

EXHIBIT A Part 3

Compelling Evidence Supports the Jury's Finding of Subjective Willfulness

Credibility is for the Jury



You must consider all of the evidence, but this does not mean you must accept all of the evidence as true or accurate. You are the sole judges of the credibility of the witnesses and the weight their testimony deserves.

12/21/12 Tr.
at 57:4-7



You should consider each expert opinion received in evidence in this case and give it such weight as you think it deserves. If you should decide that the opinion of an expert witness is not based upon sufficient education, and/or experience, or if you should conclude that the reasons given in support of the opinion are not sound, or if you feel that it is outweighed by other evidence, you may disregard that opinion entirely.

12/21/12 Tr.
at 59:20-60:2

Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



Marvell knew or should have known of the risk

The **subjective prong** does not require that Marvell specifically intended to infringe. The **only question** is whether Marvell **knew or should have known** of the risk of infringement.



“Once the ‘threshold objective standard is satisfied, the patentee must also demonstrate that this objectively-defined risk ... was either known or so obvious that it should have been known to the accused infringer.’”

Bard Peripheral Vascular Inc. v. W.L. Gore & Assocs., Inc., 682 F.3d 1003, 1005 (Fed. Cir. 2012)
(quoting *Seagate*, 497 F.3d at 1371)

Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



Marvell knew or should have known of the risk

The evidence showed *(and the jury was entitled to believe)* that:

- Marvell was aware of CMU's patents
- Marvell was (at best) indifferent to CMU's rights
- Marvell's need for the CMU invention was "life or death"
- Marvell admitted it constantly uses the Kavcic "gold standard"
- Marvell copied the CMU invention set out in the asserted claims
- Marvell never got an opinion of counsel
- Marvell never took any remedial action to avoid CMU's patents

Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



Marvell knew or should have known of the risk

Despite *repeated notifications*, Marvell was (at best) *indifferent* to CMU's patents

- Marvell's executives did not care a whit about CMU's patents



Mr. Doan, Marvell's Vice President at the time testifying: **"I don't have any particular feeling about Kavcic's patent"**

JX-D-1 at pp. 5-6

Mr. Doan admitted that he **never read** the CMU patent, did not instruct his engineers to do so, and did not consult counsel

JX-D-1 at pp. 3-6

- Mr. Burd failed to read the claims as MNP development got underway



Q. You never read the claims; did you?

A. No, in this particular instance, no, I did not....

Q. In January, 2002, you kept going with your MNP development; isn't that true, sir?

A. Yes, that is correct.

12/17/12 Tr. at 169:12-170:5, see also *id.* at 174:6-9

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Marvell knew or should have known of the risk

Despite *repeated notifications*, Marvell was (at best) *indifferent* to CMU's patents

- Dr. Wu never read the file histories



Dr. Wu testified (in chambers) that he had extensive knowledge of intellectual property rights and patents long before Marvell started to infringe

12/13/12 Tr. at 6:19-23, 18:15-25, 28:16-29:22, 30:21-31:7

Q. Dr. Wu, have you *ever* read the file history of the Kavcic patents?

A. ... What – when I read his patent, I think I noticed the filing date; but I didn't know – I didn't read the history

12/13/12 Tr. at 73:5-18

Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



Marvell knew or should have known of the risk

The evidence of Marvell's **motive** to infringe was compelling – the jury was entitled to believe **that Marvell's need for and use of the CMU invention was a matter of "life or death"**

- CMU's **"must have"** evidence was compelling
 - Marvell's iterative **"coffee warmer"** was a **"lost cause"**
 - CMU's invention was **"must have"** technology and **"life or death"** for Marvell
 - In 2007, Marvell called CMU's invention **"a must"**
 - In 2008, Marvell stated that CMU's invention **"helped establish Marvell as the market leader"**

Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



Marvell knew or should have known of the risk

The jury was entitled to find that Marvell **copied**

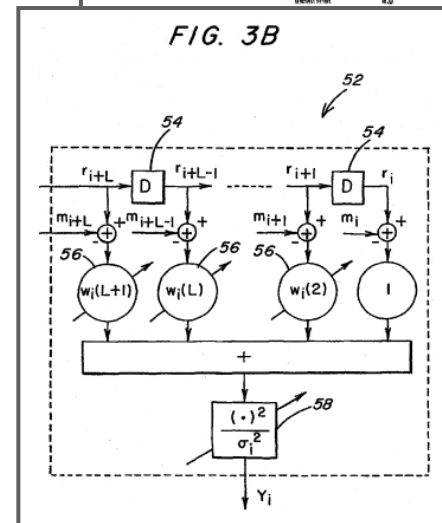
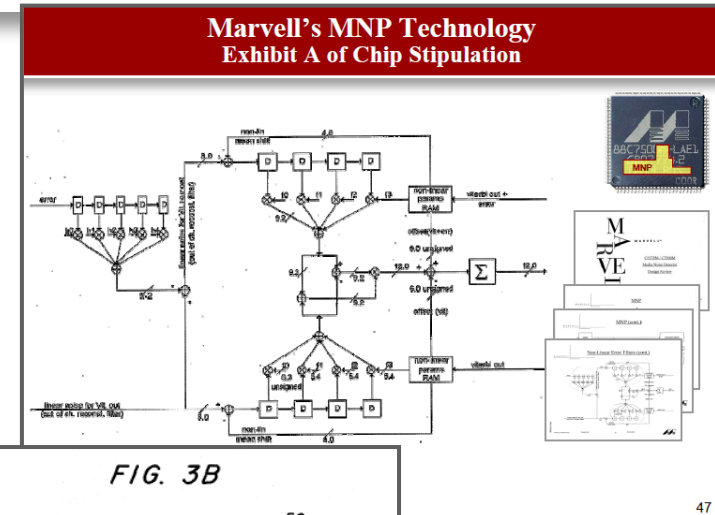
- Marvell's MNP ("Simplified Kavcic PP") circuit was a "**cut and paste**" from the CMU patents

Q All right. Let's take a look at Slide 47. What does 47 reflect?

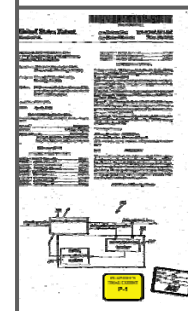
A When pictures like this are sitting on the table at home, my wife calls it engineering hieroglyphics. This is what we love to look at.

This is the circuit. It's the circuit that's in the chip. And it's kind of funny, one of the -- when I first saw this document, one of the very first things I noticed is when you look right here, when you look right here, sure enough, my first reaction is that's a cut and paste of Figure 3-B from the patent; boom, it's right in there.

12/3/12 Tr. at 106:8-18



P-Demo 7 at 47



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Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



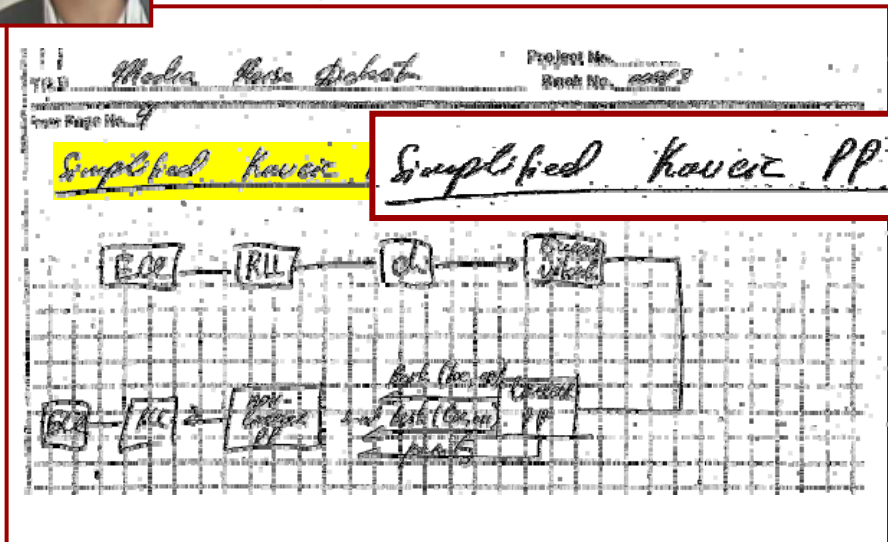
Marvell knew or should have known of the risk

The jury was entitled to find that Marvell **copied**

- Burd's "MNP" was named after Dr. Kavcic ("Simplified Kavcic PP")



Greg Burd's Lab Notes



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Greg Burd's Write Up on MNP

3.0 Media Noise List Detector

The proposed Media Noise detector consists of linear Viterbi detector, Linear Post Processor (linear PP), and non-linear Post Processor (non-linear PP)

FIGURE 2. Media noise detector diagram

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Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



Marvell knew or should have known of the risk

The jury was entitled to find that Marvell **copied**

- Using Marvell's documents and admissions, Dr. McLaughlin showed the jury that the NLD is "the original structure that Kavcic proposed in his paper"

From: Zi-Ning Wu
Sent: Friday, January 10, 2003 3:54 PM
To: Toai Doan
Cc: Runsheng He; Ravi Narasimhan; Hui-Ling Lou
Subject: Weekly status: 1/6/03 -- 1/10/03

Marvell Confidential

1. MNP enhancement: Greg and I discussed the approach of using a different noise whitening filter for each branch. It turns out to be the original structure that Kavcic proposed in his paper.

We also found a way to move the noise whitening filter out of the Viterbi. Therefore, the speed bottleneck would be the $(y-y_{\hat{}})^2/\sigma^2$ operation in the branch metric calculation. This method has a potential gain of 0.2 dB over our current MNP.

Q Now, Mr. -- or Dr. Wu goes on to say: It turns out to be the original structure that Kavcic proposed in his paper.

Do you see that?

A Yes.

Q Did you take a look at the NLD to determine whether it was the original structure that Kavcic proposed in his paper?

A Yes.

Q And what did you find?

A That it was the original structure proposed in his paper.

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12/3/12 Tr. at 135:23-136:7

Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



Marvell's claim of "good faith" is baseless

All of Marvell's arguments go to the **weight** of the evidence:

- Marvell did not intend to infringe
- Marvell did not copy
- Marvell's "suboptimal" (less complex/theoretical) implementation
- Marvell got an opinion (of something)
- Dr. Kavcic's 2008 article
- CMU's alleged delay
- Marvell cited the CMU patents in its '585 patent

Compelling Evidence Supports the Jury's Finding of Subjective Willfulness



Marvell's claim of "good faith" is baseless

The jury was entitled to discredit Mr. Burd's testimony that the letters "bmVit" did not mean "branch metric viterbi"

D:\Other Files\Greg Burd\My Documents\... post processor\archived\kavcigBank.cpp

```

287         bmVit=noiseVit[memory+L+j]
288         bmAlt=noiseAlt[memory+L+j]
289         #if FIXED_POINT_PRECISION
290             bmVit=bmVit*sigmas[ir]
291             bmAlt=bmAlt*sigmas[ir]
292         #else
293             bmVit=floor(bmVit*sig
firMultResolution);
294             bmAlt=floor(bmAlt*sig
firMultResolution);
295         #endif
296         if(maxFirOut<fabs(bmVit))
297             maxFirOut=fabs(bmVit)
298         if(maxFirOut<fabs(bmAlt))
299             maxFirOut=fabs(bmAlt)
300

```

P-108 at p. 5

Q. Would you look at link -- John, would you highlight Lines 293 through 294. They are each two lines long. And would you blow up, blow-up that first phrase, where it says, BMVit. And then, would you blow up down here, where it says, BMAlt.

Do you see is that?

A. Yes, I do.

Q. Okay. BMVit stands for, branch metrics Viterbi; doesn't it?

A. No, it does not. We just looked at the document with you. There was no branch metrics there. There is no trellis here. A branch metric is associated with a trellis. Right.

Q. BMAlt, that stands for branch metric for the alternate path; doesn't it, sir?

A. No. This is just an intermediate variable. I could have called it anything I wanted to. It does not stand for branch metric, because post processor does not compute branch metrics. It computes the differences, right, the difference metric.

Marvell's Conduct Warrants Enhanced Damages

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The *Read* factors all support a substantial enhancement of damages in this case

The *Read* factors

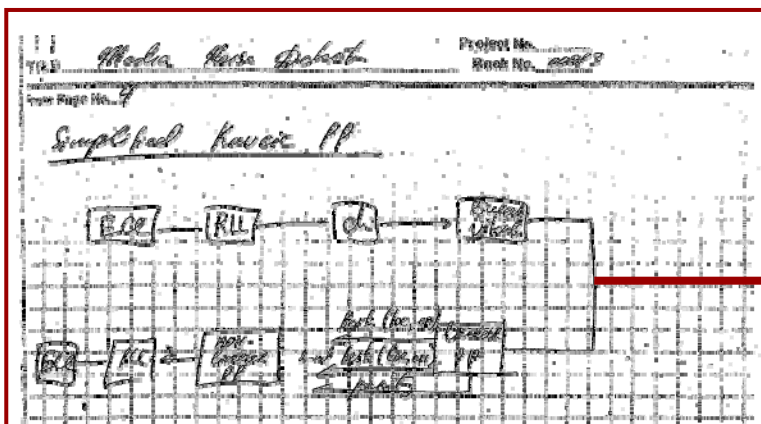
- Copying
- Investigation and good faith defense
- Litigation conduct
- Size and wherewithal of the infringer
- Closeness of the case
- Duration of misconduct/Remediation
- Motivation for harm
- Concealment

Marvell's Conduct Warrants Enhanced Damages

The *Read* factors all support a substantial enhancement of damages in this case

Marvell copied three times

- Marvell cannot escape a copying claim based on its deliberate ignorance of the claims and file history
- Marvell's MNP was "cut and paste" from the preferred embodiment of the CMU patent – which maps to the asserted claims
- Marvell named its so called "*fundamentally different approach*" after Dr. Kavcic, but hid that fact from him

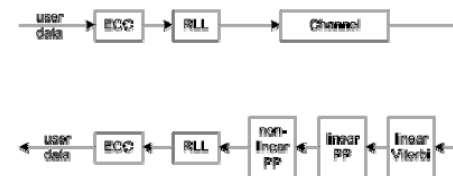


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3.0 Media Noise List Detector

The proposed Media Noise detector consists of linear Viterbi detector, Linear Post Processor (linear PP), and non-linear Post Processor (non-linear PP)

FIGURE 2. Media noise detector diagram



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Marvell's Conduct Warrants Enhanced Damages

The *Read* factors all support a substantial enhancement of damages in this case

Duration of misconduct/remediation

- Marvell's present remediation claim is disingenuous

The screenshot shows a document header with a collage of images and the text "Marvell, Mo". Below the header, the document title is "C10000 (C9300R2.0) NLV Design Specification - Delta from C9200". The author is listed as "Hongxin Song". A yellow highlight covers the text "March 18, 2010" and "June 4, 2010 update for EST Rounding". At the bottom left, it says "Confidential Attorneys Eyes Only Information". At the bottom right, there is a Marvell logo and the number "M01 6788768".

March 18, 2010

June 4, 2010 update for EST Rounding

P-823 at 108 (Ex. G to 2nd Chip Stipulation, Design Specification for new NLD Chips, dated March 2010)

Enhanced Damages are Warranted in This Case

The *Read* factors all support a substantial enhancement of damages in this case

Duration of misconduct/remediation

- Marvell's present remediation claim is disingenuous
 - Marvell introduced at least 51 new NLD chips containing read channels designed **at least one year after the lawsuit began**

*Compare 1st Chip Stipulation (Dkt. 194) with 2nd Chip Stipulation (Dkt. 639);
Marvell still selling chips 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 88i9345 88i9347 88i9348 88i1248 | 88e9310 | March 2010 |
| 88i1084 | 88e9311 | March 2010 |
| 88i9435 | 88e9400 | March 2010 |
| 88i9405 88i9411 88i9412 88i9421 88i9422 88i9441 88i9448 88i9447 | 88e9410 | March 2010 |
| 88i1087 | 88e9411 | March 2010 |
| 88i1005 88i1038 88i1046 88i1047 88i1048 88i1049 | 88e10010 | March 2010 |
| | 88e9300 88e9399 88e9198 88e11010 88sre10030 88sre10050 88sre10000 | March 2010 |
| 88i1012 88i1055 88i1058 88i1059 88i1017 88i1149 88i1160 88i1181 | No disclosure from Marvell as of Oct. 29, 2012 | No design spec produced |

The Enhancement Should Be Substantial

The Enhancement Should Be Substantial

The Court has discretion to double or treble damages in this case



No abuse of discretion to treble damages even though defendant argued that the case had been a close one

See Johns Hopkins Univ. v. CellPro, Inc., 152 F.3d 1342, 1365 (Fed. Cir. 1998)



Treble damages was not an abuse of discretion even where defendant had independently developed the accused device

See SRI Int'l, Inc. v. Advanced Tech. Laboratories, Inc., 127 F.3d 1462, 1469 (Fed. Cir. 1997)



Doubling damages considered appropriate where jury verdict was substantial; “the award is significant, in its own right. However, we do not consider the compensatory damages award to evidence the jury’s desire to punish defendants.”

See Muniauction, Inc. v. Thomson Corp., 502 F. Supp. 2d 477, 487 (W.D. Pa. 2007) rev’d on other grounds, 532 F.3d 1318 (Fed. Cir. 2008)

**Carnegie Mellon University's Presentation on
Willfulness and Enhanced Damages – Dkt. 790 and Dkt. 805**

May 1 – 2, 2013



Carnegie Mellon