

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

CARNEGIE MELLON UNIVERSITY,

Plaintiff,

v.

MARVELL TECHNOLOGY GROUP, LTD.,
and MARVELL SEMICONDUCTOR, INC.,

Defendants.

Civil Action No. 2:09-cv-00290-NBF

Hon. Nora B. Fischer

**MARVELL'S SUR-REPLY IN OPPOSITION TO CMU'S MOTION FOR A FINDING
OF WILLFUL INFRINGEMENT AND ENHANCED DAMAGES**

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Defendants Marvell Technology Group, Ltd. and Marvell Semiconductor, Inc. (collectively, “Marvell”) respectfully file this sur-reply in opposition to Plaintiff Carnegie Mellon University’s (“CMU”) motion for a finding of willfulness and enhanced damages (Dkt. 790, 793).

CMU’s initial brief in support of willfulness and enhancement (Dkt. 793, hereinafter “Brief”) relied heavily on the district court’s opinion in *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, see generally 725 F. Supp. 2d. 474 (D. Del. 2010).¹ Although CMU has now fallen silent about *Power* in its Reply (Dkt. 850), the Federal Circuit has since *vacated* the willfulness finding in *Power* (which had been entered pre-*Bard*) “with instructions to reassess willfulness in view of our other holdings in this case.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, --- F.3d ----, 2013 WL 1200270, *28 (Fed. Cir. Mar. 26, 2013). Instead of addressing the gaps in its argument left in the wake of *Power*, CMU resorts to distorting the law and the facts to try to make a very close technological case appear less close. CMU’s request for a finding of willfulness and enhancement should be rejected.

I. THE RECORD DOES NOT SUPPORT OBJECTIVE WILLFULNESS

In continuing to discount Marvell’s objectively reasonable defenses, CMU cites *Seagate* (Reply 1) for the “rule” that willfulness depends on “prelitigation conduct.” But, contrary to CMU’s suggestion, *Seagate* did not announce a rule that the *objective prong* should focus on a defendant’s prelitigation *awareness* of specific defenses. Rather, *Seagate* merely explained that,

¹ See Brief 16 & 16 n.46 (claiming that “[t]his case is analogous to *Power Integrations*, where copying was relevant to both the objective and subjective prongs”); *id.* at 14 n.40 (citing *Power* to support CMU’s positions on Marvell’s pre-litigation conduct); *id.* at 14 n.42 (citing *Power* on the relevance of opinions of counsel); *id.* at 18 (citing *Power* on the advisability of enhancement as a punitive measure); *id.* at 22, 26 (citing *Power* on the analysis of *Read* factor six (duration of misconduct)); *id.* at 24-25 (citing *Power* on the supposed propriety of trebling damages notwithstanding the mitigating considerations present in this case).

when a party relies upon prelitigation opinions of counsel for the subjective prong, privilege as to the opinions of trial counsel is not waived because willfulness “in the main” is based upon prelitigation *conduct*. In fact, the *en banc Seagate* Court held that “the *reasoning* contained” *in post-litigation* opinions of trial counsel can preclude *prelitigation* conduct from being considered objectively reckless, regardless of the extent of any subjective reliance. *In re Seagate Tech., LLC*, 497 F.3d 1360, 1371 (Fed. Cir. 2007) (*en banc*) (emphasis added).

CMU continues (Reply 1-2 & n.1) to confuse the distinct objective and subjective inquiries into willfulness, contrary to *Seagate* and ensuing decisions. In particular, CMU’s position defies the Federal Circuit’s recent instruction that, “[u]nder both *Brooks Furniture* and *Seagate*, objective baselessness ‘does not depend on the plaintiff’s *state of mind at the time the action was commenced*, but rather requires an objective assessment of the merits.’ *State of mind is irrelevant to the objective baselessness inquiry.*” *iLOR, LLC v. Google, Inc.*, 631 F.3d 1372, 1377 (Fed. Cir. 2011) (*quoting Brooks Furniture Mfg., Inc. v. Dutailier Int’l, Inc.*, 393 F.3d 1378, 1382 (Fed. Cir. 2005)) (emphases added). It also contradicts the Federal Circuit’s concern to avoid placing “‘inappropriate burdens on the attorney-client relationship,’” *Seagate*, 497 F.3d at 1370 (*quoting Knorr–Bremse Systeme Fuer Nutzfahrzeuge GMBH v. Dana Corp.*, 383 F.3d 1337, 1343 (Fed. Cir. 2004) (*en banc*)); *see also id.* at 1373-74 (*citing Hickman v. Taylor*, 329 U.S. 495, 510–11 (1947))—for it would follow from CMU’s position that defendants must, in order to set up any argument against objective willfulness, divulge specifically what they learned from their counsel pre-litigation about their defenses.²

² Similarly in contravention of *Seagate*, CMU continues to seek impermissible adverse inferences—going so far as to assert (Reply 1) that Marvell, “swarming with prolific inventors and advised by a sophisticated internal legal department,” proceeded “without ever reading the claims of CMU’s patents.” Marvell’s decision not to waive privilege is no basis for *any* adverse inference (Dkt. 753, at 3-4), much less for dispensing with requisite inquiry into the objective

A. Marvell's Invalidity Defense Was Objectively Reasonable

CMU argues (Reply 2) that “Marvell rendered its ‘close call’ argument irrelevant by abandoning its ‘tap weight’ and ‘target value’ theories of anticipation [at trial].” But the Court itself assessed Marvell’s summary judgment motion as a “close” call. (Dkt. 306, at 1; Dkt. 337, at 4.) Where a “reasonable litigant could realistically expect success” on the merits of its defense, the defense cannot be objectively baseless. *Bard Peripheral Vascular, Inc. v. W.L. Gore & Assocs., Inc.*, 682 F.3d 1003, 1007 (Fed. Cir. 2012). Here, a reasonable litigant could reasonably have expected to succeed on Marvell’s anticipation defense, as confirmed by the Court’s assessment on summary judgment (Dkt. 306, at 1; Dkt. 337, at 4). Strategic decisions that Marvell then made for the benefit of the jury have no bearing on the demonstrated reasonableness of its legal defense. Dr. McLaughlin’s admissions further support the reasonableness of an anticipation defense based on the further modified disclosure in Worstell (*see* Dkt. 834, hereinafter “Opp.,” at 4). And Marvell’s claim chart (Opp. 4-5) demonstrates how close this case was by mapping CMU’s admissions and Dr. Proakis’ opinions. CMU now labels the chart “misleading” (Reply 2), but its only basis is its flawed disagreement with Dr. Proakis:

- CMU does not dispute that Dr. Proakis testified (12/17/12 Tr. at 60:1-25) that what is disclosed in the Worstell patent’s “further modified” branch metric is “exactly” what is

reasonableness of Marvell’s defenses. CMU also incorrectly quotes *Seagate* (Reply 1 n.1) for the proposition that a defendant’s failure to proffer favorable advice from its counsel is “crucial to the analysis,” 497 F.3d at 1368-69; in fact, this portion of *Seagate* describes *prior* law—under *Underwater Devices Inc. v. Morrison-Knudsen Co.*, 717 F.2d 1380, 1389-90 (Fed. Cir. 1983), and the old “duty of care” standard—as it had existed *before* the Federal Circuit “recognized the practical concerns stemming from our willfulness doctrine, particularly as related to the attorney-client privilege and work product doctrine,” *Seagate*, 497 F.3d at 1369. Nor is CMU justified in claiming (Reply 1 n.1) that the “prohibited adverse inference relates to the nature of counsel’s advice,” not *whether* an opinion was obtained. *Seagate* expressly spoke to *both* potential aspects of the inference, noting that *Knorr-Bremse* forbade any inference that a defendant “*either* obtained no advice of counsel *or* did so and was advised that its [activities] would be an infringement of valid U.S. Patents.”” *Seagate*, 497 F.3d at 1369-70 (*quoting Knorr-Bremse*, 383 F.3d at 1343) (emphasis added).

disclosed in the Zeng and Lee articles referenced the Background of the Invention to the CMU patents, as well as Equation 10 in the CMU patents. While CMU disagrees with Dr. Proakis, claiming Worstell's transition noise adjustment is "constant" (Reply 2), CMU concedes that Dr. McLaughlin admitted that Worstell discloses transition noise that "differs depending on whether there is a transition or not" (Reply 2 n.4).

- CMU claims that Dr. Proakis ignored "troublesome claim elements" (Reply 3), but fails to point to any such ignored elements. As Marvell's chart (Opp. 4-5) shows, Dr. Proakis addressed each claim element. To the extent CMU suggests (Reply 2) that $1/\sigma^2$ is a "constant" across all branches in Worstell, CMU ignores Dr. Proakis' testimony—as well as Dr. McLaughlin's—that the $1/\sigma^2$ is different for branches with a transition as compared to branches without a transition. (12/17/12 Tr. (Proakis) at 94:8-12.)
- CMU's portrayal of Dr. Proakis' testimony as "contradictory" (Reply 3) continues to fail. After initially alleging "contradict[ion]" between Dr. Proakis's trial testimony and his November 2011 declaration (Brief 11), CMU now turns elsewhere (Reply 3) to complain that "Marvell represented in writing that Dr. Proakis's opinion 'is not contingent on the details of what function means.'" In fact, the quote comes from the October 17, 2012 transcript and CMU omits the beginning of the quote, which says, "And his *report* is written in a way that is not contingent on the details of what function means" (Dkt. 590, at 83)—thereby referencing Dr. Proakis's *expert report* rather than the trial testimony or declaration at issue. Finally, the written document that CMU cites (as opposed to quotes) comes from Marvell's MIL slides and states that "Prof. Proakis' *written description, enablement and indefiniteness* opinions are not contingent upon any specific construction of the term 'function.'" (Dkt. 587-7, at 5 (emphasis added).) Because Marvell's response (Opp. 5-6) relates specifically to *anticipation*, this citation, too, offers nothing to contradict Dr. Proakis's testimony at issue.
- CMU cites (Reply 3) three pieces of evidence to suggest secondary considerations of non-obviousness, but each fails to overcome CMU's admissions of lack of commercial success (*see* Opp. 7). The first, a transcript excerpt (12/5/12 Tr. at 136-37), cannot evidence commercial success because it does not describe any embodiment of the invention or any revenue, profits or sales from the invention. The second and third (Dkt. 827, at 6 n.11; 12/18/12 Tr. at 70:15-73:1; P-161) do not show praise of CMU's *claimed* invention. The invention disclosure reviewed by Dr. Worstell did not include any patent claims and only included equations using covariance matrices. The Court granted Marvell's motion for summary judgment of non-infringement of several CMU patent claims that require the use of covariance matrices, as Marvell's chips do not use such matrices. Even if the use of covariance matrices went beyond the Seagate patent, the claims CMU was asserting at trial do not require the use of covariance matrices.

B. Marvell's Noninfringement Defense Was Objectively Reasonable

Marvell independently had objectively reasonable arguments as to why it did not infringe. Marvell's understanding of the asserted patents' limited scope corresponded with Dr.

Kavcic's view of his own patents.³ Regardless whether "the cited statements were unknown to Marvell at the time infringement began" (Reply 4), Dr. Kavcic's own beliefs about the scope of his invention are probative of what an objective litigant might also reasonably conclude. CMU's refrain that Dr. Blahut "gave clearly conflicting testimony" on a "fundamental point" (Reply 5) squares neither with his testimony nor with CMU's cited docket entries. (*See* Dkt. 735, at 2 ("[T]he Court believes that the record is not clear as to whether Dr. Blahut truly offered a 'new opinion' at trial.")). As explained in Marvell's opposition (Dkt. 728, at 8-9) to CMU's motion to strike, which the Court denied, Dr. Blahut consistently referred to the "metric" used in Marvell's Post Processor as one that was calculated based on a "difference" metric.

II. THE RECORD DOES NOT SUPPORT SUBJECTIVE WILLFULNESS

Although "the jury found by clear and convincing evidence that Marvell knew or should have known that it infringed the asserted claims" (Reply 5), CMU fails to show that the record contains clear and convincing evidence to support that conclusion. While premising its narrative upon the notion that Marvell set out to conceal its infringement (Reply 4 n. 9, 7 n. 15, 8; Brief at 22-23), CMU dismisses as "irrelevant and illogical" (Reply 5) Marvell's observation that it openly disclosed to the PTO and the public its own technology relative to Dr. Kavcic's. But that fact should be highly "relevant" to willfulness. (Dkt. 596, at 3 ("The Court agrees with Marvell that evidence regarding the '585 and '660 patents . . . has the tendency to make the existence of no acts of copying/willfulness . . . 'more probable than it would be without such evidence.'"));

³ Like Marvell, Dr. Kavcic believed that the "signal dependent nature" of his invention was limited to the trellis and that a post-processor functionality would not be covered by the patents. (DX-189, at 1.) Dr. Kavcic also believed, like Marvell, that "the complexity [of his invention] is too high for implementation in hardware," but Marvell's "novel" invention "strike[s] a balance between complexity and performance." (DX-310 at 1761, 1766.) Further, Dr. Moura believed, like Marvell, that the patents describe an "optimal" but "complex" solution and people working on "suboptimal" solutions were "suggest[ing] ways around" the claimed invention. (DX-1522, at 2.)

see also Paradigm Sales, Inc. v. Weber Marking Sys., Inc., 880 F. Supp. 1247, 1252 (N.D. Ind. 1995) (denying motion to exclude evidence of defendant's patent, reasoning that it might be probative on the issue of willfulness); *Cook Inc. v. Endologix, Inc.*, No. 1:09-cv-01248, 2012 WL 4514036, *5-*6 (S.D. Ind. Oct. 1, 2012). Marvell could not have been willfully concealing actions it publicly set forth to the PTO (DX-266, at 1; DX-287, at 1; DX-1086, at 6).

The jury's finding of subjective willfulness is unsupported for several additional reasons:

- Even though complexity and optimality of its patents do not themselves make for separate "infringement defenses" (Reply 4), Marvell's noninfringement defense was grounded in the good-faith belief that it was using its own patentably distinct technology, which the PTO acknowledged over CMU's patents.
- Contrary to CMU's assertion regarding Marvell's inability to assert a "good faith" belief regarding the use of the Kavcic Viterbi simulator (Reply 6), even CMU's own expert admitted that a "[d]etector is in the chip" (12/3/12 Tr. (McLaughlin) at 38:6-7). This acknowledged fact, considered alongside the Federal Circuit's finding that a "simulation program" used for testing algorithms cannot, by itself, show that a claimed method is being carried out (*Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1256 (Fed. Cir. 2005)) demonstrates the reasonableness of Marvell's belief that Kavcic Viterbi Simulator is distinct from the claimed detector. (12/12/12 Tr. (Wu) at 97:10-15 ("Simulator is used for basically simulation. It's like a fly simulator. You play fly simulator, you get feeling you're flying, but it's different from real airplane. Fly simulator is not an airplane. Like same thing for us, simulator is not a detector.").)
- CMU's conclusory claims (Reply 6) that Marvell "ignored" and "did not respond" to Fujitsu's letter (Brief 16, 23) are not grounded in specific testimony or evidence, as explained in Marvell's opposition (Opp. 16-17).
- Although CMU cites (Reply 6) "must have" testimony as evidence that Marvell was motivated to willfully infringe, Marvell has established that customers purchased Marvell's chips despite the patented technology and not because of it. (Dkt. 809, at 6-9.)
- Finally, although CMU further attempts to argue that Dr. Wu provided contradictory testimony with respect to the '585 patent, it mischaracterizes Dr. Wu's testimony (which CMU interrupted), as Marvell has elsewhere explained (Dkt. 851, at 2).

III. THE *READ* FACTORS WEIGH AGAINST ENHANCEMENT

Assuming, *arguendo*, that objective as well as subjective willfulness were found in this case (which they should not be), the *Read* factors would still weigh against enhancement.⁴

- ***Marvell Acted In Good Faith.*** Again, Marvell’s good faith is strongly evidenced in this case—as it is in few willfulness cases—by the fact that Marvell fully disclosed to the PTO and the public its MNP solution, its naming of the solution after Dr. Kavcic, and how its MNP solution proceeded relative to CMU’s prior art as reflected in the CMU patents and article. (DX-266, at 1; DX-287, at 1; DX-310, at 1761, 1766; DX-1086, at 6.) That the PTO granted Marvell’s patents as patentably distinct counts in favor of good faith and confirms that Marvell did not slavishly copy CMU’s invention.
- ***Marvell Was Not Motivated To Harm CMU.*** By CMU’s account (Reply 8), “[a] profit motive is at the root of all infringement, and this case is no different.” Were that correct, then the profit motive would point towards enhancement in “all” infringement cases. But in infringement cases like this one, where there is no market competition between plaintiff and defendant, the Federal Circuit has affirmed findings that the defendant lacked motive to harm. *See, e.g., Odetics, Inc. v. Storage Tech. Corp.*, 14 F. Supp. 2d 800, 804 (E.D. Va. 1998) (finding “no evidence that [defendant] sought to harm [plaintiff]” where parties “do not compete”), *aff’d*, 185 F.3d 1259, 1274 (Fed. Cir. 1999). Because CMU neither cites contrary authority nor denies that Marvell and it do not compete with one another in the market, this factor weighs against enhancement.
- ***Marvell Did Not Hide Its Actions.*** According to CMU (Reply 8), Marvell hid Dr. Kavcic’s name when it dissociated his name from the simulation source code files. To

⁴ There is no denying that CMU’s delay in filing suit has already effectively enhanced the jury’s award, as claimed royalties piled up for years while CMU sat silent. (*See generally* Opp. at 22-23.) In *i4i Ltd. P’ship v. Microsoft Corp.*, the district court limited enhancement to 20% of the jury verdict based on such delay, even though all but two *Read* factors supported enhancement. 670 F. Supp. 2d 568, 595-96 (E.D. Tex. 2009), *aff’d in relevant part*, 598 F.3d 831, 858-59 (Fed. Cir. 2010), holding that i4i’s “delay in bringing suit . . . weighs against enhancement,” *id.* at 595. Similarly, in *Loral Corp. v. B.F. Goodrich Co.*, the court, denying increased damages, found that “Goodyear’s eight year delay . . . before filing suit, coupled with the considerable prejudice to BFG resulting from this delay, is unreasonable and inexcusable.” No. C-3-86-216, 1989 WL 206377, *32 (S.D. Ohio June 8, 1989), *rev’d on other grounds*, 899 F.2d 1228 (Fed. Cir. 1990). In *Mass Engineered Design, Inc. v. Ergotron, Inc.*, an “extremely close case,” the court found that even a delay that does not support a successful laches defense may nonetheless, *inter alia*, weigh against the enhancement of damages. 633 F. Supp. 2d 361, 391 (E.D. Tex. 2009). CMU’s suggestion (Reply 7 n.15) that this Court need not consider CMU’s delay because it does not exactly mirror the delay in these prior cases ignores a consensus—against which CMU cites no competing authority—that a plaintiff is particularly undeserving of judicial enhancement to the extent it has delayed in complaining of infringement, because such delay has already, in essence, effected an enhancement.

the contrary, Marvell in 2002 expressly disclosed the use of Kavcic's name in its files, including "KavcicPP," to the PTO as part of its provisional patent application (DX-1086, at 9) slated for public availability. Not until a year later, in 2003, did Marvell change its file names containing Kavcic's name—simply because, as Dr. Wu testified, Marvell wanted to avoid possible internal confusion between the marketed product and the simulator files. (12/11/12 Tr. (Wu) at 307:18-308:2.) Marvell certainly was not trying to conceal Kavcic's name by such changes given that Marvell openly disclosed that very information through the PTO.

* * *

CMU misreads (Reply 8) Marvell as "admit[ting] that . . . a 20% enhancement (as in *i4i*) would be appropriate in this case." Marvell respectfully opposes *any* enhancement, nonetheless contending *in the alternative* that, "[s]hould the Court find willfulness and exercise its discretion to award enhanced damages (which it should not), any enhancement should not exceed 20% of the damages award." (Opp. 24.) Although CMU further contends (Reply 8) that "*i4i* sets the floor" because "all of the *Read* factors support enhancement," Marvell has separately refuted that contention factor by factor. At the worst, however, this Court should not exceed the 20% enhancement in *i4i* because none of the egregious conduct in the cases cited by CMU exists here (*see generally* Opp. at 25). To the contrary, CMU's inexplicable delay in filing suit and Marvell's good-faith belief (backed up by Marvell's own patent application and grant by the PTO) that its suboptimal, commercially viable approach to the problem of media noise was patentably distinct should limit any enhancement, if there is to be any enhancement (which there should not be), to a discrete percentage of no more than 20%.

CONCLUSION

For the foregoing reasons and those previously stated, Marvell respectfully requests that the Court deny CMU's motion for a finding of willfulness and enhancement of damages.

Dated: April 19, 2013

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on April 19, 2013, the foregoing was filed electronically on ECF. I also hereby certify that on April 19, 2013, this filing will also be served on counsel for CMU by electronic mail.

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