Subject: RE: ECC setting

MNP or NLV is a must

If I remember correctly, you have sent Samsung a report on AECC performance in the past. This report has plots of MNP+PECC vs. MNP+AECC. We did not do comparison with linear Viterbi since now days the drives are dominated by media noise, and MNP or NLV is a must. I will try to dig up some slides on NLV performance. But basically, everything is the same as with MNP. The AECC algorithm has not changed, we just switch the source of soft info (from MNP to NLV).

Bets, greg

P-607

From: Peggy Fang <pfang@marvell.com>
Sent: Friday, August 8, 2008 4:50 PM

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To all,

I would like to announce the promotion of Zi-Ning Wu to VP of Data Storage Technology. Zi-Ning will be reporting directly to Sehat Sutardja starting today. In his new role, he and his team will be in charge of the development of the Read Channel IP and other IPs for use in the Data Storage Business Unit.

Media Noise Processor (MNP) and Advance ECC (AECC) for our Data Storage products. The introduction of these technologies has helped firmly establish Marvell as the market leader in the HDD IC business.

have been instrumental in the development of the Media Noise Processor (MNP) and Advance ECC (AECC) for our Data Storage products. The introduction of these technologies has helped firmly establish Marvell as the market leader in the HDD IC business.

P-703

Marvell Has Not Proven Evidentiary Prejudice



“Conclusory statements that there are missing witnesses, that witnesses’ memories have lessened, and that there is missing documentary evidence, are not sufficient.”

Meyers v. ASICS Corp., 974 F.2d 1304, 1308 (Fed. Cir. 1992)

▪ Dr. Kavcic emails from 1996-2000

- It is *pure speculation* that Dr. Kavcic, then a graduate student, might have sent an email to Marvell in which he purported to grant rights in an invention he did not own, or to acquiesce in infringement that, as of the latest year Marvell cites (2000), Marvell had not yet committed.

▪ Dr. Moura’s allegedly lost documents from 1996 through 2000

- Marvell now speculates, after trial—and after six days of inventor depositions—that Dr. Moura might have had documents supporting defenses relating to “inventorship, conception, inequitable conduct, enablement, written description, and invalidity.”

Dkt. 854 at 7 n.11

- Marvell abandoned its inequitable conduct, enablement and written description defenses, and never raised inventorship and conception
- Written description and enablement defenses are grounded in the patent itself, not in extrinsic evidence such as Dr. Moura’s documents
- Because infringement and patent issuance did not occur until March 2001, 1996-2000 documents cannot bear on laches, waiver, equitable estoppel or acquiescence

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Meyers v. ASICS Corp., 974 F.2d 1304, 1308 (Fed. Cir. 1992)

■ Testimony of Dr. Kryder and Mr. Wooldridge

- Marvell claims the testimony of these witnesses “go[es] to... the importance and value of the invention and reasonable royalty.”

Dkt. 854 at 7 n. 11

- Marvell ***did not ask*** Dr. Kryder about these topics

- Marvell argued that Mr. Wooldridge’s alleged forgetfulness supported ***Marvell’s*** view of damages – e.g., that CMU knew the patents were of little value

12/20/12 Tr. at 87:20-88:24

Marvell Has Not Proven Evidentiary Prejudice

CMU's Rule 26 Disclosures

Name	Address/Employer	Subject(s)
Dr. Carley	10000 Wilshire Blvd, Suite 1000, Beverly Hills, CA 90210	Information on the development of the technology of the invention.
Dr. White	10000 Wilshire Blvd, Suite 1000, Beverly Hills, CA 90210	Information on the development of the technology of the invention.
Dr. Kryder	10000 Wilshire Blvd, Suite 1000, Beverly Hills, CA 90210	Information on the development of the technology of the invention.
Dr. Wooldridge	10000 Wilshire Blvd, Suite 1000, Beverly Hills, CA 90210	Information on the development of the technology of the invention.
Dr. Kost	10000 Wilshire Blvd, Suite 1000, Beverly Hills, CA 90210	Information on the development of the technology of the invention.
Dr. Kavcic	10000 Wilshire Blvd, Suite 1000, Beverly Hills, CA 90210	Information on the development of the technology of the invention.
Dr. Mahler	10000 Wilshire Blvd, Suite 1000, Beverly Hills, CA 90210	Information on the development of the technology of the invention.
Dr. Patapoutian	10000 Wilshire Blvd, Suite 1000, Beverly Hills, CA 90210	Information on the development of the technology of the invention.

- **Marvell *deposed only 5 of the 21 individuals listed in CMU's Rule 26 disclosures* as potentially having relevant information. For example:**
 - **Drs. Carley and White had information relevant to the questions that Marvell asked of Dr. Kryder and Wooldridge**
 - **Drs. Carley and Kost were on Dr. Kavcic's Ph.D. committee**
 - **Carl Mahler worked with Mr. Wooldridge at Tech Transfer (including on the so-called "highly speculative" spreadsheet)**
 - **Dr. Patapoutian was a source of "rumors" heard by Dr. Kavcic**

Plaintiff's Rule 26(a)(1) disclosures at pg. 2-5

Marvell Has Not Proven Evidentiary Prejudice



Marvell did not lack for expertise

- As the Court noted, Marvell *abandoned* Dr. Wolf's tap weight theory almost two years before trial

Marvell's initial argument was that selection of the "filter tap weights" of the Seagate Patent is essentially analogous to selection of a branch metric function.⁹ (See Docket No. 219 at

⁹ Marvell distanced itself from this argument over the course of the Court's consideration of the pending motion. (See Docket No. 249 at 3).

Dkt. 306 at 15

- In its opening, Marvell identified Dr. Proakis as "a distinguished expert in the field" with "half a century of experience"

11/28/12 Tr. at 174:11-16

- Marvell had access to all the expertise it needed – including "the most brilliant scientist" that Dr. Sutardja had ever known (Zi-Ning Wu)

12/11/12 Tr. at 57:2-3

Marvell's Highly Egregious Conduct Precludes Application of Laches in this Case



A finding of laches is inappropriate here because Marvell engaged in “egregious conduct” including “conscious copying” and the failure to obtain an opinion.

See A.C. Aukerman Co. v. R.L. Chaides Constr. Co., 960 F.2d 1020, 1033 (Fed. Cir. 1992); *see also Gasser Chair Co. v. Infanti Chair Mfg. Corp.*, 60 F.3d 770, 775 (Fed. Cir. 1995)

- **The evidence of Marvell's copying is compelling**
- **There is no evidence Marvell secured an opinion of counsel at any time**

Marvell Admits CMU's Proposed Findings of Fact

The Court-Ordered Procedure

which will be decided by the Court in a subsequent proceeding, the Court will order the parties to submit findings of fact and conclusions of law after the jury trial is completed on the issue of laches.⁵

⁵ The Court will likewise order the parties to comply with the procedures set forth in Local Rule 56 requiring concise statements of material facts and oppositions thereto. See LCvR 56.

Dkt. 670 at 5-6

LCvR 56 MOTION FOR SUMMARY JUDGMENT

D. Moving Party's Reply to Opposing Party's Submission. Within 14 days of service of the opposing party's submission in opposition to the motion for summary judgment, the moving party may reply to the opposing party's submission in the same manner as set forth in LCvR 56.C.

E. Admission of Material Facts. Alleged material facts set forth in the moving party's Concise Statement of Material Facts or in the opposing party's Responsive Concise Statement, which are claimed to be undisputed, will for the purpose of deciding the motion for summary judgment be deemed admitted unless specifically denied or otherwise controverted by a separate concise statement of the opposing party.

Marvell Admits CMU's Proposed Findings of Fact

11. Despite Marvell's knowledge of CMU's patents, there is no evidence that Marvell investigated the risks that it might infringe CMU's patents, nor that it obtained a legal opinion concerning CMU's patents with respect to the issues of infringement and/or validity. Dkt. 753 at 2-3.

26. The May 17 and 30, 2001 letters are contemporaneous documents showing that CMU did not, in fact, believe at the time that the industry was using the methods of the '839 patent in 2001 because they expressly speak to encouraging the industry to adopt the methods in the future. DX-182; DX-185.

32. Prior to discovery in this case, CMU never had access to or saw any Marvell confidential information about the specific technology that Marvell was building into its chips to address media noise.

Marvell Admits CMU's Proposed Findings of Fact

33. CMU took appropriate steps to investigate the rumors that Dr. Kavcic heard.

Specifically, On April 10, 2003, Dr. Bob White sent an email to Dr. Mark Kryder at Seagate with the subject line: "Kavcic-Moura algorithm." DX-213 at CMU 00066927. Dr. White wrote, "You may recall a year or so ago I was trying to get our sponsors who make drives to consider pushing the Kavcic-Moura algorithm dealing with correlated media noise with their channel-chip vendors. At Intermag, Alex heard rumors that several chip suppliers are in fact developing chips that employ this algorithm. Is there any way you could help us confirm these rumors? This is obviously IP that Seagate has funded and has rights to through the DSSC." *Id.*

45. Accordingly, as of late 2003 (less than six years before it sued Marvell), CMU had investigated the rumors that Dr. Kavcic heard and had discovered no indication that Marvell was infringing. In fact, the best evidence available to it (Dr. Kryder's report from Seagate and the lack of any interest from Marvell and others), indicated that there was no infringement at that time and Marvell's first "design win" (shipment of more than one million units) MNP-type chips did not occur until June 2003.

Marvell Admits CMU's Proposed Findings of Fact

47. Nor did Marvell change its infringing conduct after CMU put it on notice of the patents and offered to “investigate whether [Marvell] would find it attractive to license CMU’s proprietary technology.”

49. Marvell never responded to Fujitsu’s letter. JX-C (A. Armstrong Deposition Testimony read at trial) at 531-535.

72. CMU performed an evolving analysis of the CMU patents between 2006 and 2008. Ex. 10 at 105-111.

76. There is no evidence that Marvell had any acceptable alternatives to its MNP to address the growing problem of media noise.

Marvell Admits CMU's Proposed Findings of Fact

79. Of the technologies identified in Paragraphs 22-25 of Dr. Wu's Affidavit In Support of Marvell's Motion, seven of the technologies were implemented in Marvell chips prior to Marvell's development of the MNP. *See* Ex. 12. Accordingly, Dr. Wu's statement in Paragraph 25 of his affidavit that Marvell could have relied upon those technologies as alternatives to improve SNR is false.

89. Marvell was not prejudiced by Dr. Wolf's death because Drs. Proakis and Blahut were acceptable substitutes for Dr. Wolf as expert technical witnesses.

Carnegie Mellon University's Presentation on Laches - Dkt. 802

May 1 – 2, 2013



Carnegie Mellon