

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

LINEAR TECHNOLOGY)
CORPORATION,)
)
Plaintiff,)
)
v.)
)
MONOLITHIC POWER SYSTEMS, INC.)
)
)
Defendant.)

C.A. No. 06-476-GMS

MEMORANDUM

I. INTRODUCTION

On August 3, 2006, plaintiff Linear Technology Corporation (“Linear”) filed this action against Monolithic Power Systems, Inc. (“MPS”), alleging that MPS’ products infringe United States Patent Nos. 5,481,178 (the “178 patent”) and 6,580,258 (the “258 patent”) (collectively, the “Linear patents”), and that MPS breached a settlement agreement. (D.I. 2.) MPS filed an answer generally denying infringement and breach of the settlement agreement. (D.I. 36.) MPS also asserted affirmative defenses challenging the enforceability and validity of the Linear patents. (Id.) The court held a *Markman* hearing in this matter on July 26, 2007. On November 20, 2007, the court issued an order construing the disputed claim terms of the Linear patents. (D.I. 104.)

The court held a jury trial from June 23, 2008 through July 1, 2008. (D.I. 231-36.) On July 1, 2008, following the six-day trial, the jury returned a verdict in favor of Linear. In its verdict, the jury found that: (1) MPS infringes the asserted claims of the Linear patents; and (2)

MPS failed to prove the Linear patents are invalid by reason of obviousness. (D.I. 227.) The court entered judgment on the verdict in favor of Linear and against MPS on November 17, 2008. (D.I. 240.)

The court tried the issue of inequitable conduct in a bench trial on June 2, 2009. (D.I. 263.) The court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331, 1338(a), and 2201(a). Having considered the testimony and documentary evidence, the court makes the following findings of fact and conclusions of law pursuant to Federal Rule of Civil Procedure 52(a).

II. FINDINGS OF FACT

A. Procedural History

1. In August 2004, Linear Technology Company (“Linear”) filed a complaint with the International Trade Commission (the “ITC”) against Monolithic Power Systems, Inc. (“MPS”), alleging violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337. The ITC subsequently initiated an investigation of MPS’ alleged conduct. Specifically, Linear maintained that MPS’ MP1556 and MP1557-1559 voltage regulator circuit products violated section 337 by infringing Linear’s United States Patent Nos. 5,481,178 (the “178 patent”) and 6,580,258 (the “258 patent”) (collectively, the “Linear patents”). (D.I. 2.) On the eve of the scheduled trial before the ITC, the parties agreed to resolve their dispute by entering into a Settlement Agreement and a Consent Order Stipulation. After exchanging several drafts and engaging in negotiations, the parties executed the Settlement Agreement on September 29, 2005. Subsequent to execution of this agreement, MPS began marketing a voltage regulator controller product designated as MP1543.

2. Linear then brought the above-captioned action against MPS, on August 3, 2006, alleging that MPS' MP1543 products infringe the Linear patents, and that MPS breached the settlement agreement. (D.I. 2.) The case was tried by a jury from June 23, 2008 through July 1, 2008. (D.I. 23-36.) On July 1, 2008, the jury returned a verdict finding in favor of Linear. In particular, the jury determined that: (1) MPS infringed the asserted claims of the Linear patents; and (2) MPS failed to prove the Linear patents were invalid by reason of obviousness. (D.I. 227.) The court entered judgment on the verdict in favor of Linear and against MPS on November 17, 2008. (D.I. 240.)

3. Following entry of this judgment, MPS filed a post-verdict motion seeking judgment as a matter of law ("JMOL") on the issue of obviousness or, alternatively, for a new trial on validity. (D.I. 247.) This court denied MPS' motion for JMOL because MPS failed, as required, to raise the issue of obviousness in a pre-verdict JMOL motion and, therefore, did not preserve the issue. *See Linear Technology Corp. v. Monolithic Power Systems, Inc.*, C.A. No. 06-476 GMS, 2009 U.S. Dist. LEXIS 105823, at *9-10 (Nov. 12, 2009). The court also denied MPS' motion for a new trial, because the jury's verdict was reasonable in light of the evidence presented and MPS did not support its contention that Linear engaged in fraud materially affecting the verdict. *See id.* at *11-20.

4. Following the jury trial, the court held a bench trial regarding MPS' inequitable conduct defense on June 2, 2009.

B. The Linear Patents and Technology at Issue

5. The Linear patents relate to a "high efficiency switching regulator." (D.I. 2, Ex. A at col. 2, 1. 20.) Specifically, the Linear patents "relate to a control circuit and methods for maintaining high efficiency over broad current ranges, including low output currents, in a switching regulator

circuit.” (Id. at col. 2, 11. 21-24.)¹ These patents disclose a control circuit and method that improves efficiency by turning off switching transistors under certain operating conditions, thereby alleviating the need for input from the power source. (Id. at col. 2, 11. 31-38.)

6. Unlike a series regulator, which employs a pass element (e.g., a power transistor) and transmits power across the pass element as a “steady current flow,” a switching regulator employs a switch (e.g., a power transistor) that can “regulate the flow of power to the load” and, through “inductive energy storage elements,” convert the switched current pulses into a steady load current, allowing power to be transmitted in “discrete current pulses” instead of a single flow. (Id. at col. 1, 1. 17-30.) This switching regulator method, therefore, generally results in “reduced amounts of average power dissipation” because, rather than providing a continuous dissipation of power, the switching regulator either turns off the power when the switch is off, or releases only a small amount of power when it is on. (Id. at col 1, 1. 43-51.) Because of the higher efficiency provided by switching, as opposed to series regulators, switching regulators are often employed in battery-operated systems such as laptop computers and hand-held electronic instruments. (Id. at col. 1, 11. 58-61.) The invention of the ‘178 patent, therefore, was intended to provide a high efficiency switching regulator. (Id. at col. 2, 11. 19-20.)

7. Linear filed its patent application for the ‘178 patent on March 23, 1993 and listed Milton Wilcox (“Wilcox”) and Randy Flatness (“Flatness”) as the inventors. (D.I. 266 at 6.) Robert Dobkin (“Dobkin”), Linear’s Vice President of Engineering, authorized the filing of the patent application. (Id.) The ‘178 patent was subsequently issued on January 2, 1996. (D.I. 265 at 2.) The ‘258 patent, issued on October 15, 2001, is a continuation of the ‘178 patent and contains a nearly identical specification, with only the introduction and claim language differing. (Id. at

¹ The ‘258 patent is a continuation of the ‘178 patent and contains the same specification. Thus, the court will refer only to the ‘178 patent specification.

20.) Both patents relate to synchronously switched voltage regulators employing burst mode or reverse current prevention. (Id.)

8. The inequitable conduct issue relates to Claim 1 (the “burst mode” claim) and Claims 44-48, 51, and 54 (the “reverse current prevention” claims) of the ‘178 patent. (D.I. 265 ¶ 6.) The burst mode claim, interchangeably referenced as the “sleep mode” claim, describes a functionality wherein the switches in the regulator are turned off “so that nothing is drawing power” in order to “allow the circuitry to run off the reservoir . . . and have much lower power dissipation.” (Id. ¶ 6.) The reverse current prevention claims detail the invention’s ability to “prevent the reversal of current flow in the inductor” and, in so doing, prevent “wasting power by taking it back out of the capacitor and shortening battery life.” (D.I. 266 at 2.)

C. The Allegedly Withheld Information and MPS’ Inequitable Conduct Defense

9. MPS asserts that Linear withheld material information about the MAX782 from the PTO during the prosecution of the ‘178 patent. (D.I. 265 at 1.) The MAX782, produced by Maxim Integrated Products (“Maxim”), a semiconductor company located in northern California, is a “synchronous voltage regulator product . . . [that] automatically employ[s] ‘burst mode’ at low output current levels to improve efficiency.” (Id. at 3.) Specifically, MPS alleges that Linear knowingly, and with the intent to deceive, failed to provide the PTO with a comprehensive twenty-six page document (the “EV Kit Documentation”) that detailed the MAX782’s internal circuitry and operation. (Id. at 1.) This documentation, which MPS asserts was in Linear’s possession when it submitted its Information Disclosure Statement (“IDS”) to the PTO in June 1993, allegedly demonstrated that the MAX782 employed both the burst mode and reverse current prevention functions included in Linear’s ‘178 patent claims. (Id. at 3-6.) Consequently,

MPS argues that the MAX782 was material to the PTO's assessment of Linear's burst mode and reverse current prevention claims. (Id. at 3.)

10. MPS accuses Dobkin, Flatness, and Wilcox (collectively, the "applicants") of committing inequitable conduct during the prosecution of the '178 patent. (D.I. 265.) Specifically, MPS accuses the applicants of intentionally withholding the MAX782 EV Kit Documentation from the patent examiner. (Id. at 4-9.) MPS asserts that the applicants knew of the EV Kit Documentation's materiality because, even if the MAX782 does not constitute prior art, the EV Kit Documentation revealed a near simultaneous invention and illustrates the level of knowledge and skill of the person of ordinary skill in the art, thus implicating obviousness. (Id. at 3.) MPS alleges that the applicants were in possession of the EV Kit Documentation in March 1993 and, therefore, intentionally withheld the documentation from its June 1993 IDS and subsequent disclosure. (Id. at 4-5.)

11. Linear filed its application for the '178 patent on March 23, 1993. (Id. at 2.) Linear's first synchronous controller products employing burst mode capabilities were its LTC1148 and LTC1149. (Id. at 3.) Linear announced its release of these products in a February 5, 1993 press release, and had disclosed information about these products pursuant to non-disclosure agreements prior to this public statement. (Id.) Maxim announced that it was producing a synchronous voltage regulator product, the MAX782, in 1992. (Id.) Maxim indicated that the MAX782 would automatically employ burst mode at low output current levels to improve efficiency. (Id.) Linear learned of the MAX782 in November 1992 via reports submitted by its Field Application Engineer ("FAE") that Maxim was marketing its product to Compaq. (Id.)

12. Dobkin, aware that Maxim was developing a product that would compete with the LTC1148 and LTC1149, directed his FAEs, beginning at least by January 1993, to find out more

information about the MAX782. (Tr. at 57:5-11). In March 1993, the applicants received a “Rev. A” version of the MAX782 evaluation board from one of its customers. (D.I. 265 at 4.) Evaluation boards typically include a “printed circuit board containing the integrated circuit of interest, together with the additional external components required for the part to operate.” (Id.) Linear also received the EV Kit Documentation, which explained the part’s operation and detailed its burst mode and reverse current prevention functions, in March 1993.² (D.I. 265 at 4-5.)

13. The applicants did not disclose the EV Kit Documentation in its IDS to the PTO. (D.I. 265 at 10.) Instead, the applicants included only an eight-page Advanced Information Data Sheet (“AI Data Sheet”) for the MAX782 that it received on February 18, 1993.³ (Id. at 4; DX-323 at 3). This AI Data Sheet did not disclose: that the MAX782 automatically transitioned into burst mode at low load currents; the circuitry for implementing burst mode; that the MAX782 prevented reverse current through the inductor; or the circuitry, including the current comparator, used in the MAX782 to prevent current reversals in the inductor. (D.I. 265 at 10.) The EV Kit Documentation included explanation of each of these elements. (Id.)

14. MPS maintains that the EV Kit Documentation was especially material to the patentability of several of the ‘178 reverse current prevention claims because the MAX782 “arguably anticipated (not merely obviated) those claims.” (Id. at 7.) Indeed, the MAX782 “practiced the reverse current prevention claims and the EV Kit Documentation disclosed the

² Linear disputes that it received the EV Kit Documentation in March 1993. (D.I. 266 at 12-13.) Specifically, both Dobkin and Flatness testified at trial that they did not receive this documentation until June 1993. (Tr. at 82:2-6; 148:14-15.) This testimony, however, directly contradicts Dobkin and Flatness’ earlier deposition testimonies that the EV Kit Documentation was received in March 1993. (DX-68; DX-123). The witnesses’ revised recollections are unsupported by documentary evidence attesting to the changed date. (Tr. at 81:1-6.) Moreover, Dobkin gave his earlier deposition testimony as Linear’s Rule 30(b)(6) representative and after consultation with Linear’s attorneys. (Id. at 79:15-21.) See ¶ 32 below, discussing Dobkin and Flatness’ inconsistent testimony.

³ Linear contends that it did not received the AI Data Sheet until May 1993. (D.I. 266 at 9.) MPS asserts that, per statements made in Linear’s Amended Response to Maxim Integrated Products, Inc.’s Third Set of Non-Uniform Interrogatories (DX-323), Linear received this documentation on February 18, 1993. (D.I. 265 at 4.)

circuitry that met the claim limitations.” (Id.) In particular, the EV Kit Documentation disclosed that the MAX782 contained a “current comparator, labeled the ‘Synchronous Switch Control,’ that monitored the inductor current, compared it to a threshold, and prevented reversals of current through the inductor.” (Id.)

15. MPS asserts that the applicants’ actions constituted selective disclosure. (D.I. 265 at 8-9.) Specifically, MPS accuses the applicants of knowingly withholding material information, the EV Documentation Kit, which was in their possession at the time they disclosed the AI Data Sheet to the PTO. (Id.) MPS alleges that because the applicants were aware—from their testing of the evaluation boards and familiarity with the EV Kit Documentation—that the MAX782 disclosed each claim limitation when it assembled information to submit to the PTO, the applicants: (1) knew that the MAX782 was material either as prior art or as a near simultaneous invention⁴ illustrating the level of knowledge and skill of the person of ordinary skill in the art; and (2) intentionally withheld the EV Kit Documentation to mislead the PTO. (Id. at 9-10.)

16. Linear, on the other hand, asserts that the MAX782 was neither prior art nor material as a near simultaneous invention. (D.I. 266 at 15-17.) Linear asserts that it conceived and reduced to practice the inventions claimed in the patents in suit in August 1991. (Id. at 1-5.) Linear notes that its research and development project that resulted in the ’178 and ’258 patent inventions, the LTC1148 (“HES”) project, was initiated, in part, to “prevent the reversal of current flow in the inductor” and thus reduce “wasting power by taking it back out of the capacitor and shortening battery life.” (Id. at 1-2.) In order to monitor the current to the load, Linear decided to “emulate

⁴ MPS argues that because Linear’s presumptive invention date is March 23, 1993, the date the ’178 patent application was filed, the MAX782 is clearly a near simultaneous invention. (D.I. 265 at 6.) Specifically, the MAX782 controller block diagram showing the circuitry employed to implement burst mode and reverse current prevention was February 28, 1993, the schematic for the voltage regulator implemented on the MAX782 evaluation board was March 5, 1993, and the publication date on the EV Kit Documentation was March 16, 1993. (Id.)

the current in the inductor by discharging a capacitor rather than measure[ing] the current directly.” (Id. at 2.)

17. Linear further asserts that Flatness and Wilcox built a breadboard in August 1991 that practiced the claims of the ‘178 patent. (Id. at 3.) Linear contends that the Federal Circuit’s conclusion in *Linear Tech. Corp. v. ITC*, that “prior invention of monitoring voltage is sufficient to show a prior invention of the ‘monitoring the current’ limitation,” negates MPS’ argument that the EV Kit Documentation should have been disclosed because it potentially represented a prior invention date. (Id. at 17) (citing *Linear Tech. Corp. v. ITC*, 566 F.3d 1049, 1066 (Fed. Cir. 2009)). Specifically, Linear seemingly maintains that the Federal Circuit’s conclusion supports its assertion that the HES project breadboard and LTC1148 conceived and reduced to practice the reverse current prevention claims in its ‘178 patent and, therefore, establishes that the MAX782 was not prior art and thus not material. (Id.)

18. At trial, MPS’ counsel explicitly stated that MPS was not asserting the MAX 782 as prior art against the Linear patents. (See Tr. 16.)

III. LEGAL STANDARDS

19. A determination of inequitable conduct is committed to the discretion of the district court. *Kingsdown Med. Consultants v. Hollister, Inc.*, 863 F.2d 867, 876 (Fed. Cir. 1988) (*en banc*), *cert. denied*, 490 U.S. 1067 (1989). As a general matter, patent applicants and their attorneys have a duty of candor, good faith, and honesty in their dealings with the PTO. 37 C.F.R. § 1.56(a). The duty of candor and honesty includes the duty to disclose to the PTO material information known to the patent applicants, or their patent attorneys. *Elk Corp. of Dallas v. GAF Bldg. Materials Corp.*, 168 F.3d 28, 30 (Fed. Cir. 1999). The court may find inequitable conduct

where there has been a breach of the duty of candor, good faith, and honesty. *Id.* Upon a finding of inequitable conduct, the entire patent is rendered unenforceable. *Kingsdown*, 863 F.2d at 877.

20. The Federal Circuit clarified the legal standards for inequitable conduct in *Therasense v. Becton Dickinson & Co.*, No. 2008-1511, 2011 WL 2028255 (Fed. Cir. May 25, 2011), in an opinion that was issued after completion of the bench trial and post-trial briefing in the above-captioned case. Under *Therasense*, an accused infringer asserting inequitable conduct “must provide evidence that the applicant in question (1) misrepresented or omitted material information, and (2) did so with specific intent to deceive the PTO.” *American Calcar, Inc. v. American Honda Motor Co., Inc.*, No. 2009-1503, 2011 WL 2519503, at *10 (Fed. Cir. Jun 27, 2011). After *Therasense*, “the materiality required to establish inequitable conduct is, in general, but-for materiality.” *American Calcar*, 2011 WL 2519503, at *10. “When an applicant fails to disclose prior art to the PTO, that prior art is but-for material if the PTO would not have allowed a claim had it been aware of the undisclosed prior art.” *Id.* The Federal Circuit also noted that this standard for materiality is narrower than the standards set forth in PTO Rule 56. *Id.* at *14.

21. The *Therasense* court further held that intent and materiality are separate requirements. *Therasense*, 2011 WL 2028255, at *10. District courts “should not use a ‘sliding scale,’ where a weak showing of intent may be found sufficient based on a strong showing of materiality, or vice versa.” *Id.*

IV. CONCLUSIONS OF LAW

22. Having considered the record, the parties’ written submissions, and the applicable law, the court concludes that MPS has failed to prove by clear and convincing evidence that the MAX782 EV Kit Documentation is material. Under the new standard for inequitable conduct established by the Federal Circuit in *Therasense*, there is no longer a “balancing test” between

materiality and intent; both elements must be present before the court can find a patent unenforceable due to inequitable conduct.⁵ Since the court concludes that the materiality prong has not been met in this case, the court will find in favor of Linear on the issue of inequitable conduct.

23. At trial, MPS did not assert the MAX782 EV Kit Documentation as a basis for anticipation or obviousness. Indeed, MPS did not assert at trial – and does not assert now – that the MAX782 products are even prior art, and MPS’s counsel stated at the start of the jury trial that “[MPS is] not saying that the Max 782 is a piece of prior art.” (Tr. 16.) Rather, MPS’s materiality argument is that the MAX782 is “material” for the purposes of inequitable conduct regardless of whether the MAX782 is prior art or potentially invalidating. (E.g., D.I. 265 at 5, 15.) In support of its assertion of materiality, MPS argues that the EV Kit Documentation:

(1) is relevant under PTO Rule 56(b)(1) because it “established a *prima facie* case of materiality for virtually all the claims of the ‘178 patent,” though MPS makes no such assertion with respect to the ‘258 patent. (See D.I. 265 at 5, ¶ 15.)

(2) is relevant under PTO Rule 56(b)(2) because it refuted or was inconsistent with a position the applicant took in asserting an argument of patentability. (See *id.* at 6, ¶ 16.)

(3) is relevant under the reasonable examiner standard, regardless of whether it technically qualified as prior art, because it is “[e]vidence of near simultaneous,

⁵ The *Therasense* court recognized an exception to the general rule of but-for materiality “in cases of affirmative egregious misconduct” such as “the filing of an unmistakably false affidavit” and other “extraordinary circumstances.” 2011 WL 2028255, at *12-*13. MPS does not allege any such affirmative acts of fraud in this case, instead asserting only that Linear withheld material information from the PTO. (See D.I. 265 at 9-13.) The court concludes that the alleged misconduct, even if true, would not fall within the “extraordinary circumstances” exception to the but-for materiality rule.

independent invention” and thus “is strong evidence of the level of skill of the POSITA and thus relevant to determining what is unpatentable as obvious.

24. None of these arguments, however, come close to establishing the type of “but-for” materiality required under the *Therasense* standard. As to (2), the court simply does not see how such an inconsistency is of more than marginal relevance after *Therasense*, particularly given the *Therasense* court’s caution that the Rule 56(b)(2) standard is unsuitable for inequitable conduct because it “broadly encompasses anything that could be considered marginally relevant to patentability.” *Therasense*, 2011 WL 2028255, at *14.

25. With respect to (1), MPS has not asserted that the EV Kit Documentation is prior art, and MPS does not explain how the EV Kit Documentation could have possibly established a *prima facie* case of unpatentability if it was not prior art. Since it is not this court’s responsibility to speculate as to how the documentation might be invalidating, MPS’s failure to clarify how the documentation could have rendered the Linear patents *prima facie* unpatentable is fatal to this argument for materiality on this basis.⁶ Moreover, *Therasense* made it clear that a *prima facie* case of unpatentability under Rule 56 is itself insufficient to meet the standard of materiality for inequitable conduct, since it does not account for the possibility that “the information would be rendered irrelevant in light of subsequent argument or explanation by the patentee.” *Id.*

26. Finally, with respect to (3), the court also finds that the relevance of the EV Kit Documentation to the level of skill in the art, even when taken with MPS’s other assertions, is not sufficient to establish materiality. In the months since it issued *Therasense*, the Federal Circuit has not provided further guidance on the interplay between materiality and a jury’s

⁶ Similarly, Monolithic argues that the documentation “arguably anticipated (not merely obviated)” claims 44-47 of the ‘178 patent. (D.I. 265 at *7-*9, at ¶¶ 17-21.) Once again, however, Monolithic fails to explain how the EV Kit Documentation might have been anticipating even if it was not prior art. Since the evidence does not support a finding that the documentation is prior art, the court cannot find materiality on this basis.

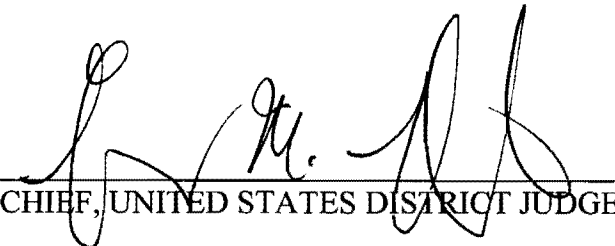
verdict on anticipation and obviousness. In the court's view, however, a jury verdict of non-obviousness creates a strong presumption against but-for materiality, particularly where, as here, the accused infringer used the allegedly withheld information for a similar purpose during the invalidity portion of the trial. At trial, MPS presented, over Linear's objection, the MAX782 as evidence of a near-simultaneous invention for the purposes of showing the level of skill in the art and as an objective indicator of obviousness. (See Tr. 13-17.) MPS brought up the MAX 782 on cross-examination (see Tr. 243-49), through deposition testimony (see Tr. 597-618), and during its closing statement (see Tr. 1085-89 & 1092-93). The jury's verdict of non-obviousness implicitly rejected MPS's arguments on that point, and the court does not perceive any basis to conclude that the PTO would have rejected the asserted claims if it had been presented, as the jury was, with more information regarding the nature of the MAX 782.

27. For these reasons, the court concludes that MPS has failed to show by clear and convincing evidence that the applicants withheld material information. The court therefore will find in favor of Linear on the issue of unenforceability.

V. CONCLUSION

For the aforementioned reasons, the court concludes that MPS has failed to establish by clear and convincing evidence that the applicants committed inequitable conduct during the prosecution of the '178 patent.

Dated: September 9, 2011


CHIEF, UNITED STATES DISTRICT JUDGE

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

LINEAR TECHNOLOGY)
CORPORATION,)
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Plaintiff,)
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)
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Defendant.)

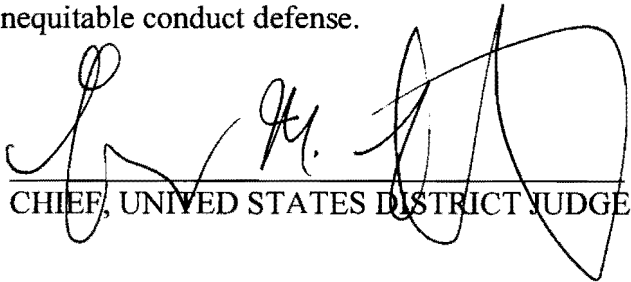
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ORDER

For the reasons stated in the court's Memorandum of this same date, IT IS HEREBY ORDERED that:

1. The '178 patent is not unenforceable due to inequitable conduct.
2. The clerk shall enter judgment in favor of the plaintiff, Linear Technology Corporation and against the defendant, Monolithic Power Systems, Inc., on Monolithic Power System's inequitable conduct defense.

Dated: September 9, 2011



CHIEF, UNITED STATES DISTRICT JUDGE