United States District Court,
N.D. California.

LINEAR TECHNOLOGY CORP,
Plaintiff.
v.
IMPALA LINEAR CORP., et al,
Defendants.
Linear Technology Corp,
Plaintiff.
v.
Unitrode Corp,
Defendant.

No. C-98-1727 VRW

Sept. 21, 2001.

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ORDER

VAUGHN R. WALKER**, District Judge.**

This case involves United States Patent No 5,481,178 (the '178 patent), which claims certain methods and devices related to synchronously switched voltage regulators. The case was brought by the alleged owner of the ' 178 patent, Linear Technology Corporation (LTC), against a number of defendants, including Unitrode Corporation, Maxim Integrated Products, Inc and Analog Devices, Inc (ADI). Presently before the court are 36 motions/ these include 21 separate motions for summary judgment or summary adjudication (Docs 406-1, 407-1, 408-1, 409-1, 410-1, 411-1, 421-1, 423-1, 427-1, 429-1, 431-1, 433-1, 436-1, 437-1, 438-1, 439-1, 445-1, 501-1, 589-2, 618-2, 621-1), four motions to dismiss (Docs555-1, 557-1, 589-1, 618-1), two motions to strike (Docs281-1, 593-1), a motion for a more definitive statement (Doc # 557-2), a motion to stay (Doc # 557-3), and three miscellaneous motions (Docs361-1, 636-1, 679-1). This order addresses all of these

motions by granting or denying them, terminating as moot any motions not expressly addressed herein and imposing a stay of all further proceedings until further order following a case management conference scheduled for October 4, 2001 at 10:00 a.m.

I

The '178 patent discloses circuits and methods for controlling circuits called synchronously switched voltage regulators. Voltage regulators control the transfer of energy from a source of power, such as a battery, to the device that uses the energy, called the "load." One example of a load are the circuits inside of a laptop computer. In fact, a common use of the voltage regulators in question here is in notebook computers that run off of batteries.

Voltage regulators control both the amount of energy that flows to the load (current) and the voltage of the electricity that is provided. Often, the voltage provided by the source differs from the voltage required at the load. In these situations, the voltage regulator either steps up the voltage (if source voltage is lower than required load voltage) or steps down the voltage (vice versa). An important property of voltage regulators is their efficiency. The less power lost in the transfer from source to load the more efficient the regulator. The efficiency of a regulator can vary at different levels of current. In notebook computers, efficient regulators are very important to preserve battery life. Since notebooks require a wide range of current levels, the development of a voltage regulator that would deliver current efficiently at wide ranges of current level became very important. The '178 patent is directed toward circuits that control just such a voltage regulator.

The control circuits of the '178 patent are used in synchronously switched voltage regulators. Synchronously switched voltage regulators have a top and a bottom switch, also known as the power transistor and the synchronous rectifier, respectively. These switches turn on and off synchronously-when one is on the other is off. When the top switch is on, current flows from the battery through the top switch and then through the inductor, charging up the output capacitor. When the top switch is off, the bottom switch is on and current ceases to flow from the battery to the output capacitor. The switches turn on and off cyclically. The regulator varies the amount of time the top switch is on relative to the bottom switch. The amount of time the top switch is on relative to the time it takes to complete one on/off cycle is called the "duty cycle." By varying the duty cycle, the regulator controls the voltage of the current that flows to the load, thereby providing a regulated voltage. The circuits within the regulator that control the variation of the duty cycle are the subject of the '178 patent.

When a load is drawing high amounts of power, a regulator that simply varies the duty cycle of the switches can efficiently provide a regulated voltage to the load. When the load draws lower amounts of power, however, synchronously switched voltage regulators can become inefficient in two ways: (1) the act of turning on and off the switches uses too great a portion of the total power being used by the load; and (2) current can reverse from the load and flow backwards through the voltage regulator's bottom switch to ground, where it is lost. The '178 patent describes two features to deal with these respective problems: "sleep mode" and "reverse current protection."

Sleep mode works by turning off both switches when load current gets sufficiently low. With the switches off, the load runs solely off the energy stored in the output capacitor. Keeping the switches off increases efficiency. Occasionally the top switch only turns on to re-charge the capacitor. Only when load current returns to higher levels does the regulator return to its normal state of operation in which the switches turn on and off synchronously.

Reverse current protection operates to de-couple the bottom switch from ground by turning it off to prevent current from reversing from the load and flowing backward through the bottom switch to ground. The bottom switch is de-coupled when the control circuits sense that inductor current is near zero.

The control circuits of the patent implement both sleep mode and reverse current protection in voltage regulators. The court construed the claims of the patent in its claim construction order (CCO) dated June 9, 1999. Doc # 238. The claims of the patent can be broken down into claims directed toward implementation of sleep mode and claims directed toward implementation of reverse current protection. The sleep mode claims are: 1-3, 31-35, 41 and 55-57. The reverse current claims are: 44-48 and 51-54. The claims are mostly means plus function apparatus claims but two (41 and 51) are method claims. The wording of the method claims, however, does not differ much from that of the apparatus claims. Claim 1 is an example of a sleep mode claim. It reads:

1. A circuit for controlling a switching voltage regulator, the regulator having (1) a switch circuit coupled to receive an input voltage and including a pair of synchronously switched switching transistors and (2) an output circuit including an output terminal and an output capacitor coupled thereto for supplying current at a regulated voltage to a load, the circuit comprising:

a first circuit for monitoring a signal from the output terminal to generate a first feedback signal;

a second circuit for generating a first control signal during a first state of circuit operation, the first control signal being responsive to the first feedback signal to vary the duty cycle of the switching transistors to maintain the output terminal at the regulated voltage; and

a third circuit for generating a second control signal during a second state of circuit operation to cause both switching transistors to be simultaneously OFF for a period of time if a sensed condition of the regulator indicates that the current supplied to the load falls below a threshold fraction of maximum output current for the regulator, whereby operating efficiency of the regulator at low output levels is improved.

'178 patent at 16:34-57. Claim 44 is an example of a reverse current claim. It reads:

44. A circuit for controlling a switching voltage regulator, the regulator having (1) a switch circuit coupled to receive an input voltage and including a pair of synchronously switched switching transistors and (2) an output circuit including an output terminal and an output inductor coupled thereto for supplying current at a regulated voltage to a load, the circuit comprising:

a first circuit for monitoring a signal from the output terminal to generate a first feedback signal;

a second circuit for generating a first control signal during a first state of circuit operation, the first control signal being responsive to the first feedback signal to vary the duty cycle of the switching transistors to maintain the output terminal at the regulated voltage; and

a third circuit for monitoring the current to the output terminal to generate a second control signal during a second state of circuit operation when the monitored current compares in a predetermined manner to a threshold indicative of a polarity reversal condition in the output inductor, said second state causing one of said switching transistors to be maintained OFF, such that the switch circuit is prevented from coupling the

output circuit to ground.

'178 patent at 20:29-52.

LTC, Maxim, Unitrode and ADI all make synchronously switched voltage regulators that implement features similar to the sleep mode and reverse current protection features claimed by the '178 patent. LTC accuses Maxim, Unitrode and ADI of infringement. Maxim, Unitrode and ADI have counter-claimed for declaratory relief that their products do not infringe the '178 patent and that, in the alternative, the '178 patent is invalid.

Maxim and Unitrode each move for summary judgment of non-infringement of the sleep mode claims of the patent (Unitrode SJ 1 & Maxim SJ 2) and the current reversal claims of the patent (Unitrode SJ 2 & Maxim SJ 4). Maxim and Unitrode also move for summary judgment of invalidity of both of these types of claims (Unitrode SJ 3, 4, 5 and Maxim 1, 3, 5). Additionally, Maxim moves for summary judgment of inequitable conduct by LTC (Maxim SJ 7). Finally, Maxim and Unitrode have moved to dismiss or for summary judgment on LTC's counterclaims arising out of Maxim's purchase of Vinsant's alleged ownership rights to the patent. Maxim and Unitrode have also moved for summary judgment on LTC's affirmative defenses to Maxim's counterclaim for declaratory relief that it is a co-owner of the patent.

LTC's motions are more varied. LTC SJ 1 is for summary judgment that Maxim, Unitrode and ADI literally infringe claim 51 (the current reversal, method claim). LTC SJ 2 is for summary judgment that Ron Vinsant did not invent a claim of the '178 patent while at Teledyne Industries, Inc. LTC SJ 3 is for summary judgment that any contribution to the '178 patent made by Vinsant does not render the patent invalid or unenforceable. LTC SJ 4 asks the court for summary judgment of no inequitable conduct relating to certain "Williams materials." LTC SJ 5 requests summary judgment that ADI willfully infringed the '178 patent, if it infringed at all. Finally, LTC SJ 6 is for summary judgment that certain items are not 102(b) prior art.

To clean-up this blizzard of motions and because the court herein revisits and modifies the CCO (entered prior to assignment of this case to the undersigned), the order terminates all motions and stays all further proceedings until the parties assess the rulings herein and the court conducts a case management conference. NO FURTHER MOTIONS MAY BE FILED UNTIL AFTER THE CASE MANAGEMENT CONFERENCE AND NONE MAY BE FILED WITHOUT LEAVE OF THE COURT. The order directly addresses Maxim and Unitrode's motions related to infringement. The order moots at least some of the motions for summary judgment of invalidity but may not moot others. At oral argument, the parties expressed some interest in having the court rule on the infringement motions before the invalidity motions for two reasons: first, so the parties could discern the effect of the court's rulings on the invalidity motions and, second, so the parties would have the option of an immediate appeal of the infringement rulings, if desired. The court agrees that it makes sense to refrain from ruling on the invalidity motions at this time and will not rule on the following motions at this time: Maxim's SJ 1 (Doc # 406-1), Maxim's SJ 3 (Doc # 408-1), Maxim's SJ 5 (Doc # 410-1), Unitrode's SJ 3 (Doc # 438-1), Unitrode's SJ 4 (Doc # 439-1), and Unitrode's SJ 5 (Doc # 501-1). The court also refrains from deciding Unitrode's motion to strike (Doc # 593-1) and LTC's SJ 6 (Doc # 433-1) at this time since they are closely related to the invalidity motions. LTC's remaining motions, however, are ruled on by this order. Nonetheless, the orderly progress of the litigation requires the court to terminate all motions not ruled on herein and stay all further proceedings until the court conducts a case management conference and the parties can assess their respective positions in light of the rulings herein.

II

The summary judgment standard is the same in a patent case as in any other case. Union Carbide Corp. v. American Can Co., 724 F.2d 1567, 1571 (Fed.Cir.1984). In reviewing a summary judgment motion, the court must determine whether genuine issues of material fact exist, resolving any doubt in favor of the party opposing the motion. The burden of establishing that there is no genuine issue of material fact lies with the moving party. Celotex Corp. v. Catrett, 477 U.S. 317, 322-23, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986). If the nonmoving party would bear the burden of proof at trial, the moving party may meet its burden by pointing out-not by a conclusory statement but by demonstration-the absence of evidence to support the nonmoving party's case. Id at 325-26. Summary judgment is granted only if the moving party is entitled to judgment as a matter of law. FRCP 56(c). Conclusory allegations by experts on ultimate issues are insufficient to avoid summary judgment. Collins v. Northern Telecom Ltd., 216 F.3d 1042, 1045 (Fed.Cir.2000).

LTC bears the burden of proving infringement at trial. Wilson Sporting Goods Co. v. David Geoffrey & Assoc., 904 F.2d 677, 685 (Fed.Cir.1990). To prove infringement, LTC must show that the accused devices meet each limitation of the patent claims. S Bravo Systems, Inc. v. Containment Tech Corp., 96 F.3d 1372, 1376 (Fed.Cir.1996).

"An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the [device or method] accused of infringing." Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed.Cir.1995) (en banc), aff'd 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). In this case. the first step has already been taken. The court's construction of the claims of the '178 patent is contained in the court's CCO, filed June 9, 1999.

"The second step of the infringement analysis, i.e., comparing the properly construed claims to the device accused of infringing, is a question of fact." Karlin Technology v. Surgical Dynamics, Inc., 177 F.3d 968, 974 (Fed.Cir.1999). Summary judgment "in favor of a party is properly granted in the context of literal infringement if [there are no material factual disputes and] no reasonable jury could determine that every limitation recited in the properly construed claim either is not, or is, found in the accused device (resulting in a summary judgment of literal infringement or no literal infringement, respectively)." *Id*.

III

Unitrode and Maxim have brought motions seeking summary judgment of non-infringement of the current reversal claims and LTC has brought a motion for summary judgment of infringement of claim 51, the reverse current method claim. The three motions are closely related. Unitrode and Maxim make similar arguments, and the court's determination of their motions controls the outcome of LTC's motion.

A

Unitrode moves for summary judgment (Unitrode SJ 2) that its parts (UC1874, UC1870 and UCC1582) do not infringe the current reversal claims of the '178 patent (Claims 44-48 and 51-54). Claims 44-48 are apparatus claims, construed by the court as means plus function claims under 35 USC s. 112, para. 6, while claims 51-54 are method claims.

1

Unitrode contends that LTC has not put forward evidence that Unitrode directly infringes the method claims or that it induces the infringement of these claims by customers who purchase and use Unitrode parts. Unitrode asserts that the mere manufacture of parts capable of infringing the method claims does not itself constitute infringement. The main dispute is whether the Unitrode parts must be used in a circuit in which the current to the load could actually reverse for the method claim to be infringed.

Unitrode argues that a reversal of polarity must actually be prevented, requiring LTC to prove that Unitrode parts have been used in circuits in which current could possibly flow from the load. It is Unitrode's contention that LTC cannot make this showing. Unitrode further argues that even if LTC can show that some customer has used the parts in a circuit in which flow from the load was possible, LTC cannot show that Unitrode contributed or induced the infringement. Additionally, Unitrode submits that its parts cannot infringe the current reversal claims because they allow current to flow from the load back to the source. Finally, Unitrode argues that LTC cannot prove infringement of dependent claims 52-54 by UC1582 because that part does not monitor current to the output terminal.

LTC's main contention in response is that a device meets the current reversal claims if it protects against current reversal, regardless whether reversal was actually possible in a given use of the device. "So long as the protection feature exists it is irrelevant whether reverse current would or would not occur in any particular customer's circuit." LTC Opp to Unitrode SJ 2 B.R. at 2-3. In support of this position, LTC cites the CCO, which states that 'the purpose of the reversal protection feature is to prevent the 'output current from reversing polarity'-in other words, to prevent current from being drawn from the load." CCO at 35. LTC relies on the use of the phrase "protection feature." LTC Opp to Unitrode SJ 2 B.R. at 14.

If proof that the Unitrode parts have actually been used to prevent current reversal is necessary, LTC argues that it can prove infringement by IBM and Dell. See *id* at 15. LTC points to the use of the UC1874 in the IBM AS4G0 product and the testing by Dell of the UC3874 (which contains the UC1874) in a battery charger. With respect to contributory infringement and inducement, LTC argues that it can prove inducement based on Unitrode's data sheets. Unitrode's knowledge of the Dell testing, LTC argues, is an unresolved issue of fact. LTC also attacks Unitrode's argument 16 that its parts cannot infringe because they allow current reversal from the load into the source. LTC points to the CCO which refers to "drawing power from the load to ground." CCO at 38. Finally, LTC argues that UC1582 does in fact monitor current to the output terminal, or at the least, performs an equivalent function.

In its reply, Unitrode argues that LTC's focus on protection against current reversal, rather than prevention of current reversal is tantamount to finding infringement merely because the accused devices are capable of infringing the method claims. Unitrode also notes that the CCO requires prevention of average (not instantaneous) current reversal. Turning to proof of infringement under its construction of claim 51, Unitrode argues that LTC's evidence of infringement by Unitrode, IBM and Dell is insufficient. Unitrode's next argument is that Festo Corp. v. Shoketsu Kinozoku Kogyo Kabushiki Co., Ltd., 234 F.3d 558 (Fed.Cir.2000) (en banc), precludes LTC from proving infringement of claim 51 under the doctrine of equivalents. Finally, Unitrode argues that its data sheets do not show its intent to encourage infringement because they discuss only use of the Unitrode devices 7 to prevent reverse instantaneous inductor current. Furthermore, Unitrode argues that LTC has not shown that Unitrode knew about the '178 patent when the data sheets were published.

Essentially, there are five issues before the court: (1) In order to infringe the method claims, must reversal of current actually be prevented or is mere protection from an impossible reversal enough? (2) Has LTC put

forward proof of direct infringement, as defined in response to question (1), sufficient to withstand this motion for summary judgment? (3) Has LTC put forward evidence of inducement by Unitrode? (4) Does the fact that Unitrode parts allow current to flow from the load to the source preclude infringement? and (5) Does UC1582 meet the monitor inductor current limitation of claims 52-54, either directly or under the doctrine of equivalents? In answering these questions, the court has also considered the arguments made by LTC and Unitrode in connection with LTC's first motion for partial summary judgment.

-> Reversal of current must actually be prevented to infringe the method claims.

As a threshold matter, the court reiterates what was made clear in the CCO: the current reversal claims protect against reverse average current (i e, drawing power from the load), not reverse instantaneous current. See CCO at 35. This still leaves open the question when the method claims are infringed. There can be no real dispute that the mere manufacture and sale of devices capable of being used to infringe the method claim does not constitute infringement. See Embrex Inc. v. Service Engineering Corp., 216 F.3d 1343, 1349 (Fed.Cir.2000); Mendenhall v. Cedarapids, Inc., 5 F.3d 1557, 1579 (Fed.Cir.1993) ("The manufacture and sale of a drum mixer cannot directly infringe this method patent; it is directly infringed only when such drum mixers are used in the United States to make HMA by the claimed method."); see also the court's discussion of Maxim's summary judgment four. LTC's reliance on the phrase "protection feature" cannot compel a contrary conclusion. While the CCO did use the word protection (once), the term used in claim 51 is "prevent." But one cannot be said to have "prevented" something that could not have happened absent the alleged preventative act. Contrary to LTC's assertion, it is relevant whether reverse current could occur in a particular device. The method claims specifically state that one step is "maintaining one of said switching transistors OFF * * * so as to prevent the current to the load from reversing polarity." '178 patent at 21. If the current from the load is unable to reverse polarity, then the reversal cannot be prevented and this step of the claims cannot be met.

LTC argues that the court rejected this view of claim 51 in the CCO because it did not adopt defendants' construction of claim 51 which would have required "that the load current would have reversed but for the action having been taken." See LTC SJ 1 Reply Br at 4. The court did not expressly reject this view; it simply did not adopt the language advocated by defendants. As far as the court can discern today, the adopted construction may have been thought implicitly to embody this limitation. In any event, the court's present reading of the plain claim language compels this result. There is a material difference between the method claims and the apparatus claims in that LTC must prove that the method was actually practiced before infringement can be found.

LTC further argues that the Unitrode devices increase efficiency by preventing reverse instantaneous current by turning off the bottom transistor. This may be true, but the current reversal claims, as construed by the court, do not claim a method for increasing efficiency by preventing reverse instantaneous current. The court's CCO makes clear that performing this function does not meet the claims of the patent. Preventing reverse instantaneous current prevents current from reversing from the load (reverse average current), but if there is no possibility of current reversal from the load, no prevention is possible.

Unitrode's motion for summary judgment four stated:

This invalidity analysis assumes that the combination meets the requirement of claim 51 that the regulator be prevented from drawing power from the load. See CCO at 35, Ex. C. This limitation is in fact met by the combination only under LTC's construction of the limitation as used in its infringement case against

Unitrode; as set forth in Unitrode's Motion for Summary Adjudication Number 2, Unitrode contends that a narrower construction is required by the patent and the CCO. Unitrode, however, provides this invalidity analysis in this motion in the event that the Court rejects Unitrode's position regarding this limitation and adopts the broader construction advocated by LTC.

Unitrode SJ 4 B.R. at 9 n. 6. Because the court has adopted Unitrode's construction of the current reversal method claims, Unitrode's summary judgment four is likely moot.

-> LTC has not put forward proof of direct infringement by Unitrode or anyone else sufficient to withstand this motion for summary judgment.

Infringement by Unitrode. LTC has put forward nothing but conclusory allegations that Unitrode has practiced the method claimed by the current reversal method claims. See LTC Opp to Unitrode SJ 2 B.R. at 13 ("It directly infringes the method claims when it tests those circuits."); LTC SJ 1 Br at 11 ("The defendants themselves have each used their infringing parts to carry out the method of claim 51. * * * They also build and test demonstration circuit boards which include the infringing parts and carry out the infringing method."). No evidence is cited in support of the first conclusion and the evidence cited in support of the second (Blauschild Decl (RB I) Ex B at 14-32) does not show that Unitrode used its parts to prevent load current reversal. Essentially, LTC has put all its eggs in one basket: convincing the court that it need not prove that Unitrode used its parts actually to prevent reverse load current. Having failed in that endeavor, LTC does not put forth evidence sufficient to defeat Unitrode's motion for 20 summary judgment of non-infringement, with respect to claims of 21 direct infringement of the current reversal method claims (51-54) by Unitrode. In fact, LTC does not even come close to making this showing. Consequently, summary judgment for Unitrode is GRANTED as to this issue.

Infringement by others. LTC argues that it has shown infringement by IBM and Dell. With respect to IBM's alleged infringement, LTC cites the deposition testimony of Michael Miller. Miller states that in two situations the UC1874 could prevent load current reversal in the IBM AS400. Makman Decl (Opp to Unitrode SJ 1-4), Exh 14 at 12-13. Unitrode argues that neither situation involves load current reversal. It argues that in the first scenario, the current reversal prevented is instantaneous current, not average current. The second scenario, Unitrode argues, involves drawing current from a source other than the load and has not been proven to occur in any event. In support of these arguments, Unitrode presents the brief opinion of its expert that neither situation is one in which load current reversal is possible. Erickson Reply Decl at para.para. 15-16. Unitrode also objects to a portion of Miller's testimony as inadmissible speculation. The court concludes, however, that the testimony is admissible. Miller simply testifies about the possible operation of UC1874 in the IBM AS400.

LTC has not had the opportunity to respond to any of Unitrode's arguments (they were made in Unitrode's reply) and the court is left with Miller's testimony and the contradictory rebuttal by Unitrode. The rebuttal has not convinced the court that no factual dispute exists with respect to whether the UC1874 was used by IBM in an infringing manner. Thus, a factual dispute may exist whether UC1874 has been used to infringe.

It does not appear that LTC has presented any evidence that UC1870 or UCC1582 have ever been used in an infringing manner. Thus, as to these parts, Unitrode's motion for summary judgment of non-infringement with respect to indirect infringement is GRANTED.

-> LTC has put forward sufficient evidence of intent to induce infringement to withstand summary

judgment.

For Unitrode to be found liable for inducing infringement of the '178 patent, LTC must prove that: (1) the patent was directly infringed; (2) Unitrode knew about the existence of the patent; and (3) Unitrode intended to cause the acts of infringement. See 35 USC s. 271(b); Manville Sales Corp. v. Paramount Systems, Inc., 917 F.2d 544, 553 (Fed.Cir.1990); Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469 (Fed.Cir.1990). As discussed above, LTC has shown there may be a factual dispute with respect to infringement of the patent by IBM using at least one Unitrode part. Turning to the second element of inducement, Unitrode concedes that it knew about the patent by at least January 1997. See Unitrode Opp to LTC's SJ 1 Br at 20. No evidence has been presented to the court about Unitrode's knowledge prior to that date.

The evidence of intent to induce infringement presented by LTC consists solely of three data sheets describing the Unitrode parts. See Erickson Decl, Exh I, J & K. First, there is a question of timing. Unitrode argues that since the data sheets were produced before it had notice of the patent, it cannot be liable for inducement. But Unitrode concedes that it continued to distribute the data sheets after it had knowledge of the patent. The court agrees with LTC that continued distribution can show intent to induce infringement. The date of creation of the sheets should not be controlling. Unitrode could have decided to stop distributing the sheets at any time, but it chose not to.

There is also a dispute about what the data sheets state about the Unitrode products. LTC contends that these data sheets show intent because they describe the current reversal protection features of the products. Unitrode argues that they only describe prevention of instantaneous current reversal, not load current reversal. LTC appears to concede that this is true, stating in its motion for summary judgment one: "The data sheets explain that each of the accused devices has circuitry that monitors inductor current to turn OFF the bottom switch when instantaneous[ ] inductor current is near zero." LTC SJ 1 Br at 13. In its reply, however, LTC argues that shutting off the bottom switch based on instantaneous current levels necessarily prevents average current reversal.

The court has concluded that the mere use of a product with the load current protection feature, if load current reversal is not possible, does not infringe claim 51. So preventing reverse instantaneous current cannot infringe claim 51 unless it also prevents reverse load current. Nonetheless, the court concludes that the data sheets are probative of an intent to induce infringement of claim 51 as defined in this order. It is clear that the data sheets advocate the use of the UC1874 and UC1870 in notebook computers. See Erickson Decl, Exh I & J. LTC argues that use of the Unitrode products in notebook computers constitute's infringement even under the construction of claim 51 adopted by the court because capacitors in the computers can cause reverse load current. See LTC SJ 1 Reply Br at 6, 6*. Unitrode has not shown as a matter of law that this is not true. In this way, the data sheets are evidence of intent to induce infringement.

Consequently, the court concludes that whether Unitrode had the intent to induce infringement of claim 51 by its customers may be a disputed question of fact. Unitrode's motion for summary judgment on this issue is DENIED.

-> The fact that Unitrode parts allow current to flow from the load to the source does not preclude infringement.

Unitrode focuses narrowly upon language in the CCO stating that the main point of the current reversal claims is to prevent current from being drawn from the load and thereby attempts to ignore the plain

language of claim 51. Step (c) of claim 51 reads: "maintaining one of said switching transistors OFF for a period of time following the first state of circuit operation to de-couple the output circuit from ground during the period of time so as to prevent the current to the load from reversing polarity." '178 patent at 21:23-27. The language makes clear that prevention of load current reversal is achieved by de-coupling the output circuit from ground. Any load current reversal not prevented by this act of de-coupling is not embraced by the claim. Thus, it is irrelevant whether or not the Unitrode parts allow current to flow from the load to the source via the top transistor. Claim 51 simply is not directed toward preventing this from occurring. See discussion of Maxim's SJ 4, below.

-> Whether UC1582 meets the monitor inductor current limitation of claims 52-54, either directly or under the doctrine of equivalents, is moot.

The court granted summary judgment for Unitrode with respect to direct infringement by any of its parts and with respect to indirect infringement by the UC1582 and UC1870. Thus, the court need not consider Unitrode's monitor current argument.

In sum, Unitrode's motion for summary judgment of non-infringement of the method claims is GRANTED with respect to direct infringement and indirect infringement by Unitrode customers using the UC1582 and UC1870 but is DENIED with respect to indirect infringement by IBM using the UC1874.

2

In its motion for summary judgment, Unitrode took the position that in order to prove infringement of both the method claims and the apparatus claims, LTC would have to prove that Unitrode parts were connected to loads capable of causing load current reversal. The court has concluded that Unitrode is correct with respect to the method claims. The argument fails, however, with respect to the apparatus claims. Those claims are infringed when parts that contain the claimed structures and that can perform the claimed functions are manufactured. See discussion below in connection with Maxim's SJ 4. Unitrode appears to recognize this. In its reply brief, it no longer presents this argument for non-infringement of the apparatus claims. Instead, Unitrode makes three arguments for non-infringement: (1) the Unitrode parts allow current to be drawn from the load to the source; (2) UCC1582 does not infringe because it does not monitor output current; and (3) none of the Unitrode parts contains the "second circuit" means-plus-function element. The court will quickly address the first argument and then turn to the third argument, which it finds dispositive of the motion.

-> Drawing current from the load to the source does not prevent a finding of infringement.

The first argument is the same argument made with respect to claim 51. The court in its CCO addressed claims 44 and 51 together so this is not surprising. But again, the court reaches the same conclusion. The language of claim 44 also expressly 3 describes the prevention of the second circuit "from coupling the 4 output circuit to ground." '178 patent at 20:50-51. The fact that current might flow from the load to the source in the Unitrode parts does not prevent infringement of claims 44-48. On this issue, summary judgment for Unitrode is DENIED.

-> None of the Unitrode parts contains the "second circuit" means-plus-function element.

Unitrode's third argument in favor of its motion for summary judgment is that the UC1874, UC1870 and UCC1582 all lack the "second circuit" element of claims 44-48. Unitrode argues that the pulse-width

modulation (PWM) circuit used in its parts varies the duty cycle of its regulators in a way different from the constant off-time, one-shot circuit that Unitrode argues is claimed by the patent. It further argues that the PWM circuit is not the equivalent of the one-shot circuit.

LTC does not seriously contend the PWM and one-shot circuit vary the duty cycle in the same way or have the same structure. Rather, LTC argues that both circuits are embraced by the patent. In support of this argument, LTC relies on the court's construction of claim 34, a sleep mode claim. The list of structures corresponding to that claim includes a "pulse-width modulator circuit." See CCO at 22. The CCO cites the patent specification at 9:18-21. Indeed, the patent states: "For example, one-shot circuit 25 could be replaced with a pulse-width modulator circuit that provides a pulse-width modulated signal in response to a control signal."

But for whatever reason, the court did not construe claim 44 to include a pulse-width modulator circuit. See CCO at 33. Rather it construed claim 44 as follows: "The second circuit is a circuit that is distinct from each of the first and third circuits, and shall be construed under s. 112, para. 6 as the combination of transconductance amplifier 38, reference voltage 37, current comparator 39, constant time one-shot circuit 25 which outputs the first control signal, and equivalents thereof." *Id*. There is no reason for this inconsistency across the claims of the patent. Either a PWM circuit is a corresponding structure for all the claims employing a "second circuit" means or none. The language of claims 34 and 44 with respect to the second circuit limitation is identical and the function of the second circuit in each claim is identical. At oral argument, the parties agreed that a PWH circuit should be deemed a corresponding structure in all of the means plus function claims referencing a "second circuit" or none.

Unitrode joins Maxim's request that the court revisit its claim construction to the extent the court included a PWM circuit in claim 34. See Maxim SJ 2 Reply Br at 14-15. The court agrees that the issue should be revisited and has the authority to do so. See Continental Lab Products, Inc. v. Medax Int'l Inc., 1999 WL 33116499 at *4-5 (S.D.Cal.1999).

Maxim argues that the phrase "pulse width modulator circuit" lacks the definiteness to constitute a corresponding structure. The court agrees. The only reference to the alternative use of a PWM circuit that LTC cites comes in lines 18-21 of column 9 of the patent. Those lines state: "For example, one-shot circuit 25 could be replaced with a pulse-width modulator circuit that provides a pulse-width modulated signal in response to a control signal." But, the deposition testimony of Milt Wilcox establishes that the term "pulse width modulator" is essentially generic. It does not reference a specific structure. See Counsel Decl, Exh 191, Wilcox Depo at 656:22-660:21.

A court construing a means plus function claim must include alternative structures disclosed in the specification. Serrano v. Telular, 111 F.3d 1578, 1583 (Fed.Cir.1997). But the court only need do so if the specification describes a specific alternative structure. Fonar Corp. v. General Electric Co., 107 F.3d 1543, 1551-52 (Fed.Cir.1997). The court therefore concludes that it was an error to include "combinations having pulse-width modulator circuit that provides a pulse width modulated signal in response to a control signal," in claim 34 and revisits that construction. Since this was the only claim for which the court listed a PWM circuit as a corresponding structure, the court need not reconsider the construction of any other claims.

Having concluded that the patent specification does not disclose a fixed frequency PWH circuit as a corresponding structure to the "second circuit" limitation of the '178 patent, the court must determine whether that limitation is nonetheless met by the PWM circuit used by Unitrode. "Literal infringement of a

claim containing a means clause requires that the accused device perform the identical function as that identified in the means clause and so with structure which is the same as or equivalent to that disclosed in the specification." Serrano v. Telular Corp., 111 F.3d 1578, 1582 (Fed.Cir.1997) (quoting Micro Chem. Inc. v. Great Plains Chem. Co., 103 F.3d 1538, 1547 (Fed.Cir.1997)). Under the construction of claim 44 adopted by the court in this order, it is clear that the structure used in the Unitrode parts is not the same as the claimed structure, a variable frequency, fixed off-time, one-shot circuit.

A closer question is whether the circuits are equivalent. This appears to be a question of fact. Odetics, Inc. v. Storage Technology Corp., 185 F.3d 1259, 1268 (Fed.Cir.1999). Circuits are equivalent if "the differences between the structure in the accused device and any disclosed in the specification are insubstantial." Chiuminatta Concrete Concepts v. Cardinal Industries, 145 F.3d 1303, 1309 (Fed.Cir.1998). A change is unsubstantial if it "adds nothing of significance to the structure, material, or acts disclosed in the patent specification." Valmont Indus., Inc. v. Reinke Mfg. Co., 983 F.2d 1039, 1043 (Fed.Cir.1993). The equivalence inquiry under s. 122, para. 6 is related to the inquiry under the doctrine of equivalents. Odetics, Inc., 185 F.3d at 1267. "[A]n accused device is equivalent when it performs the identical function in substantially the same way to achieve substantially the same result." Caterpillar Inc. v. Deere & Co., 224 F.3d 1374, 1379 (Fed.Cir.2000).

LTC briefly makes the argument that Unitrode's variable off-time PWM circuit is the equivalent of the patent's constant off-time circuit. See LTC Opp to Unitrode SJ 1 Br at 20*-21*. LTC offers the declaration testimony of Mr Blauschild that in his opinion the structures are equivalent. See Blauschild Decl (RB I), Exh B at 81-87. The statement in the patent that a PWM circuit can replace a one-shot circuit also appears to support LTC's argument. Wilcox's testimony that the term "PWM circuit" has little specific meaning, however, undermines this support. Furthermore, Dr Erickson states that the circuit contained in the UC1874 is not interchangeable with the one-shot circuit of the patent. See Erickson Decl para. 121. Regardless, interchangeability does not necessarily mean that two structures are equivalent. See Chiuminatta Concrete Concepts, 145 F.3d at 1309.

In support of the notion that the PWM circuit is not the equivalent of the one-shot circuit, Unitrode offers the testimony of Dr Erickson. Erickson concludes that the PWM and one-shot are not equivalent. See Erickson Decl para.para. 113-121, 142-145. Specifically, Erickson asserts that the fixed frequency approach of the PWM provides a number of benefits to the regulator that the variable frequency approach of the one-shot lacks. Erickson Decl at para.para. 121, 144. Mr Blauschild does not deny that there are benefits to the fixed frequency approach. Blauschild further does not deny that there are real differences between the way the two circuits vary the duty cycle of a regulator. Rather, Blauschild focuses on some similarities between the two circuits. But it is undisputed that the PWM and the one-shot take different approaches to varying the duty cycle, i e, the "way" they achieve this function differs.

Given the undisputed benefits gained by the fixed frequency approach of the PWM circuit and the completely different way in which these different types of circuits vary the duty cycle (one by fixing the frequency and the other by varying it), the court concludes that no reasonable jury could find them to be equivalent. Compare Signtech USA, 174 F.3d 1352, 1357 (Fed.Cir.1999) (finding ink sprayhead using "a single constant air flow and a pulse-width modulated ink flow" to be not equivalent as a matter of law to a sprayhead using "pulse-width modulated constant air flow to control ink delivery").

As a result, Unitrode's motion for summary judgment that the UC1874, UC 1870 and UCC1582 do not infringe claims 44-48 must be GRANTED.

In sum, Unitrode's motion for summary judgment two (Doc # 437-1) is GRANTED with respect to the apparatus claims and the allegations of direct infringement with respect to the method claims. The motion for summary judgment is DENIED with respect to the allegation of inducement of infringement by IBM with the UC1874 part.

B

Maxim makes three arguments in support of its motion for summary judgment (Maxim SJ 4) of non-infringement of the current reversal claims (44-48, 51-54); (1) Maxim devices have never been connected to loads capable of generating reverse load current; (2) Maxim devices would not prevent reverse load current even if they were used in loads capable of generating it; and (3) Maxim devices lack the "second circuit" element of claims 44-48. Plainly, these arguments track in part those made by Unitrode discussed above.

LTC responds to each. First, it argues that Maxim parts need not be used actually to prevent reverse load current so long as they are capable of preventing it. This is especially true, it argues, with respect to the apparatus claims. Alternatively, LTC argues that Maxim parts are used with loads capable of supplying reverse current. Second, LTC argues that the kind of reverse load current that Maxim parts allow is not the kind to which the patent refers. Finally, LTC argues that the Maxim parts contain structures identical or equivalent to the "second circuit" of claims 44-48.

Maxim in reply refines its argument that its parts must be more than merely capable of infringement. Maxim also asserts that LTC has failed to show that Maxim parts are actually used to prevent load reversal. Next, Maxim expands its argument that its parts allow reverse load current. Finally, Maxim reiterates its second circuit argument.

-> LTC must show that the parts are used actually to prevent load current reversal to show infringement of the method claims but not the apparatus claims.

Maxim and LTC engage in much the same argument that LTC and Unitrode do. Maxim believes that in order for LTC to prove infringement it must show that the Maxim parts are being used with loads capable of causing load current to reverse. It is only in these situations (if they occur) that the Maxim parts can actually prevent reverse load current and thereby infringe the patent. LTC believes that as long as Maxim has made a part that is capable of preventing reverse load current then it has infringed the patent. The court has concluded that both parties are correct, in part.

At issue are claims 44-48, apparatus claims, and claims 51-54, method or process claims. It is well-settled that to breach a method or process claim, a party must complete the steps of the process; selling a device that can be used to perform the method does not constitute infringement. See Mendenhall v. Cedarapids, Inc., 5 F.3d 1557, 1579 (Fed.Cir.1993) ("The manufacture and sale of a drum mixer cannot directly infringe this method patent; it is directly infringed only when such drum mixers are used in the United States to make HMA by the claimed method."); Joy Technologies, Inc. v. Flakt, Inc., 6 F.3d 770, 773-775 (Fed.Cir.1993); Embrex Inc. v. Service Engineering Corp., 216 F.3d 1343, 1349 (Fed.Cir.2000); Donald S Chisum, *Chisum on Patents* s. 16.02[6] at 16-60. To infringe claims 51-54, Maxim must have performed the method therein described. One step of that method is "maintaining one of said switching transistors OFF * * * so as to prevent the current to the load from reversing polarity." '178 patent at 21. The court concludes that Maxim is correct that to prevent the current to the load from reversing polarity, a part must be used with a load capable of creating reverse load current. One cannot prevent something that cannot occur. See

discussion above in connection with Unitrode's SJ 2.

The apparatus claims, however, are a different matter. The court in *Joy Technologies, Inc,* made this precise contrast between method claims and apparatus claims, stating: "Joy is basically seeking to convert its method claims into apparatus claims." Joy Technologies, Inc., 6 F.3d at 775-76. An apparatus claim is infringed if the claimed device is manufactured. When the claim is a means plus function claim, literal infringement requires "that the accused device perform the identical function as that identified in the means clause and do so with structure which is the same as or equivalent to that disclosed in the specification." Serrano v. Telular Corp., 111 F.3d 1578, 1582 (Fed.Cir.1997) (quoting Micro Chem., Inc. v. Great Plaina Chem. Co., 103 F.3d 1538, 1547 (Fed.Cir.1997)).

Thus, LTC argues that as long Maxim makes parts whose structures are capable of performing the claimed function, then Maxim infringes. In this particular case, LTC's argument is persuasive. Chisum states: "Court decisions indicate that making a device 'capable of infringing use' constitutes infringement even though it may be capable of noninfringing use." Chisum, *Chisum on Patents* s. 16.02[3][c] at 16-40. To be sure, there is a line of cases that holds that a device which is capable of infringing if altered does not infringe if the manufacturer did not design it to be altered. See, e g, High Tech Med. Instrumentation v. New Image Ind., 49 F.3d 1551 (Fed.Cir.1995). In its reply brief, Maxim cites a number of these cases. They are not controlling here.

If the court accepts for a moment that Maxim's parts could carry out the function of preventing reverse load current if attached to a load capable of causing reverse load current, the manufacture of these parts is sufficient to constitute infringement of the apparatus claims. Whether or not anyone actually uses the parts in this way is not relevant. Unlike the device in *High Tech Med,* under the present assumption, the Maxim parts need no alteration to perform the claimed function. Thus, if the Maxim parts contain the structures that perform the function claimed in the patent, LTC need not show use of the parts to prove infringement. Of course, if the Maxim parts do not contain structures capable of performing the claimed function, then there can be no infringement. The argument that the parts are not capable of performing the functions called for in the claims will be discussed below.

Applying the court's conclusions that LTC must show use of the claimed method to prove infringement of the method claims but not the apparatus claims, the court determines that Maxim's motion for summary judgment must be granted with respect to direct infringement of the method claims. LTC has put forth absolutely no evidence that Maxim has used its parts with loads capable of causing reverse load current. Thus, Maxim has not used the method of claims 51-54 and cannot be found to have directly infringed these claims.

It is a closer question whether LTC has created a triable issue of fact whether Maxim customers have infringed the method claims (making indirect infringement by Maxim possible). The sum total of LTC's allegations in opposition to Maxim's motion on this issue are contained in two paragraphs at page 14 of its opposition brief to Maxim's SJ 4 motion. There LTC cites evidence that two Maxim parts (MAX797 and MAX782) are used in IBM Thinkpad laptop computers and one (MAX786) FN1 is used in Dell Platinum and Titanium computers and that in these uses the loads to which the parts are connected are capable of providing reverse load current. See Blauschild Decl (RB I) at para.para. 36-42.

FN1. MAX797 is found in Dell computers but it is the load to which the MAX786 is attached, thus the MAX797 is not used to infringe the method claims by Dell.

Maxim responds by arguing that in the IBM Thinkpad the load is only capable of supplying reverse load current if a capacitor in the load has been overcharged. Maxim argues that there is no evidence that overcharging is possible. With respect to the Dell computers, Maxim argues that the configuration employed was not intended by Maxim and that in any event, "load current almost certainly would not reverse in real-world applications." Maxim Reply at 5. Finally, Maxim objects to the admissibility of the Blauschild declaration on which LTC relies. Specifically, "Maxim objects to the portions of those declarations that reflect new work and new opinions regarding (among other issues) the IBM Thinkpad, the Dell Platinum, and the Dell Titanium notebook computers, which are beyond the scope of Blauschild's expert reports." Maxim's Objection at 2. LTC has submitted no opposition to Maxim's objection.

It is settled that evidence relied on in support of or opposition to a motion for summary judgment must be admissible. Courtney v. Canyon Television & Appliance Rental, Inc., 899 F.2d 845, 851 (9th Cir.1990); Hal Roach Studios, Inc v. Richard Feiner & Co., Inc., 896 F.2d 1542, 1555 (9th Cir.1989). Maxim contends that Blauschild's opinions with respect to the notebook computers are inadmissible because they are not contained in Blauschild's expert reports. Under FRCP 37(c), "A party that without substantial justification fails to disclose information required by rule 26(a) or 26(e)(1) shall not, unless such failure is harmless, be permitted to use as evidence at a trial, at a hearing, or on a motion any witness or information not so disclosed." LTC has not disputed that Blauschild's opinions with respect to the notebook computers were not timely disclosed. Unless the failure was harmless, the evidence must be excluded.

The court cannot conclude that the failure to disclose was harmless. To the contrary, Maxim's ability to respond to Blauschild's opinion was likely hampered. For this reason, the court concludes that; the Blauschild opinions regarding the notebook computers should not be considered in this motion for summary judgment. Because this is the only evidence LTC puts forward to oppose summary judgment, Maxim's motion must be GRANTED with respect to the indirect infringement claims.

Earlier, the court assumed that the Maxim parts were capable of infringing the claims if attached to a load that could create reverse current. Maxim contends, however, that when its parts are attached to loads capable of causing load current reversal, they do not function properly. The parts either cannot maintain a regulated output voltage or they shut down. See Grimm Decl at para. 3. This is a strong argument. If the devices do not actually perform when connected to a load that enables load current reversal, then they cannot infringe either the apparatus claims or the method claims. If they do not perform the functions of preventing load current reversal and providing a regulated output voltage, then they cannot contain structures that perform functions identical to those of the claims. And if the devices do not function properly, they are incapable of performing the steps of the method claims.

This argument by Maxim, however, was improperly raised for the first time in its reply brief. See William W Schwarzer, A Wallace Tashima and James M Wagstaffe, *Federal Civil Procedure Before Trial* s. 12:107 at 12-30 (Rutter Group Practice Guide, 2000) hereinafter Schwarzer). LTC has not had an opportunity to respond. Consequently, the court will not consider this ground at this time. If necessary, Maxim may, with leave of court after expiration of the stay imposed herein, bring another motion for summary judgment.

In sum, the court agrees with Maxim that LTC can prevail on the method claims only if it shows that its parts were used actually to prevent reverse load current. LTC has presented no evidence that Maxim itself has used the parts in this manner. Similarly, LTC has presented no admissible evidence sufficient to create

an issue of disputed fact whether IBM and Dell have used at least some Maxim parts to infringe the method claims. For this reason, with respect to the method claims, Maxim's motion for summary judgment is GRANTED.

To show infringement of the apparatus claims, however, LTC need only show that the devices are capable of performing the intended functions; it need not show that the devices have been used to perform the functions. Thus, the above argument does not dispose of the apparatus claims. For this reason, the court now turns to Maxim's other arguments.

-> Maxim misreads the limitation related to prevention of reverse load current and de-coupling.

Maxim makes a number of arguments about why its products do not meet the limitations of claims 44-48 and 51-54 because they purportedly do not prevent reverse load current. In its motion, Maxim argues that when its parts are connected to loads capable of causing reverse load current, load current actually does reverse; current flows from the load. Thus, Maxim argues that its parts do not prevent "any and all power being drawn from the load." CCO at 36. Apparently, the reverse current flow measured by Maxim was from the load to the output capacitor.

LTC argues that this kind of reverse current flow was not the kind of current reversal the patent was directed to preventing. The court agrees. Maxim's argument is much like Unitrode's. Both parties seize on the CCO's discussion of drawing power from the load. The court in the CCO, however, did not re-write the patent 4 to claim a system for preventing load current reversal generally. Rather, the court construed which type of current reversal (instantaneous or average) that was to be prevented by de-coupling the bottom transistor from ground. The focus of claims 44 and 51 is on de-coupling the bottom transistor. The court has agreed with defendants that prevention of reverse load current is an integral part of the claims, but the court cannot agree that the patent as construed by the court is directed toward preventing reverse load current by any means. Rather, the patent is directed toward preventing reverse load current via the bottom transistor. Consequently, the court rejects Maxim's argument that reverse load current from the load to the capacitor necessitates a finding of non-infringement.

Maxim argues in its reply that the claims limitations are not met because its devices allow reverse load current to flow to ground through means other than the bottom transistor. It argues that current flows to ground through the Schottky diode as well as through another path. But given the court's conclusion above, these facts cannot support a finding of non-infringement. The current reversal the patent is directed toward preventing is through the bottom transistor. Thus, Maxim's arguments that its parts allow reverse load current do not warrant summary judgment of non-infringement.

In its reply, Maxim makes two new arguments for non-infringement related to the current reversal/de-coupling limitation. First, Maxim argues that three of its parts (MAX1630, 1631 and MAX1632) actually turn on the bottom transistor in overvoltage situations. For some reason, Maxim did not raise this argument in its motion and LTC has not had a chance to respond to it. This was improper. Schwarzer, s. 12:107 at 12-30. As a result, the court declines to consider this ground for summary judgment at this time. If necessary, Maxim may, with leave of the court after expiration of the stay, bring a new motion for summary judgment on this point.

Maxim's second new argument is that its parts do not de-couple the output circuit from the ground because of the presence of the Shottky diode. This argument is also new in the reply brief but it was raised by

Maxim in its opposition to LTC's motion for summary judgment two so LTC had an opportunity to reply to it. Thus, the court will consider the argument. The court concludes, however, that Maxim again misreads the claims and the court's CCO. The court concludes that de-coupling cannot be separated from the act of maintaining one of the transistors off. Maxim's reading would mean that figure 7 of the patent falls outside of the claims. The court is unwilling to do that absent language more plainly separating de-coupling and the turning off of the bottom transistor. The court therefore, rejects this argument for non-infringement.

-> A variable off-time, pulse width modulation circuit is neither claimed by the patent nor the equivalent of the claimed one-shot circuit.

Maxim's final argument is that its devices do not contain the "second circuit" means called for in the apparatus claims. This dispute is the same as the one between LTC and Unitrode. It turns on whether or not the variable off-time, pulse width modulator circuit used in the Maxim parts is either (1) disclosed in the patent as a corresponding structure, or (2) the equivalent of the constant off-time, one-shot circuit.

The court considered an identical argument in Unitrode's motion for summary judgment two. There the court determined that the structure of a variable off-time, fixed frequency PWM circuit was not adequately disclosed in the patent and thus is not a corresponding structure. For this reason, the court concluded that the construction of claim 34 should be amended to delete reference to a PWM circuit. Finally, the court concluded as a matter of law that the variable off-time, fixed frequency circuit used by Unitrode was not the equivalent of the fixed off-time, variable frequency circuit structure claimed in the patent. It appears that the structure employed by the Maxim parts is the same as that used in the Unitrode parts. Consequently, the court GRANTS Maxim's motion for summary judgment of non-infringement of the apparatus claims based on the second circuit element.

In sum, Maxim's motion for summary judgment four (Doc # 409-1) is GRANTED with respect to the apparatus claims and the method claims.

C

LTC moves for summary judgment that Maxim, ADI and Unitrode have infringed claim 51 of the '178 patent (LTC SJ 1). Claim 51 is a method claim directed to preventing load current reversal in synchronous switching voltage regulators. The main dispute is over step (c) of the method, which reads: "maintaining one of said switching transistors OFF for a period of time following the first state of circuit operation to de-couple the output circuit from ground during the period of time so as to prevent the current to the load from reversing polarity." '178 patent at 21:23-27.

To prove literal infringement, LTC relies on data sheets and testimony of its experts that each of the accused parts is designed to "monitor[ ] inductor current to turn OFF the bottom switch when instantaneous inductor current is near zero." LTC SJ 1 Br at 13. LTC argues both that defendants literally infringe and induce infringement by users of their products.

Each of the three defendants presents a different opposition to LTC's motion; Maxim and Unltrode's defenses, however, share many similarities. The arguments made by Maxim and Unitrode were considered by the court in connection with their respective motions for summary judgment of non-infringement of the reverse current claims. In deciding those motions, the court considered the oppositions to this motion. For the reasons given in connection with Maxim and Unltrode's motions for summary judgment of non-infringement, the court concludes that LTC's motion must be DENIED.

LTC has failed to present any evidence that Maxim or Unitrode has used the claimed method. To use the method, the court concluded that defendants would have to employ their parts in situations where load current reversal was possible. LTC simply did not present any evidence that this was done by either defendant. The court therefore GRANTED summary judgment of non-infringement in favor of Maxim and Unitrode with respect to direct infringement.

With respect to inducement of infringement by customers, the court GRANTED summary judgment for Maxim but concluded that there were factual disputes whether Unitrode customers used certain parts in infringing ways. In Unitrode's motion, the court noted some evidence of infringing use by customers but also pointed to Unitrode's presentation of contrary evidence. The court also noted the existence of a factual dispute regarding Unitrode's alleged intent to induce infringement. The court found some evidence of intent to induce but concluded that intent would have be decided by the jury due to the existence of disputed facts. Consequently, with respect to Maxim and Unltrode, LTC's motion must be DENIED.

ADI, on the other hand, has not brought its own motion for summary judgment of non-infringement of claim 51. Thus, the court considers its arguments for the first time. ADI raises essentially two arguments in opposition to LTC's motion for summary judgment: (1) "LTC offers no proof that the ADP1148 is ever used with anything other than a resistive load," ADI Opp to LTC SJ 1 Br at 10, and (2) the ADP1148 allows reverse load current because if the ADP1148 allows instantaneous current to reverse for a moment and if it is used with a capacitive load, reverse load current must occur as soon as instantaneous current reverses.

The first argument, which does not receive much attention from ADI, is the same argument that Unltrode and Maxim successfully raised. The court has concluded that LTC cannot prove infringement unless it shows that the accused parts were used with loads capable of causing load current to reverse. Only in this situation does the part perform the step of preventing load current reversal. ADI is correct that LTC has presented no evidence that it has performed this step or that any ADI customer has performed this step. LTC relies solely on the capabilities of the ADP1148 to attempt to prove infringement. But this cannot succeed with respect to claim 51, a method claim. For this reason, LTC's motion for summary judgment of infringement by ADI of claim 51 is DENIED.

The second argument raised by ADI has not been raised by the other defendants in the case. ADI relies on "[f]undamental laws of physics, electronics, and mathematics" to argue that load current reversal must occur at the exact same moment that instantaneous current reversal occurs. ADI Opp to LTC SJ 1 Br at 5. LTC argues that this is true, but only if the load consists of only a capacitor, a situation that it claims never occurs in the real world.

ADI and LTC argue over whether the CCO mandates that claim 51's limitations are met if instantaneous current reverses, average current does not reverse, but load current does reverse. It is admittedly an interesting question. The CCO states that the purpose of the patent is to "prevent the regulator from drawing power from the load." CCO at 35. In its construction of claim 44, the court noted that that claim's limitations are met if the bottom transistor is de-coupled from ground just after instantaneous current reverses, as long as "power is [not] actually drawn from the load." CCO at 35. This conclusion appears to be based on the court's understanding expressed as follows: "As far as the Court is aware, power is not drawn from the load just because the 'saw tooth' [instantaneous] current dips below a value of zero. Rather, * * * the relevant measure of when the regulator draws power from the load is when the average (not instantaneous) current reverses polarity." CCO at 25.

The dispute between LTC and ADI turns on whether the CCO settles the question whether load current can reverse immediately upon instantaneous current reversal, or whether the court left that question open for resolution at trial. The court sees no easy answer to this question. The CCO seems open to both readings. It is unclear to the court, however, why this dispute must be resolved at this juncture. If LTC can prove that ADI parts are used with loads capable of causing load current reversal but that do not cause such reversal immediately upon instantaneous current reversal, then there is no dispute here, the parts infringe. The fact that under different scenarios the ADP1148 would not infringe, because it would allow load current reversal, is irrelevant. For this reason, the court does not modify the CCO further in response to ADI'a argument from fundamental principles.

For these reasons, LTC's motion for summary judgment one (Doc # 421-1) is DENIED.

IV

Unitrode and Maxim have both moved for summary judgment of non-infringement of the sleep mode claims of the '178 patent, claims 1-6, 31-35, 41, 55-57. Claim 41 is a method claim and the rest are apparatus claims.

A

Unitrode raises a number of arguments in favor of a finding of non-infringement (Unitrode SJ 1). The court finds the overvoltage limitation argument dispositive of the motion, but nonetheless addresses the simultaneously off limitation, which the court concludes supports the finding of non-infringement with respect to the UCC39421 part. The other arguments raised by Unitrode will not be addressed.

-> The Unitrode 39421 does not meet the simultaneously off limitation as construed by the court in the CCO (Claims 1-6, 31-33, 34-35, 41 and 57).

The court construed claims 1-6, 31-33, 34-35-, 41 and 57 as including a functional limitation that the two switching transistors be turned off simultaneously. This functional limitation applies both to the means plus function apparatus claims and the method claim (41).

Unitrode argues that in the UCC39421, the signal that turns off the power transistor to enter sleep mode is the PFM signal. If the power transistor is on, that signal turns off the power transistor and simultaneously turns on the synchronous rectifier. If the power transistor is off, the PFM signal keeps it off and keeps the synchronous rectifier on. In either case, the PFM signal does not simultaneously turn off one signal and disable the other.

LTC argues that the UCC39421 operates like figure 7 of the patent and therefore must fall within the scope of the simultaneously off limitation of the sleep mode claims. It argues that as long as both transistors are either turned off or disabled simultaneously, they need not actually become off at the same time. LTC argues that the UCC39421 disables one transistor as it turns it on, thus meeting the limitation even though the transistor does not turn off until later.

Unitrode responds by arguing for a narrow reading of "disable." It notes that the term disable appears nowhere in the claims and was used only by the court in its claim construction order (CCO). Under this narrow reading, the signal that initiates sleep mode must disable the transistor that is already off. Unitrode

asserts that the simultaneously off limitation cannot embrace a device that turns on one of the transistors (or allows it to stay on) while preventing it from turning on again once it is later turned off. Finally, Unitrode argues that the embodiment depicted in figure 7 does not fall within the sleep mode claims. Unitrode notes that at the *Markman* hearing, LTC argued that defendants' proposed "simultaneously off" construction would have precisely this effect of excluding figure 7 from the claims, yet the court adopted defendants' construction.

The court concludes that Unitrode's position is correct. The CCO stated: "Thus, it is the act of turning or causing both transistors to be off, not the state of being off, that occurs simultaneously." CCO at 11. The term "disable" appears nowhere in the claims. Rather, it appears to have been adopted by the court to describe the act of keeping one of the transistors off that occurs simultaneously with the act of turning off the transistor that is on. This understanding is conveyed by the court in its discussion of the causation limitation. See CCO at 9-10.

It is undisputed that the PFM signal of the UCC39421 does one of two things: it turns on the synchronous rectifier or it 3 I leaves the synchronous rectifier on. Erickson Decl (Unitrode SJ 1-4) at para. 71; Blauschild Decl (RB III) at para.para. 115, 116. Neither act is consistent with the limitation construed by the court. The second transistor is not turned off until a subsequent event occurs. The simultaneous occurrence of an act that prevents one transistor from turning on again and the turning off of the other transistor is not enough to meet the simultaneously off limitation as construed by the court.

The fact that this limitation excludes the embodiment in figure 7 of the patent does not alter the court's conclusion. Unitrode correctly points out that the CCO only references figure 7 as a source of structure, not function. The reference thus does not mean that the simultaneously off limitation reads on figure 7. There is no factual dispute between the parties that the UCC39421 functions as described by Unitrode. Consequently, given the court's interpretation of its previous claim construction, the court rules as a matter of law that UCC39421 does not literally infringe claims 1-6, 31-33, 34-35, 41 and 57.

Additionally, Unitrode argues that the UCC39421 does not infringe the above mentioned claims under the doctrine of equivalents because the function performed by the PFM signal (either turning on the second transistor or leaving it on) cannot be the equivalent of turning the signal off or disabling it in the off position, as the CCO required. LTC argues that even if the transistors in the UCC39421 do not literally turn off simultaneously, the device as a whole performs the same function as the patented device, it turns off both transistors when there is a light load in order to improve the efficiency of the regulator. LTC appears to argue not that the functioning of the PFM signal is the equivalent of the functioning of the second control signal in the ' 178 patent, but that the UCC39421 is the functional equivalent of the device claimed in claim one.

Unitrode's response does not address LTC's argument. Instead, relying on Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki, 234 F.3d 558 (Fed.Cir.2000), Unitrode argues that prosecution estoppel bars a finding of infringement under the doctrine of equivalents. But the narrowing amendment Unitrode points to has nothing to do with the simultaneously off limitation. For this reason, *Festo* does not apply. See Aclara Biosciences, Inc. v. Caliper Technologies Corp., 125 F Supp 2d 391, 400-03 (N.D.Cal.2000).

It turns out, however, that the court need not rely on Unitrode's *Festo* argument here because it finds Unitrode's first argument persuasive. The case cited by Unitrode, Moore USA v. Standard Register Co., 229 F.3d 1091 (Fed.Cir.2000), supports Unitrode's argument that the UCC39421 does not meet the

simultaneously off limitation under the doctrine of equivalents. No reasonable jury could decide that turning on the synchronous rectifier or causing it to stay on is the equivalent of turning it off or disabling it as defined in the CCO. To find either action to be the equivalent of simultaneously turning both switches off wold strip the simultaneously off limitation of all its meaning.

Consequently, the court concludes that the UCC39421 does not infringe claims 1-6, 31-33, 34-35, 41 and 57 literally or under the doctrine of equivalents.

-> The UCC39421 and the UC1874 do not infringe the sleep mode claims because PFM or standby mode is initiated by regulated voltage (claims 1-6, 31-33, 34-35, 41, 55-56 and 57).

In the voltage regulator disclosed in the '178 patent, sleep mode results from an unregulated over-voltage condition. The unregulated over-voltage condition is caused by the minimum duty cycle. Because of the minimum duty cycle, when the load is drawing power at low levels, the voltage regulator is unable to vary the duty cycle enough to transfer a correspondingly small amount of power. The regulator instead must transfer more power than is needed, resulting in the over-voltage condition. See Erickson Decl (Unitrode SJ 1-4) at para. 94, 96; '178 patent at 6:41-44.

The court, in the CCO, construed claim 1 of the patent as imposing the following limitation: "the second state of circuit operation ("sleep mode") is initiated by something other than the regulated voltage." CCO at 9. Unitrode argues that UCC39421 and UCC1874 do not meet the limitation that something other than "regulated voltage" initiate sleep mode. It is undisputed that the Unitrode devices do not initiate sleep mode based on an over-voltage condition.

LTC opposes Unitrode's unregulated voltage argument in two portions of its brief: at page 16 LTC addresses the functional limitation and at page 17 LTC addresses the structural limitations related to the third circuit. First, LTC argues that Unitrode's expert, Professor Erickson, "showed that the output voltage deviates from the steady state voltage maintained in the first state of operation to initiate sleep mode." LTC Opp to Unitrode SJ 1 Br at 16. Thus, LTC argues that sleep mode in the Unitrode devices is not initiated by a regulated voltage. Second, LTC argues that the CCO does not read the regulated voltage limitation into claim 41. Third, LTC argues that the sleep mode circuits described in the patent do not initiate sleep mode by unregulated voltage. Fourth, LTC points to the use of a comparator in both the Unitrode parts and the patented circuits. Fifth, LTC argues that Unitrode impermissibly focuses on the individual structural elements of the sleep mode claims rather than at the circuits as a whole. Finally, LTC questions whether the patent even imposes the regulated voltage limitation invoked by Unitrode.

Unitrode responds to many, but not all of these contentions. Unitrode argues that LTC misunderstands the meaning of the term "regulated voltage;" Unitrode contends that regulated voltage can vary in amount, it just must be an output voltage that is "maintained during the first state of operation through varying the duty cycle of the switching transistors." Unitrode SJ 1 Reply Br at 11 (quoting CCO at 9:5-7). Under this definition, a deviation in output voltage from some steady state voltage may still be regulated voltage. Finally, Unitrode argues that the CCO imposed the regulated voltage limitation on claim 41 at CCO 25:15-18.

The court will address LTC's sixth argument first. LTC contends that Unitrode impermissibly applies a functional regulated voltage limitation when the patent imposes no such limitation. For example, claims 1 to 34 of the patent, LTC contends, claim the functions of generating "a second control signal to cause the

switching transistors to be OFF if a sensed condition indicates low load current, regardless of what the condition is and how it is created." LTC Opp to Unitrode SJ 1 Br at 18. The functional limitation urged by Unitrode, LTC argues, is not claimed by the patent.

The CCO, however, came to a different conclusion. The regulated voltage limitation discussed in claim one of the CCO is somewhat confusing in that it appears with the discussion of the second circuit, not the third. See CCO at 9. Nonetheless, it is clear that the court accepted defendants' argument that claim 1 should be limited to devices in which sleep mode is initiated by something other than a regulated voltage. To accept LTC's argument would require the court to re-visit the claim construction, yet LTC has not explicitly asked the court to do that. Absent a request to revisit the claim construction and a showing that a change is warranted, the court will not second guess the construction of the sleep mode claims adopted in the CCO.

LTC's third argument, that the circuits claimed in the patent do not initiate sleep mode by unregulated voltage would also require that the CCO be re-visited. This argument, however, is much less persuasive than the argument discussed above. The evidence LTC cites, Blauschild's expert report at 91, 92, 119 and 115, does not support its argument. Rather, pages 91 and 92 of the report describe initiation of sleep mode by an unregulated over-voltage situation. See Blauschild Decl, Exh A, Blauschild Report at 91, 92. Page 115 of the report makes the unsupported statement: "As explained above, the '178 patent does not require an 'unregulated over-voltage.' " *Id*. at 115. But the portion of the report that purports to explain this is not cited. Page 119 is not submitted. Consequently, the court declines to revisit the CCO and concludes that the Unitrode parts cannot infringe unless sleep mode in those parts is initiated by unregulated voltage.

The court turns to LTC's first argument, that Unitrode's parts initiate voltage by unregulated voltage, as allegedly admitted by Professor Erickson in his deposition. It appears that LTC is employing a definition of unregulated voltage different from that used in the CCO. The CCO defines regulated voltage as "the output voltage that is maintained during the first state of operation through varying the duty cycle of the switching transistors." CCO at 9. And it is undisputed that the output voltage maintained during the first state of operation can fluctuate. Thus, LTC must do more than show that sleep mode is initiated by voltage that deviates from a steady state; it is clear that voltage can deviate from a steady state and still be considered "regulated voltage."

LTC's argument that sleep mode in the Unitrode devices is initiated by unregulated voltage, as thus defined, is unpersuasive. LTC offers no evidence to contradict the testimony of Professor Erickson at paragraphs 94-98. See Erickson Decl (Unitrode's SJ 1-4) at para. 94-98. The testimony by Mr Blauschild cited by LTC at page 16 of its opposition brief does not do so. The cited paragraphs largely do not address the regulated voltage issue. See Blauschild Decl (RB III) para.para. 96-99, 107-108, 121. Paragraph 111 of Blauschild's declaration, not cited by LTC, provides some support for its argument. But LTC's argument at page 16 of its opposition and in paragraph 111 of the Blauschild declaration appears to rely on a definition of regulated voltage contrary to that adopted in the CCO. As explained above, voltage can deviate from a steady state and still be deemed regulated. Thus, Professor Erickson's deposition testimony, which is referenced but not cited or provided by LTC, and the drawing Erickson made at the deposition, Blauschild Decl (RB III), Exh S, do not indicate that Unitrode's parts initiate sleep mode based on unregulated voltage.

LTC's fourth and fifth arguments are relevant only to a structural infringement analysis, not one based on a functional limitation. The only remaining dispute is whether the regulated voltage limitation applies to claim 41, LTC's second argument. While the CCO again references the limitation in its discussion of the first state of circuit operation (rather than in the discussion of sleep mode), it is clear that the limitations of claim 1 are

applied to claim 41. See CCO at 25:15-26.

Thus, the CCO mandates a conclusion that neither the UCC39421 or UCC1874 infringes claims 1-6, 31-33, 34-35, 41, 55-56 and 57. Having reached this conclusion, the court need not consider Unitrode's structure-based arguments. The court notes, however, that in deciding Unitrode's summary judgment two, the court concluded that the Unitrode parts at issue did not meet the "second circuit" limitation of the patent. That conclusion would independently support Unitrode's motion for summary judgment one except for claim 41.

Unitrode's motion for summary judgment one (Doc # 436-1), for non-infringement of the sleep mode claims, is GRANTED.

B

Maxim moves for summary judgment of non-infringement of the sleep mode claims (1-3, 31-35, 41 and 55-57) on a number of grounds (Maxim SJ 2). Maxim contends that three functional limitations and three structural limitations of the claims are not met. The court will focus, however, on only the simultaneously disabling functional limitation and the second circuit structural limitation. The court has addressed arguments similar to these in the previously discussed motions and concludes that Maxim must prevail on both. As a result, Maxim's second motion for summary judgment (Doc # 407-1) is GRANTED.

The claims at issue, 1-3, 31-35, 41 and 55-57 are all means plus function claims, except claim 41, which is a method claim. The means plus function claims are infringed if the accused device (1) has a structure that performs a claimed function, and (2) has structure that is identical or equivalent to the structure specified in the patent for performing the claimed function. Serrano v. Telular Corp., 111 F.3d 1578, 1582 (Fed.Cir.1997). The method claim is infringed when the steps its recited are performed. 35 USC s. 271(a); Mendenhall v. Cedarapids, Inc., 5 F.3d 1557, 1579 (Fed.Cir.1993).

-> The Maxim parts do not simultaneously disable the top and bottom transistors (claims 1-3, 31-35, 41 and 57).

All of the sleep mode claims except claims 55 and 56 "require[ ] shutting OFF or disabling the two transistors at the same point in time." CCO at 11. The dispute between LTC and Maxim is over what this means. It is essentially the same dispute the court resolved in Unitrode's favor in Unitrode's motion for summary judgment one. LTC argues that the simultaneously off limitation is met if the top transistor is turned off and the bottom transistor is prevented from being turned on again once it is turned off, even though it is presently on.

While this is a plausible reading of the term "disable," LTC fails to recognize that "disable" is a term the court adopted, not one that comes from the claims. The court adopted the term "disable" to describe the act of keeping one of the transistors off that occurs simultaneously with the act of turning off the transistor that is on. This understanding is conveyed by the court in its discussion of the causation limitation. See CCO at 9-10. There the court noted that both transistors are never on simultaneously. Thus, both transistors could not be turned off simultaneously unless turning off encompassed preventing the already off transistor from turning back on. For this reason, LTC's reading of "disabled" cannot be adopted by the court.

LTC vigorously objects that Maxim's reading of the simultaneously off limitation will exclude figure 7 of the patent. But the court was not required to construe claims 1-3, 31-35, 41 and 57 to read on all the figures of the patent. It is undisputed that they read on figure 2. LTC's argument that the court described figure 7 as

performing the function of claim 34 is inaccurate. To the contrary, the court merely identified certain structures in figure 7 as corresponding to the functions of claim 34. Maxim makes a strong argument that the structures referenced by the court are not the ones responsible for taking figure 7 out of the court's construction of the simultaneously off limitation.

LTC also points to deposition testimony of Dr Fair, Maxim's expert, to support its argument that figure 7 meets the simultaneously disabling requirement. LTC is correct that Dr Fair initially said that figure 7 meets the simultaneously disabling limitation. Rowland Decl (Opp to Maxim SJ 1-4, 7), Exh 12, Fair Depo at 125:24-126:18, 139:6-12. But Maxim is correct that later Dr Fair retracted and modified his previous answers. Fair made clear that the structures from figure 7 that the court identified in the CCO would perform the function of simultaneously disabling. *Id* at 150:4-20.

Once Maxim's reading of the simultaneously off limitation is affirmed, it is plain that the Maxim parts do not meet the limitation. LTC does not dispute that when the top transistor is turned off at the initiation of sleep mode the bottom transistor is actually turned on, rather than being kept off. See Doluca Decl at para. 11. This simply does not meet the simultaneously off limitation as construed by the court.

LTC argues that the Maxim parts infringes under the doctrine of equivalents. But just as with the Unitrode parts that turned on rather than turned off or kept off the bottom transistor, the court cannot conclude that the Maxim parts perform an equivalent function. Instead, they appear to perform the opposite function of the claim limitation. Rather than turn the bottom transistor off or keep it off, the Maxim parts turn on the bottom transistor. Given this fact, the court cannot conclude that the parts perform an equivalent function. See Moore USA, Inc. v. Standard Register Co., 229 F.3d 1091, 1106 (Fed.Cir.2000).

In sum, the Maxim parts fail to meet the simultaneously disabling limitation of claims 1-3, 31-34, 41 and 57. While these claims are worded slightly differently, the court construed them all the same with respect to the simultaneously disabling limitation. CCO at 11. Maxim's motion for summary judgment as to these claims is GRANTED.

-> The Maxim parts do not employ a second circuit structure identical or equivalent to that disclosed in the patent.

The court previously concluded that the Maxim parts do not employ a structure identical or equivalent to the second circuit disclosed in the patent. See Maxim's SJ 4; see also Unitrode SJ 2. The court concluded that the inclusion of a PWM circuit in claim 34 was an error. Such a structure was not included by the court in any other claim despite identical claim language with respect to the second circuit limitation. The single reference to a PWM circuit in the patent was deemed by the court too vague to specify a structure for purposes of s. 112, para. 6.

The same conclusion applies in this motion. Because the Maxim parts do not employ a constant off-time, one-shot circuit, they do not infringe claims 1-3, 31-34 and 55-57. The court need not reach Maxim's alternate rationales for summary judgment. The court had to reach both the simultaneously disabling and second circuit grounds because the former does not apply to claims 55 and 56 and the latter does not apply to claim 41.

In sum, the court concludes that the Maxim parts do not meet the simultaneously disabling and second circuit limitations. As a result, they do not infringe the sleep mode claims, claims 1-3, 31-34, 41 and 55-57.

Maxim's motion for summary judgment two (Doc # 407-1) is GRANTED. This renders moot Maxim's motion for summary judgment five (Doc # 411-1). Consequently, that motion is DENIED.

V

A

LTC moves for summary judgment that Ron Vinsant did not invent any claim of the '178 patent at Teledyne (LTC SJ 2). LTC's motion responds to defendants' defenses that rely upon an assertion that Ron Vinsant should have been named as one of the inventors of the '178 patent. It appears that defendants assert that Vinsant was a sole inventor from whom Wilcox derived a claim of the ' 178 patent, as in *Price v. Symsek,* 998 F.2d 1187 (Fed Cir1993).

LTC argues that defendants' defenses cannot succeed unless they can show at trial by clear and convincing evidence that: (1) "Mr. Vinsant had a complete, operable conception of the claimed invention, including all elements of a ' 178 patent reverse current claim, while at Teledyne. That complete, operable conception must be supported by corroborating evidence;" (2) "Mr. Vinsant, after being employed by LTC, disclosed to Mr. Wilcox the complete invention of the '178 reverse current claim;" and (3) "Neither Mr. Wilcox nor Mr. Flatness, the named inventors of the '178 patent, conceived of the invention of the ' 178 patent reverse current claims before Mr. Vinsant allegedly disclosed it to one of them." LTC SJ 2 B.R. at 2. The focus on conception of a complete claim is necessary to show that Vinsant was a sole inventor and that Wilcox derived a claim from him. To show co-inventorship, defendants would not need proof of conception of a complete claim by Vinsant; contribution to a claim would be sufficient. See Ethicon, Inc. v. United States Surgical Corp., 135 F.3d 1456, 1460 (Fed.Cir.1998).

Defendants do not dispute that their defense is that Wilcox derived a reverse current claim from Vinsant. Thus, to prevail, defendants must show by clear and convincing evidence (1) conception of a complete claim and (2) communication of that claim to Wilcox before Wilcox independently conceived of the claim. Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1576-78 (Fed.Cir.1997); *Price,* 988 F.2d at 1190-94. For the most part, the parties also do not dispute that the corroboration requirement applies. To prove conception of a claim by clear and convincing evidence, defendants cannot rely solely on Vinsant's testimony: "an inventor's testimony, standing alone, is insufficient to prove conception-some form of corroboration must be shown." *Price,* 988 F.2d at 1194.

"A 'rule of reason' analysis is applied to determine whether the inventor's prior conception testimony has been corroborated. * * * An evaluation of all pertinent evidence must be made so that a sound determination of the credibility of the inventor's story may be reached." *Id* at 1195. "[C]ircumstantial factors" should be considered. Ethicon, 135 F.3d at 1464. Furthermore, "there need not be corroboration for every factual issue contested by the parties" and " 'an inventor can conceivably prove prior conception by clear and convincing evidence although no one piece of evidence in and of itself establishes the prior conception.' " *Id* (quoting *Price,* 988 F.2d at 1196).

Defendants mainly rely on the declaration of Ron Vinsant to show that Vinsant conceived of a reverse current claim of the '178 patent while at Teledyne. The declaration does indeed support that conclusion. It is clear, however, that Vinsant's testimony, standing alone, is insufficient. Defendants must show evidence of corroboration. Defendants offer: (1) the diagram produced by Mr Reni of Apple (D-136), see Counsel Decl, Exh 110; Mr Reni's testimony; (3) a diagram drawn by Vinsant at a meeting with counsel; and (4) circumstantial evidence. The court considers each to determine whether it serves to corroborate Vinsant's

testimony.

The D-136 diagram. Exactly what the diagram depicted in exhibit D-136 reveals is unclear. It is undisputed that the diagram is not of a complete synchronous switching regulator. Rowland Decl (LTC SJ 2), Exh 17, Vinsant Depo at 160:20-21. To the extent the diagram shows a circuit that turns off a transistor, it is unclear whether it does so at peak current or when current approaches or crosses zero. LTC's expert has stated that the diagram shows the former. See Blauschild Decl (LTC SJ 2), Exh C at 124-127. Defendants' expert, Martin Schlect, believes, based largely on Vinsant's testimony, that the diagram shows the latter. See Counsel Decl, Exh 111, at 123, para. 9.

Mr Reni's description of the circuit in D-136 fails to shed any light on the question. Defendants assert that Reni "testified that Mr. Vinsant designed a circuit that turned off the transistor in a switching voltage regulator when current reversal was detected and gave him a contemporary sketch of the basic circuitry to perform this function." Maxim Opp to LTC SJ 2 B.R. at 17 (citing Counsel Decl, Exh 107, Reni Depo at 205:2-11, 241:23-242:20). Those deposition lines state:

Q. This has been marked as 4093, page DR5 000816 and 817, which are color copies of Exhibit D-136. Please take a look and see if this is a clearer view of the-

A. Yes, it is. Okay. Yes. That helps me a little bit more. I can see that now. Again, this is another example of drawings that I kept in my file as a result of brainstorming and study of circuitry and possible circuitry I wanted to implement in this design. [205:2-11]

* * *

Q. In this design as it's drawn here-

A. That's-let me repeat. The flaw, as I told you in this design, is the fact that this MOSFET was also driven by this circuitry. And you know what? Now I remember what this is. This is suddenly coming back to my memory. This was a note from Rom Vinsant that was explaining to me at the time, after we were going through the circuitry, and he did detect this problem and he made a note here describing to me a circuitry that would shut off this MOSFET in that case.

Q. As it's drawn in-

A. It's very clear to me now. I remember.

Q. Okay. As it is drawn in Plaintiff's Exhibit 245, when the sleep mode signal is activated, the bottom side switch continues to be turned on and off; is that correct?

A. Yeah. In this case the circuit will not work well because it would cause the current to reverse. And that's why this brainstorming session, because we discussed exactly this problem. And now I remember what is that for.

Counsel Decl, Exh 107, Reni Depo at 205:2-11, 241:23-242:20.

Suffice to say, Reni's testimony about the Vinsant diagram is not a model of clarity. It certainly does not

resolve the ambiguity surrounding what that diagram shows.

Reni's testimony. In addition to the testimony quoted above, defendants point to lines 51:19-52:7 and 251:24-252:4 of Reni's deposition as corroborating evidence. That testimony reveals that Reni thought the issue of "current reversal" came up with Vinsant, *Id* at 51:19-23. It continues:

Q. Do you recall how the issue of current reversal came up?

A. Because I gave the circuit to be analyzed by Jerry Collings and as he was doing Spice analysis, discovered that if we go into hysteric mode that there could be a potential for a short-circuit occurring in reversal if there is the synchronized MOSFET-if the synchronized MOSFET is present.

Id at 51:24-52-7. It is not clear to the court that Reni is talking about current reversal as discussed in the current reversal claims of the '178 patent. No where has current reversal been referred to as a "short circuit," This is confirmed by Reni's testimony that at no time did he discuss zero crossing detectors (necessary to prevent load current reversal) with Vinsant. Rowland Decl (LTC SJ 2), Exh 26, Reni Depo at 161:25-162:5.

The remaining Reni testimony cited by defendants states:

* * * wanted to not use that function altogether. Also because there were other things implied with that, and one of them was the current reversal problem that was part of the switch-of the timing, part of the timing. I recall that those are things that I discussed with Ron Vinsant.

Counsel Decl, Exh 107, Reni Depo at 251:24-252:4. The closest this portion comes to corroborating that Vinsant conceived of the reverse current claims of the '178 patent while at Teledyne is the use of the words "current reversal problem."

Overall, the portions of Reni's testimony cited by defendants are terse and cryptic. The court is unsure that Reni is even discussing current reversal as the term is used in the '178 patent. Even if he is, Reni certainly does not discuss a circuit designed by Vinsant that will prevent such current reversal. The testimony does almost nothing to corroborate Vinsant's claim of prior conception.

The diagram in Wilson's notebook. Defendants next rely on a diagram dated February 21, 1991, found in Wilson's notebook (D-141). The diagram is labeled "Ron Vinsant's Laptop Switcher Proposal." See Counsel Decl, Exh 120. The court will assume that the diagram shows a circuit that would infringe a reverse current claim of the patent. The diagram still fails to corroborate Vinsant's assertion that he conceived of a reverse current claim at Teledyne. The diagram was drawn while Vinsant worked for LTC, not Teledyne. It in no way mentions Vinsant's work at Teledyne. The diagram may be evidence of communication of an idea to Wilcox. But it is not evidence that Vinsant conceived of a reverse current claim while at Teledyne.

Circumstantial Evidence. Defendants point to the following alleged facts as circumstantial evidence that Vinsant conceived of a reverse current claim at Teledyne:

-> Vinsant's experience in switching voltage regulators and polarity reversal before and during his employment at Teledyne;

-> Wilcox's ignorance about switching voltage regulators and polarity reversal;

-> Flatness' ignorance about switching voltage regulators and polarity reversal;

-> Documents provided to Reni, including D-136;

-> LTC's assignment of Vinsant to work with Wilcox;

-> Praise by LTC employees for Vinsant's experience in power supplies;

-> Writings by Vinsant about switching voltage regulators while at LTC;

-> LTC's motivation to hide Vinsant's involvement; and

-> The similarity between the diagram produced by Reni (D-136) and Wilcox's notebook diagram (D-141).

The court is unconvinced that this alleged corroborating evidence actually corroborates Vinsant's alleged conception. The evidence of Vinsant's experience with switching voltage regulators and current reversal comes solely from Vinsant. See Maxim Opp at 2. The assertion that Wilcox lacked experience with switching voltage regulators is confirmed by LTC engineer Robert Dobkin. See Counsel Decl, Exh 113, Dobkin Depo at 89:23-90:25. But Dobkin expressed confidence that Wilcox could learn what he needed to know from textbooks and other LTC workers; Dobkin does not mention Vinsant. Id. Thus, Dobkin's testimony provides only the slightest support for the notion that Vinsant invented the claims at Teledyne because Wilcox could not do so. The testimony by Vinsant cannot corroborate Vinsant's testimony. With respect to Flatness' expertise, defendants have put forward no evidence.

The "documents" provided to Reni appear to consist of only one document, D-136. As discussed previously, that document is is very ambiguous. The assignment of Vinsant to Wilcox provides some evidence that Vinsant contributed to the '178 patent, but it certainly fails to show much with respect to what Vinsant conceived of at Teledyne. The court cannot locate in defendants' brief any citation to praise for Vinsant by LTC employees. Vinsant's writings while at LTC are only slightly probative of Vinsant's conceptions at Teledyne, if probative at all. Defendants' argument that LTC's alleged motive to hide Vinsant as an inventor supports a finding that Vinsant conceived of claims at Teledyne is circular; such a motive only exists if Vinsant actually did conceive at Teledyne.

This leaves only the alleged similarity between D-136 and D-141. Defendants cite no expert testimony as to the similarity of the two diagrams. The court's comparison of the two does not convince it that the diagrams are clearly similar. D-136 lacks reference to zero cross detection and lacks a top side transistor. The bottom line is that the alleged similarity has not been adequately shown.

Defendants' circumstantial evidence is tangential at best. It contributes in no meaningful way to furthering the idea that Vinsant conceived of a complete reverse current claim while at Teledyne. As discussed above, the D-136 diagram, not inaccurately referred to by LTC as a "scribble," is highly ambiguous. Finally, the testimony of Reni is far from clear and at best references "current reversal" without describing a solution for the problem conceived of by Vinsant. At worst, Reni does not even discuss "current reversal" relevant to the '178 patent.

Even more striking than the ambiguous nature of the evidence defendants put forth, is the evidence they fail

to make available. The Federal Circuit has commented on "the ubiquitous paper trail of virtually all commercial activity." Woodland Trust v. Flowertree Nursery, Inc., 148 F.3d 1368, 1373 (Fed.Cir.1998). The *Woodland* court stated: "It is rare indeed that some physical record (e.g., a written document such as notes, letters, invoices, notebooks, or a sketch or drawing or photograph showing the device, a model, or some other contemporaneous record) does not exist." *Id*.

Vinsant claims to have designed and built synchronous voltage regulators that monitored inductor current and turned off the bottom transistor to prevent current reversal. Vinsant Decl para.para. 2-24. But defendants have produced no documents verifying this work, except D-136. Where are the diagrams, notes and letters that undoubtedly would have been produced contemporaneous with Vinsant's conception? Defendants have also produced no witnesses to corroborate Vinsant's conception and construction of devices embodying the reverse current claims. Where are the Teledyne co-workers who would be able to confirm what Vinsant had worked on?

Whether Vinsant is deemed an interested or disinterested witness, corroboration of his testimony is necessary for a jury to find clear and convincing evidence of prior conception. Finnigan Corp. v. Int'l Trade Com'n, 180 F.3d 1354, 1367 (Fed.Cir.1999). In this case, the allegedly corroborating evidence put forward by defendants is insufficient. No reasonable jury could find that the evidence corroborates conception of a complete claim by Vinsant at Teledyne.

LTC's motion for summary judgment two (Doc # 423-1) is GRANTED. The grant of this motion renders moot LTC's motion for summary judgment three: that the patent is neither invalid nor unenforceable based on the alleged contribution of Ron Vinsant. Consequently, that motion (Doc # 427-1) is DENIED as moot.

B

LTC moves for partial summary judgment that ADI, if it is found to infringe at all, willfully infringed the '178 patent (LTC SJ 5). "A finding of willfulness requires the fact-finder to find that clear and convincing evidence shows 'that the infringer acted in disregard of the patent ... [and] had no reasonable basis for believing it had a right to do the acts.' " American Medical Systems, Inc. v. Medical Eng'g Corp., 6 F.3d 1523, 1530 (Fed.Cir.1993) (quoting Stickle v. Heublein, Inc., 716 F.2d 1550, 1565 (Fed.Cir.1983)). "This is a factual determination to be made after consideration of the totality of the circumstances." *Id*.

"Where, as here, a potential infringer has actual notice of another's patent rights, he has an affirmative duty to exercise due care to determine whether or not he is infringing. Such an affirmative duty includes, inter alia, the duty to seek and obtain competent legal advice from counsel before the initiation of any possible infringing activity." Underwater Devices Inc. v. Morrison-Knudson Co., Inc., 717 F.2d 1380, 1389 (Fed.Cir.1983) (citations omitted). An opinion of counsel, however is not required to avoid willful infringement. Rolls-Royce LTC v. GTE Valeron Corp., 800 F.2d 1101, 1109-10 (Fed.Cir.1986).

The willfulness inquiry "includes elements of intent. reasonableness, and belief." Pall Corp v. Micron Separations, Inc, 66 F.3d 1211, 1221 (Fed.Cir.1995). The inquiry involves "a classical jury question of intent." Richardson v. Suzuki Motor Co., Ltd., 868 F.2d 1226, 1250 (Fed.Cir.1989). There is some precedent, however, for deciding infringement on a motion for summary 19 judgment. See Avia Group Int'l, Inc. v. LA Gear California, Inc., 853 F.2d 1557 (Fed.Cir.1988). But the fact that this is the only case LTC puts forward, indicates how rare it is for a court to grant summary judgment of willfulness. This makes sense given the high standard, clear and convincing evidence, that must be met. Granting summary

judgment of willful infringement is thus similar to granting summary judgment of inequitable conduct. See Maxim SJ 7 below.

ADI contends that granting summary judgment of willfulness before infringement has been found would be an unconstitutional advisory opinion. ADI has found no case precisely on point, but it cites Technicon Instruments Corp. v. Alpkem Corp., 866 F.2d 417 (Fed.Cir.1989). In that case, the Federal Circuit declined to review the district court's finding of invalidity of a patent. The procedural posture of the case was strange. The parties had stipulated that if the patent at issue was invalid then the patent holder was liable for antitrust violations. The purpose of this agreement appears to have been to obtain a ruling on the validity question by the Federal Circuit. The Federal Circuit, however, declined. It determined that the district court had erred by entering judgment based on a stipulation that did not contain facts sufficient to support the claimed antitrust violation. Id at 421. The court commented that ruling on the validity question might constitute an improper "advisory opinion." *Id*.

Needless to say, the ruling LTC requests is very different from that sought by the parties in *Technicon*. But, LTC can only point to one case in which a court found willfulness before infringement was determined. See Lambton Mfg., LTD. v. Young, 833 F.Supp. 610 (W.D.Ky.1993). Regardless, the court will assume that granting partial summary judgment on this issue would be proper. The court need not consider the question in greater depth because it concludes, for the reasons that follow, that ADI has raised a triable issue of fact whether it was willful (if it infringed at all).

The facts are essentially undisputed. The dispute is whether the facts show a reasonable belief by ADI that it was not infringing the '178 patent. After examining the evidence put forth by both sides, the court is convinced that the question is sufficiently close that it should not be taken out of the jury's hands.

LTC focuses on internal ADI documents showing that ADI perceived a risk of infringement, even after the re-design. The documents indicate that at the time ADI began selling its 1148 product, it knew its product infringed certain claims and it had not yet become convinced that all of the claims of the ' 178 patent were invalid. For example, in April 1996, ADI engineers and counsel concluded that the re-designed part would not literally infringe the patent but "for various reasons * * * it is likely that LTC would sue on the new design claiming infringement under the 'doctrine of equivalents.' " Ross Decl, Exh I. Later, in a December 5, 1996, telephone conference with counsel, an ADI engineer stated that ADI was "using at least claim 17" of the patent. Ross Decl, Exh P. In another conversation with counsel on February 6, 1997, ADI engineers admitted that ADI "did" claims 15 17 and 17. Id, Exh Q.

With respect to invalidity, on December 12, 1996, ADI's counsel concluded that all of the patent claims except four were invalid. Id, Exh L. There four were still being investigated. In January 1997, ADI commenced selling its allegedly infringing part. Finally, in connection with a February 7, 1997, telephone call, ADI's counsel noted that ADI "need[ed] better prior art" for claims 15, 17, 27 and 29. Id, Exh R. ADI did not receive a formal written opinion until September 4, 1997.

ADI casts its net a little wider. It points to its: (1) effort to search for patents related to its 1148 product; (2) halt of production upon issuance of the '178 patent; (3) consultation with outside patent counsel; (4) efforts to design around the patent; and (5) good faith arguments for non-infringement.

It is undisputed ADI purposefully designed a part that could replace the LTC1148 but that it searched for patents covering the LTC1148 and found none until February 1996, a month after the '178 patent issued. It

is also undisputed that when ADI discovered the patent, it immediately ceased production of its 1148 part. At this point, ADI consulted its outside patent counsel, Richard S Koppel. According to an ADI engineer, Koppel concluded that the patent was obvious in light of prior art. Szepesi Decl at para. 12. There is no evidence of any communication to this effect from Koppel until December of 1996. See Ross Decl, Exh L.

At some point in time (it is unclear from the declarations) ADI redesigned its 1148 part. Szepesi Decl at para. 12. ADI engineer Szepesi appears to believe that this re-design avoids infringement of the patent. Id at para. 13. An April 1996 document from ADI's litigation counsel (cited above) indicates that counsel thought the redesign "probably avoids literal infringement" of the patent. Ross Decl, Exh I.

In December 1996, Koppel told ADI that prior art invalidated all but four of the patent claims. Szepesi claims that Koppel asserted that "additional prior art likely existed that would unquestionably render the remaining few claims invalid as well." Szepesi Decl at para. 12. There is no evidence that Koppel said this. In fact, the letter from Koppel indicates that he was relying on Szepesi to track down prior art invalidating these final four claims. Finally, ADI argues that the good faith defenses to infringement it can present in this case preclude a finding of willfulness.

LTC argues that ADI's patent searches, production halt, consultation with counsel and redesign are all irrelevant because they do not negate the fact that ADI documents show that ADI believed it infringed at least four claims and that it had found no way to invalidate those claims. The court understands LTC's contention, but concludes that the evidence ADI points to is relevant. It may not show that ADI had a good faith belief that it was not infringing the four claims or that they were invalid, but it is relevant as background to show how ADI proceeded in this matter.

LTC essentially concedes that the December 1996 counsel opinion precludes a finding of willfulness except with respect to the four claims for which no prior art had been found (claims 15, 17, 27 and 29). The court agrees with LTC that with respect to these claims, the December letter and the Szepesi declaration are very damaging. Koppel says that he is relying on Szepesi to invalidate the four remaining claims but Szepesi points to Koppel. This game of pass the buck does not show a reasonable basis to believe the claims invalid.

But the court cannot conclude that there is clear and convincing evidence of willfulness. Even if ADI cannot show a reasonable belief that the claims were invalid, it can show a belief that they were not infringed. ADI appears to have believed 25 that the re-design prevented infringement of both the sleep mode and current reversal claims. Szepesi Decl at para. 13. Efforts to design around patents are encouraged. See WMS Gaming, Inc. v. Int'l Game Tech, 184 F.3d 1339, 1355 (Fed.Cir.1999); Westvaco Corp. v. Int'l Paper Co., 991 F.2d 735, 745 (Fed.Cir.1993). The April 1996 letter reinforces Szepesi's opinion that the design around avoided infringement. Ross Decl, Exh I. The court does not read it as LTC does to suggest that ADI's counsel believes the ADI part to 5 infringe under the doctrine of equivalents. Rather, counsel appears to believe that LTC will assert claims under that doctrine; he does not assert that the claims will be meritorious.

There is no question that the documents to which LTC points contradict the notion that ADI thought it was avoiding infringement. But the weight to be given the testimony of engineer Szepesi in light of these documents should be determined by the jury. The court cannot conclude that LTC has put forward undisputed clear and convincing evidence of willfulness.

The court reaches this conclusion without considering ADI's argument that its good faith defenses preclude

a finding of willfulness. LTC has persuasively argued that only ADX's beliefs at the time it decided to start production and sale of the 1148 part are relevant to the willfulness inquiry. See Critikon, Inc. v. Becton Dickinson Vascular Access, Inc., 120 F.3d 1253, 1259-60 (Fed.Cir.1997). The cases cited by ADI appear to pertain to the decision by the court to impose increased damages, not to the decision whether infringement was willful. See, e g, Delta-X Corp. v. Baker Hughes Prod. Tools Inc., 984 F.2d 410, 413 (Fed.Cir.1993). For this reason, the court has also disregarded the opinions of counsel rendered after the allegedly infringing activity began.

LTC's motion for summary judgment five (Doc # 431-1) is DENIED.

C

Maxim argues that LTC's failure to disclose a number of materials related to the MAX782 device, as well as the device itself, to the Patent and Trademark Office (PTO) constitutes inequitable conduct and renders the '178 patent unenforceable (Maxim SJ 1). Maxim argues that the information was material because it created a prima facie case of unpatentability. The documents at issue disclosed the design of the MAX782, a product that LTC now contends infringes the '178 patent. Maxim argues that since the documents were made public prior to the date of the filing of the '178 patent, they were presumptively prior art. Maxim relies on PTO Rule 56 which sets forth the standard for materiality. Maxim argues that the two inventors of the '178 patent, Wilcox and Flatness, as well as LTC's Vice President of Technology, Dobkin, knew about the documents related to the MAX782 and that an intent to deceive the PTO can be inferred from their withholding of the documents.

LTC argues that the references were not material because the MAX782 is not prior art and because the documents were not published. LTC asserts that Rule 56 is simply a starting point for the materiality inquiry and that it should not control if the court determines that the MAX782 is not actually prior art. LTC also argues that the documents in question were not received by Wilcox, Flatness and Dobkin on the dates that Maxim asserts. Furthermore, LTC argues that intent to deceive cannot be found in this case as matter of law under the clear and convincing standard that applies. In support of this argument, LTC submits the declarations of Flatness and Dobkin.FN2 The declarations state that neither intended to deceive the PTO and that both thought that the MAX782 was not prior art and therefore need not be submitted. Dobkin Decl at para.para. 8-9; Flatness Decl at para.para. 18-19.

FN2. The declaration of Mr Wilcox could not be provided due to his terminal illness.

In response, Maxim argues that whether the MAX782 is prior art is irrelevant and that Wilcox, Flatness and Dobkin had a continuing duty to disclose material information to the PTO, making LTC's quibbling about the timing of receipt of certain documents irrelevant. In support of its argument that intent to deceive has been shown, Maxim relies heavily on the fact that LTC disclosed a MAX782 advanced data sheet to the PTO but not the more detailed documents it later received.

Inequitable conduct includes failure to disclose to the PTO material information "coupled with an intent to deceive." Molins PLC v. Textron, Inc., 48 F.3d 1172, 1178 (Fed.Cir.1995). "The withholding of information must meet thresholds of both materiality and intent." *Id.* "Once threshold findings of materiality and intent are established, the court must weigh them to determine whether the equities warrant a conclusion that inequitable conduct occurred." *Id.* "In light of all the circumstances, an equitable judgment must be made

concerning whether the applicant's conduct is so culpable that the patent should not be enforced." *Id*.

"Intent need not be proven by direct evidence; it is most often proven by a showing of acts, the natural consequences of which are presumably intended by the actor. Generally, intent must be inferred from the facts and circumstances surrounding the applicant's conduct." *Id*. "The drawing of inferences, particularly in respect of an intent-implicating question * * * is peculiarly within the province of the fact finder that observed the witnesses." *Id* (quoting Rolls-Royce Ltd. v. GTE Valeron Corp., 800 F.2d 1101, 1110 (Fed.Cir.1986)). For this reason, finding inequitable conduct on summary judgment is rare. Paragon Podiatry Laboratory v. KLM Laboratories, 984 F.2d 1182, 1190 (Fed.Cir.1993).

With respect to materiality, the court finds LTC's argument that Rule 56 does not mandate a finding of materiality quite weak. The only case cited for that proposition, Union Oil Company of California v. Atlantic Richfield Co., 34 F Supp 2d 1208 (C.D.Cal.1998), itself stated: "Because the '393 patent was pending at the time of the 1992 revision to PTO Rule 56, the controlling standard of materiality is whether the information: [text of Rule 56]." Id at 1211. The case did not explicitly adopt the rule LTC urges upon the court: that Rule 56 is trumped by a finding that the reference (though creating a prima facie case of prior art) is not actually prior art. The court may well have adopted this rule sub silentio, but it gave no reason for doing so. The Federal Circuit, in affirming the decision, similarly did not mention Rule 56. See Union Oil Company of California v. Atlantic Richfield Co., 208 F.3d 989, 1001 (Fed.Cir.2001). In short, the court is unconvinced that Rule 56's standard for materiality ought to be disregarded.

At this stage in the litigation, however, Maxim's claim of inequitable conduct cannot succeed. Maxim cannot show, by clear and convincing evidence, that Wilcox, Flatness and Dobkin intended to deceive the PTO. Maxim has put forward evidence from which this 28 inference might be made. Particularly damning is the fact that LTC disclosed the advanced data sheet for the MAX782 but not the more detailed documents. LTC puts forward no justification for this failure. Its assertions that the inventors did not deem the MAX782 to be prior art do not explain why one reference but not the others were disclosed.

LTC prevails at summary judgment on this issue, however, purely based on the burden that Maxim must carry. The Federal Circuit has made clear that summary judgment based on intent to deceive should rarely be granted. This is not that rare case. While the references not disclosed may be technically material under Rule 56, it is understandable that the inventors of the ' 178 patent might not have so considered them. Maxim's claim that the MAX782 actually is prior art appears tenuous at best. Absent a stronger showing of materiality, the court declines to infer an intent to deceive at this stage of the litigation. This is a question to be put to the jury.

Maxim's motion for summary judgment seven (Doc # 445-1) is DENIED.

D

LTC moves for summary judgment of no inequitable conduct with respect to three alleged prior art references: the Williams materials, the LT1073 and the ML4862 (LTC SJ 4). Defendants contend that the patent's inventors (Wilcox and Flatness) and LTC's Vice President of Technology (Dobkin) committed inequitable conduct by withholding these materials from the PTO during the prosecution of the '178 patent.

To prove inequitable conduct at trial, defendants would have to prove by clear and convincing evidence: (1) the prior art withheld was material to the validity of the patent; (2) the applicant knew of the prior art and its

materiality; and (3) the applicants' failure to disclose the art resulted from an intent to mislead the PTO. Elk Corp. of Dallas v. GAF Bldg. Materials Corp., 168 F.3d 28, 30 (Fed.Cir.1999), cert. denied, 528 U.S. 873, 120 S.Ct. 178, 145 L.Ed.2d 150 (1999); FMC Corp. v. Manitowoc Co., Inc., 835 F.2d 1411, 1415 (Fed.Cir.1987). "Once threshold findings of materiality and intent are established, the court must weigh them to determine whether the equities warrant a conclusion that inequitable conduct occurred." Molins PLC v. Textron, Inc., 48 F.3d 1172, 1178 (Fed.Cir.1995). "In light of all the circumstances, an equitable judgment must be made concerning whether the applicant's conduct is so culpable that the patent should not be enforced." *Id*.

LTC's central argument is that Wilcox, Flatness and Dobkin did not know about the omitted references (or the relevant portions of them) during the patent prosecution period. For this reason, Wilcox, Flatness and Dobkin could not have intentionally withheld them in order to deceive the PTO. Thus, LTC argues that defendants cannot meet the knowledge and intent requirements. LTC also raises a limited argument about materiality of the materials in question, but LTC's main contention is that the knowledge and intent elements cannot be met. The court will consider each set of materials individually and determine what evidence has been presented in support of each required element.

1

Knowledge. The court considers first the evidence put forward by Maxim that Wilcox, Flatness and Dobkin had knowledge of the LT1073 and its alleged materiality. LTC concedes that Wilcox and Flatness knew about the hysteric comparator used in the LT1073. LTC contends, however, that their knowledge extended only to the inner workings of this structure and not to the functioning of the LT1073 as a whole. This is important because the LT1073 is allegedly material because it automatically detects low output current and causes the regulator to enter "burst mode" which is 8 similar to sleep mode. The inner workings of the hysteretic comparator are not alleged to be material. LTC also concedes that Dobkin was exposed to the LT1073 at some point between 1988 and 1990. LTC relies on assertions by Flatness that he had no knowledge of the workings of the LT1073. See LTC SJ 4 Br at 12 (citing Makman Decl (LTC SJ 4), Exh 19, 659:l3-14). This portion of the Flatness deposition was not provided to the court.

Maxim appears to claim that Wilcox discussed the LT1073 generally with Steve Pietkiewicz, Maxim Opp to LTC SJ 4 B.R. at 4-5, but the cited deposition testimony shows only that Wilcox and Pietkiewicz discussed the hysteretic comparator. See Counsel Decl, Exh 133, Pietkiewicz Depo at 121:24-122:20. Maxim also alleges that Wilcox admitted to having knowledge of the LT1073 beyond the hysteretic comparator. But the cited deposition testimony makes clear that Wilcox was not certain when he became aware of the functioning of the LT1073 as a whole. See Counsel Decl, Exh 117, Wilcox Depo at 550:7-551:16. Maxim does not claim that Flatness had any knowledge of the LT1073 beyond the inner workings of the hysteretic comparator.

Maxim does put forward evidence, however, that Dobkin knew about the operation of the LT1073. Pietkiewicz states: "I had many conversations with Bob Dobkin about this part over the course of its development." Counsel Decl, Exh 133, Pietkiewicz Depo at 72:11-13. Pietkiewicz remembers Dobkin saying that the burst mode function of the LT1073 was a "good idea." *Id* at 72:1-8. Maxim concedes that Dobkin learned about the LT1073 in the late 1980s or early 1990s.

Thus, Maxim has presented evidence that Wilcox and Flatness knew about the workings of the hysteretic comparator and looked at that structure in designing the LT1148, the LTC part that gave rise to the '178

patent. But Maxim has not put forward evidence showing that Wilcox and Flatness knew about the functioning of the LT1073 generally. In contrast, Maxim has presented evidence that Dobkin knew about the LT1073 generally. LTC asserts that Maxim has presented no evidence showing that Dobkin "was aware of the LT1073 during the prosecution, or believed it to be material." LTC SJ 4 Reply Br at 6. At the same time, LTC has submitted no evidence that Dobkin was not aware of LT1073 during the patent prosecution. In light of the undisputed fact that Dobkin was involved in the design of the LT1073 a few years earlier, absent evidence to the contrary, it seems safe to presume that Dobkin continued to know about the LT1073 at the time the '178 patent was being prosecuted. For this reason, LTC cannot show as a matter of law that the knowledge element cannot be met.

Intent to Mislead. Defendants will also have to prove intent to mislead the PTO. "Intent need not be proven by direct evidence; it is most often proven by a showing of acts, the natural consequences of which are presumably intended by the actor. Generally, intent must be inferred from the facts and circumstances surrounding the applicant's conduct." Molins PLC v. Textron, Inc., 48 F.3d 1172, 1181 (Fed.Cir.1995). Intent to mislead can be shown by proving "a high level of materiality" of the reference and clear proof that the applicant knew of that materiality. *PMC* Corp. v. Manitowoc Co. 835 F.2d 1411, 1416 (Fed.Cir.1987). "The drawing of inferences, particularly in respect of an intent-implicating question * * * is peculiarly within the province of the fact finder that observed the witnesses." *Id* (quoting Rolls-Royce Ltd. v. GTE Valeron Corp., 800 F.2d 1101, 1110 (Fed.Cir.1986)).

Defendants have presented a triable issue of fact whether Dobkin knew about the LT1073. The extent of his knowledge is unclear. No testimony from Dobkin regarding this point is presently before the court. Determining the precise extent of Dobkin's knowledge is a job for the jury. Assuming (for now) that defendants can show the materiality of the LT1073, that materiality in combination with Dobkin's knowledge could lead a reasonable jury to find intent to mislead by clear and convincing evidence. Thus, LTC has not demonstrated as a matter of law that Dobkin lacked intent to deceive.

Materiality. This leaves the question whether the LT1073 is material. LTC initially avoided discussing materiality in any depth, arguing that its motion could be decided without consideration of the operation of the LT1073. Maxim's response, however, discussed materiality at length. LTC then responded.

Under PTO Rule 56, a prior art reference is material if it "is not cumulative to information already of record or being made of record in the application" and it (a) "establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim," or (b) "refutes or is inconsistent with a position the applicant takes" before the PTO. 37 CFR s. 1.56. Maxim offers testimony from its expert, Professor Schlect, that the LT1073, when combined with figure 1 of the patent, renders the patent obvious. Counsel Decl, Exh 111, Schlect Report at 119-21. If this testimony is accepted as true, as it must be at summary judgment, then Maxim has raised a genuine factual dispute as to the materiality of the LT1073.

LTC responds by arguing that the LT1073 is cumulative based on the disclosure of the LT1432. LTC further argues that the LT1073, even in combination with figure 1 of the patent, does not render obvious the '178 patent. LTC presents expert testimony of its own. See generally Blauschild Decl (B RPL II). The Blauschild declaration puts forward strong evidence that the LT1073 is cumulative, if not immaterial. This summary judgment motion, however, is not the proper way to wade into this dispute for two reasons. First, LTC's motion was initially based solely on the inequitable conduct knowledge and intent elements; LTC reserved the right to later present expert testimony related to materiality. LTC SJ 4 Br at 18*. Second, the materiality of the LT1073 appears to relate closely to other invalidity issues that the court has decided to defer

consideration of at this time.

By its terms, LTC's motion was directed to the knowledge and intent elements. As to those elements, the court has concluded that there is a material factual dispute. For this reason, with respect to the LT1073, LTC's motion is DENIED.

2

Knowledge. Again, LTC's central argument is that Wilcox, Flatness and Dobkin did not know about the Williams materials during the prosecution of the '178 patent. LTC presents the deposition testimony of Wilcox and Flatness in which both deny ever seeing the Williams materials during the prosecution of the patent. See Makman Decl (LTC SJ 4), Exh 19, Flatness Depo at 234:11-16; *id,* Exh 1, Wilcox Depo at 568:20-569:4. LTC concedes, however, that "Dobkin had scanned through AN 29 and AN 35 [the Williams materials], looking at the figures, but not read the test, before they were published, five and four years, respectively, before the '178 patent application was filed." LTC SJ 4 B.R. at 10. But, Dobkin asserts that he did not remember Application Note (AN) 29 when he was filing the patent. Makman Decl (LTC SJ 4), Exh 3, Dobkin Depo at 411:22-412:5. Dobkin's deposition is silent with respect to his memory of AN 35.

Unitrode presents evidence that Wilcox, Flatness and Dobkin all had copies of LTC's "1990 Linear Applications Handbook," which contained AN 35 and AN 29, in their offices, and that Flatness had a second copy at home. Unitrode also points to the testimony by Mr Vinsant that Vinsant thinks Wilcox brought AN 35 to his attention. See Saunders Decl (Opp to LTC SJ 1-6), Exh 39, Vinsant Depo at 132:26-133:10. And, of course, Unitrode points to Dobkin's admission that he looked at the figures of AN 29 and AN 35. Unitrode's expert contends that these figures disclose the "burst mode" feature of the references that is alleged to be material. See Erickson Decl (Opp to LTC SJ 1-6) at para. 9.

In reply, LTC points to the uncertainty of Vinsant's opinion that Wilcox referred the AN 35 to him. LTC alleges that this uncertain testimony cannot create a triable issue of fact. LTC also references its attack on Vinsant's credibility discussed in its summary judgment five. With respect to Dobkin, LTC also 5 stresses the sheer volume of figures within AN 29 and 35 that Dobkin looked over and the volume of technical notes he reviewed.

The evidence of Dobkin and Wilcox's knowledge, if accepted as true, would support a jury finding by clear and convincing evidence that Dobkin and Wilcox knew of the Williams materials during the prosecution of the patent. LTC's argument with respect to Vinsant's credibility is improperly made in a motion for summary judgment. A jury must decide whether or not to believe Mr Vinsant. LTC's argument about the number of figures Dobkin viewed and the time between viewing AN 29 and 35 and the prosecution of the patent is directed to the weight to be given the fact that Dobkin looked at the references. This weighing of the evidence is for the jury.

In sum, the court concludes that Unitrode has raised a triable issue of fact whether Wilcox and Dobkin knew of the Williams materials at the time of the patent prosecution.

Intent to Mislead. Unitrode argues that intent to mislead can be inferred from Dobkin and Wilcox's knowledge and the materiality of the Williams materials. Assuming materiality, for now, the court agrees. A showing of high materiality, coupled with a successful showing of knowledge, gives rise to an inference of intent to mislead. See FMC Corp. v. Manitowoc Co., 835 F.2d 1411, 1416 (Fed.Cir.1987).

Unitrode also points to the fact that LTC submitted the Williams materials to the European Patent Office in connection with a patent application for a synchronously switched part, undermining LTC's argument that the references are material only to asynchronous parts. This supports an inference of intent to 5 mislead. See Molins PLC v. Textron, Inc., 48 F.3d 1172, 1181 (Fed.Cir.1995). Additionally, Unitrode points to LTC's arguments to the PTO for patentability based on the fact that the patent describes onset of sleep mode at low current levels while the prior art discloses onset at high levels. In making this final argument, Unitrode fails to consider the disclosure of the LT1432 which enters sleep mode at low output current levels. Regardless, Unitrode has raised a triable issue of fact regarding intent to mislead.

Materiality. As discussed above in connection with the LT1073 reference, LTC's motion, by its terms, is directed toward the knowledge and intent to mislead elements of inequitable conduct. The parties do, however, discuss materiality. At first glance, it seems clear that LTC cannot show immateriality as a matter of law. But, the court need not make this determination now. LTC was content to challenge only knowledge and intent and the court is willing to save the materiality inquiry for another day.

With respect to the Williams materials, LTC's motion is DENIED.

Knowledge. LTC contends that Flatness and Dobkin had not read or discussed with anyone the ML4862. LTC argues that any discussion Wilcox had about a MicroLinear part was about the ML4873, not the ML4862 and that to the extent Wilcox saw the ML4862 sheet, it was after the patent issued. See LTC SJ 4 B.R. at 13 (citing depositions of Wilcox, Dobkin and Flatness). LTC fails to provide the deposition testimony it cites in support of these arguments.

The only evidence of knowledge that Unitrode can point to is the deposition testimony of Mr Wilcox and the fact that a copy of an ML4862 advance information sheet was produced from LTC's files. One relevant part of the Wilcox deposition reads: "Q. Have you seen [the ML4862 advance information sheet] before? A. I believe I have seen this at some point, yes. Q. Do you remember when? A. No." Saunders Decl (Opp to LTC SJ 1-6), Exh 40, Wilcox Depo at 910:19-24. The other section relied on by Unitrode reads: "Q. Do you remember ever discussing the ML4862 with anybody? A. I remember discussing one of the MicroLinear dual switching parts." *Id* at 911:18-21. Additionally, Wilcox states that the discussion about a MicroLinear part likely occurred before the patent issued. *Id* at 912:4-15.

No reasonable jury could find this evidence to be clear and convincing evidence that Wilcox knew about the ML4862 before the patent issued. Wilcox does not state when he saw the ML4862 advance sheet and the part Wilcox states he likely saw before 1995 may or may not have been the ML4862. Unitrode simply offers no evidence, that if found credible by a jury, would constitute clear and convincing evidence of knowledge. With respect to the ML4862, LTC's motion for summary judgment of inequitable conduct is GRANTED.

In sum, LTC's motion for summary judgment four (Doc # 429-1) is GRANTED in part (ML4862) and DENIED in part (Williams materials and LT1073).

E

Also before the court are three motions related to LTC's counterclaims arising from the transfer of Ronald Vinsant's alleged rights to the '178 patent, and LTC's affirmative defenses to defendants' ownership counterclaims. Maxim moves to dismiss or in the alternative for summary judgment on LTC's counterclaims

(Doc # 589). Maxim also moves for summary judgment on LTC's affirmative defenses (Doc # 621). Unitrode joins both of these motions and separately moves to dismiss or in the alternative for summary judgment on LTC's counterclaims and affirmative defenses (Doc # 618).

1

As discussed above, defendants contend that Ronald Vinsant invented a polarity reversal circuit while he was employed at Teledyne Industries, Inc, that he showed the design to his colleagues at LTC after he left Teledyne and that LTC then patented the circuit without telling Vinsant or acknowledging his role in the invention of the circuit. For this reason, defendants contend that Vinsant was a co-inventor of the '178 patent. Whatever rights Vinsant had in the '178 patent due to his inventions at Teledyne were assigned to Teledyne in Vinsant's employment agreement with Teledyne. See Overson Decl, Exh D. Teledyne's rights were transferred to its successor TelCom. Vinsant also assigned his rights to the '178 patent based on work he did at Teledyne to TelCom in a June 2, 2000, agreement. See id, Exh E. The same day, Maxim acquired from TelCom any rights in the '178 patent obtained from Vinsant. Id, Exh F.

Subsequently, on November 8, 2000, the court granted leave for Maxim and Unitrode to file amended answers asserting affirmative defenses of ownership and seeking declaratory relief that Maxim was a co-owner of the '178 patent. Maxim filed its First Amended Answer (FAA) and Counterclaim for Declaratory Relief on November 8, 2000. In response, LTC filed A Reply and Counterclaim to Maxim and Unitrode's FAAs. LTC then filed an Amended Reply and Counterclaim. Unitrode also filed an Amended Answer and LTC also filed a Reply and Counterclaim and an Amended Reply and Counterclaim responsive to the Unitrode Amended Answer.

LTC's amended counterclaims asserted claims against: (1) Vinsant for breach of contract; (2) Maxim, Unitrode and Vinsant for unjust enrichment; (3) Maxim and Unitrode for unfair competition; (4) Maxim and Unitrode for intentional interference with contractual relations; and (5) unspecified defendants for return of rights. Additionally, LTC asserted a number of affirmative defenses to defendants' declaratory relief counterclaims. They include: (1) estoppel; (2). bona fide purchaser; (3) unclean hands; (4) waiver; and (5) void assignment.

2

Defendants now move to dismiss or for summary judgment on the counterclaims and for summary judgment on the affirmative defenses. In a FRCP 12(b)(6) motion, all material allegations in the complaint must be taken as true and construed in the light most favorable to plaintiff. Pareto v. FDIC, 139 F.3d 696, 699 (9th Cir.1998). Dismissal is appropriate if it "appears beyond doubt that the plaintiff can prove no set of facts in support of his claim which would entitle him to relief." Conley v. Gibson, 355 U.S. 41, 45-46, 78 S.Ct. 99, 2 L.Ed.2d 80 (1957).

In reviewing a summary judgment motion, the court must determine whether genuine issues of material fact exist, resolving any doubt in favor of the party opposing the motion. The burden of 6 establishing that there is no genuine issue of material fact lies with the moving party. Celotex Corp. v. Catrett, 477 U.S. 317, 322-23, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986). If the nonmoving party would bear the burden of proof at trial, the moving party may meet its burden by pointing out-not 10 by a conclusory statement but by demonstration-the absence of evidence to support the nonmoving party's case. Id at 325-26. Summary judgment is granted only if the moving party is entitled to judgment as a matter of law. FRCP 56(c).

Defendants present a number of arguments in favor of dismissal or summary judgment of the counterclaims and affirmative defenses. The central argument is that the counterclaims are not ripe because the court has not determined whether Maxim is a co-owner of the '178 patent. In light of the court's decision with respect to LTC's summary judgment two, the ripeness argument is now moot.

Defendants did not raise in their motions to dismiss or for summary judgment the possibility that the court's ruling on LTC's summary judgment two might render moot all of LTC's counterclaims and affirmative defenses. LTC's summary judgment two, discussed above, asked the court to conclude as a matter of law that Vinsant did not invent any claim of the '178 patent while at Teledyne. The court so concluded, granting LTC's motion. Thus, Maxim's claim to co-ownership of the patent fails and therefore it is clear that LTC's affirmative defenses to defendants' counterclaim for declaratory judgment are unnecessary. This issue need not be considered further.

Furthermore, it appears that LTC's counterclaims are also contingent on a finding that Maxim has acquired an ownership interest in the '178 patent because Vinsant disclosed a claim of the patent that he conceived at Teledyne to LTC. Defendants did not move to dismiss or for summary judgment on this ground, but the issue of whether the counterclaims were contingent on a finding that Maxim was a co-owner was integral to the ripeness argument that was central to defendants' motion to dismiss. Because the parties had an opportunity to address this issue, the court will consider this ground without asking for further briefing.

Defendants argued that the counterclaims are not ripe because they are contingent on a determination by the court that Maxim is a co-owner of the patent. LTC opposed the ripeness argument, asserting that claims contingent on a legal determination are ripe even though the determination has not yet been made, while claims contingent on the occurrence of a non-legal event, are not ripe until the event occurs. In its brief, though it had the opportunity to do so, LTC did not argue that its claims were not contingent on a determination that Maxim was a co-owner of the patent. At oral argument, however, LTC argued that at least some of the claims would still be viable even if the court granted LTC's motion for summary judgment two and found Maxim not to be a co-owner of the patent. Because this point is contested, the court will consider each of the counterclaims alleged by LTC.

a

The first counterclaim alleged by LTC is for breach of contract against Vinsant. LTC alleges: "Were Mr. Vinsant found to have communicated to Milt Wilcox or anyone else at LTC any of the work he. allegedly did at Teledyne, Mr. Vinsant breached paragraph 6 of his employment agreement with LTC, in which he promised that he would not 'improperly use or disclose any proprietary or trade secrets of [his] former or concurrent employers' during his employment at LTC." LTC Amended Reply and Counterclaims to Maxim's FAA (Doc # 579) para. 6 at 7. LTC also alleges that Vinsant breached his agreement with LTC to "hold in trust for the sole right and benefit" of LTC "any and all inventions, copyrights, discoveries, developments, improvements or trade secrets which [he] may solely or jointly conceive, or develop, or reduce to practice, or cause to be conceived, or developed, or reduced to practice" during his employment with LTC. Id at para. 7.

Neither breach of contract claim can proceed in light of the court's determination that Maxim is not a co-owner of the '178 patent. To state a cause of action for breach of contract, LTC must show (1) the existence of a valid contract between the parties; (2) plaintiff's performance or excuse for nonperformance; (3) defendant's unjustified or unexcused failure to perform; and 24(4) damages to plaintiff caused by the breach.

Zoeller v. Sterling 25 Capital Mortgage, 2000 WL 1175587 at (N.D.Cal.2000) (citing Reichert v. Gen. Ins. Co., 68 Cal.2d 822, 830, 69 Cal.Rptr. 321, 442 P.2d 377 (1968)). LTC's damage 27 allegation reads: "Were Maxim to acquire any ownership rights in the '178 patent * * * LTC would suffer damages." LTC Amended Reply and Counterclaims para. 13 at 8. Thus, the court's conclusion that Maxim is not a co-owner means that LTC has not alleged, much less can prove, the element of damages.

Defendants' motion for summary judgment on LTC's counterclaim for breach of contract against Vinsant GRANTED.

b

The second counterclaim is for unjust enrichment against Vinsant, Maxim and Unitrode. That claim states: "Mr. Vinsant would be unjustly enriched if he were determined to have any ownership interest in the '178 patent." Id para. 15 at 8, 69 Cal.Rptr. 321, 442 P.2d 377. It continues: "Maxim would be unjustly enriched if it were determined to have any ownership in the '178 patent." Id para. 16 at 9, 69 Cal.Rptr. 321, 442 P.2d 377. Finally, the claim states: "Unitrode would be unjustly enriched if any person other than LTC were determined to have an ownership interest in the '178 patent * * *." Id para. 17 at 8, 69 Cal.Rptr. 321, 442 P.2d 377.

Because the court has not determined that Vinsant, Maxim or anyone else has an ownership interest in the '178 patent, this claim fails as a matter of law. With respect to LTC's counterclaim for unjust enrichment, defendants' motion for summary judgment is GRANTED.

c

The third counterclaim brought by LTC is for intentional interference with contractual relations and is brought against Maxim alone. To prevail on a cause of action for intentional interference with contractual relations, LTC must show:

"(1) a valid contract between plaintiff and a third party; (2) defendant's knowledge of this contract; (3) defendant's intentional acts designed to induce a breach of disruption of the contractual relationship; (4) actual breach or disruption of the contractual relationship; and (5) resulting damage." Pacific Gas & Electric Co. v. Bear Stearns & Co., 50 Cal.3d 1118, 1126, 270 Cal.Rptr. 1, 791 P.2d 587 (1990).

Quelimane Company Inc. v. Stewart Title Guaranty Co., 19 Cal.4th 26, 55, 77 Cal.Rptr.2d 709, 960 P.2d 513 (1998).

LTC's damages allegation states: "LTC's damages include the damages set forth in paragraph 13, which LTC realleges herein." LTC Amended Reply and Counterclaims para. 22 at 10. Paragraph 13 alleged damages that flow from Maxim being "held to acquire any ownership rights in the '178 patent." Id para. 13 at 8, 77 Cal.Rptr.2d 709, 960 P.2d 513. Since Maxim has been determined not to hold any ownership rights in the '178 patent, summary judgment on this claim must be GRANTED for defendants.

d

LTC's fourth counterclaim is for unfair competition against Maxim and Vinsant. LTC alleges two kinds of damages: (1) "injury to its business, including lost sales and lost revenues and damage to its goodwill," and (2) the damages flowing from an inability to enforce the '178 patent were Maxim named a co-owner. Id

para.para. 36, 38 at 13, 77 Cal.Rptr.2d 709, 960 P.2d 513. Thus, even though the second type of damages will not be incurred, LTC has still pled damage from the alleged unfair competition.

Thus, the court considers the acts alleged to have been committed by Maxim that allegedly constitute unfair competition. The court notes, however, that it is unclear which actions on the part of Maxim are alleged to give rise to this cause of action. The counterclaims can be read to assert the unlawfulness of a number of actions by Maxim. LTC's counterclaim states:

Maxim has asserted that Mr. Vinsant is an inventor of the '178 patent. Maxim has attempted based on such assertion to establish that Maxim has an ownership interest in the '178 patent; to this end, Maxim orchestrated a series of agreements with Mr. Vinsant and TelCom in June 2000 with knowledge that Mr. Vinsant either (1) had no ownership interest in the '178 patent because he did not invent any claimed subject matter of the '178 patent while at Teledyne and/or did not disclose any such invention at LTC; or (2) violated his prior employment agreements with LTC and Teledyne and misrepresented his prior work at Teledyne to gain employment at LTC.

Id para. 34 at 12, 77 Cal.Rptr.2d 709, 960 P.2d 513. LTC further alleges that Maxim committed unfair competition by inducing Vinsant to breach his employment agreement with LTC. Id para. 35, 77 Cal.Rptr.2d 709, 960 P.2d 513. The counterclaim also points to Maxim's assertion "that Mr. Vinsant is an inventor of the '178 patent." Id para. 34, 77 Cal.Rptr.2d 709, 960 P.2d 513.

From these allegations, the court can discern four actions by Maxim that are alleged to constitute unfair competition: (1) inducement of breach of contract by Vinsant; (2) attempted inducement of breach of contract; (3) orchestration of an agreement that transfers no rights to the '178 patent; (4) assertion of an ownership defense in the litigation. Since the court has determined that Vinsant is not a co-inventor of the patent and therefore LTC has alleged no breach of contract claim against him, this claim comes down to an allegation that Maxim committed unfair competition by attempting to induce infringement, orchestrating an agreement to transfer rights that have nothing to do with the '178 patent and the present litigation, or asserting the ownership defense in this litigation.

As discussed above, LTC cannot assert a claim for damages arising from a determination that Maxim is a co-owner. This leaves only damages to LTC's business from lost sales, revenues and damaged good will, which potentially could have occurred independent of a declaration that Maxim is a co-owner. The court cannot imagine, however, how sales, revenue and goodwill could be affected by Maxim's actions, now that Maxim has been declared not to be a co-owner of the patent, except as a result of Maxim's assertion of the ownership defense in this litigation. And that assertion, even LTC appears to concede, is protected by California's litigation privilege, Cal Civil Code s. 47(b). See LTC Opp Br at 22 ("LTC's claim of unfair competition against Maxim is not directed against the fact that defendants have asserted a defense that Vinsant is an inventor of the '178 patent."). Thus, the only action that might have given rise to these goodwill and lost sales/revenue damages is protected by the litigation privilege.

In its brief, LTC essentially concedes that its unfair competition claim is based on Maxim's "overt actions resulting in commercial agreements giving Maxim a claim to co-ownership of LTC's patent." Id at 23, 77 Cal.Rptr.2d 709, 960 P.2d 513. This makes sense; it was the possibility that Maxim would be named a co-owner that motivated this counterclaim. But in light of the court's determination that Maxim is not a co-owner, this claim also fails. Summary judgment for defendants is GRANTED with respect to LTC's counterclaim for unfair competition.

LTC's final cause of action is for "Return of Rights." It states: "Ware Maxim, Vinsant or any other person held to have any rights in the '178 patent, such rights should be returned to LTC as a matter of law by replevin, or in equity by the construction of a constructive trust to all right, title and interest in the '178 patent for which LTC is the sole beneficiary." Id para. 40 at 13, 77 Cal.Rptr.2d 709, 960 P.2d 513.

As the court has determined that since neither Maxim nor Vinsant, or any other party other than LTC, holds ownership interest in the '178 patent, defendants' motion for summary judgment on this claim is GRANTED.

Because LTC has successfully convinced the court that Maxim cannot succeed in its ownership defense because Vinsant did not conceive of a claim of the ' 178 patent while at Teledyne and therefore cannot be a co-inventor, LTC's affirmative defenses and counterclaims fail as a matter of law.

VI

The following motions have been decided by the court as follows:

-> Unitrode SJ 2 (Doc # 437-1): GRANTED in part and DENIED in part. It is granted except with respect to indirect infringement of the apparatus claims resulting from the use of the UC1874 by IBM.

-> Maxim SJ 4 (Doc # 409-1): GRANTED.

-> LTC SJ 1 (Doc # 421-1): DENIED.

-> Unitrode SJ 1 (Doc # 436-1): GRANTED.

-> Maxim SJ 2 (Doc # 407-1): GRANTED.

-> Maxim SJ 5 (Doc # 411-1): DENIED as moot.

-> LTC SJ 2 (Doc # 423-1): GRANTED.

-> LTC SJ 3 (Doc # 427-1): DENIED as moot.

-> LTC SJ 5 (Doc # 431-1): DENIED.

-> Maxim SJ 7 (Doc # 445-1): DENIED.

-> LTC SJ 4 (Doc # 429-1): GRANTED in part and DENIED in part. It is granted with respect to the ML4862 and denied with respect to the Williams materials and the LT1073.

-> sqrt(Maxim and Vinsant's motion to dismiss LTC's counterclaims (Doc # 589-1) is DENIED.

-> Maxim and Vinsant's motion for summary judgment on LTC's counterclaims (Doc # 589-2) is GRANTED.

-> sqrt(Maxim and Vinsant's motion for summary judgment on LTC's affirmative defenses to its ownership claim (Doc # 621-1) is GRANTED.

-> sqrt(Unitrode's motion to dismiss LTC's counterclaims and for summary judgment on LTC's affirmative defenses (Doc # 618-1) is DENIED in part and GRANTED in part.

-> sqrt(Unitrode's motion for summary judgment on LTC's counterclaims (Doc # 618-2) is GRANTED.

This order grants summary judgment of non-infringement for defendant Maxim in all respects. This appears to render moot Maxim's three motions related to invalidity. Defendant Unitrode's motions for non-infringement are granted except with respect to indirect infringement of the apparatus claims. This ruling likely means that Unitrode's motions related to invalidity eventually must be decided. The order grants summary judgment for defendants on LTC's counterclaims and affirmative defenses arising out of the attempt by Maxim to become a co-owner of the patent.

The court hereby schedules a case management conference for October 4, 2001 at 10:00 am to discuss how to proceed in light of these rulings. Until that case management conference, these proceedings are STAYED. The court directs that the clerk not file any further motions until after that conference. In advance of the case management conference, the parties are directed to meet and confer to prepare a joint case management statement not exceeding 16 pages, if they can do so. In the absence of a joint statement, each party may file its own case management statement not to exceed three pages.

In the meantime, the clerk is directed to terminate all motions not otherwise ruled upon herein.

IT IS SO ORDERED.