IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

INNOVATIVE MEMORY SYSTEMS, INC., Plaintiff, v. MICRON TECHNOLOGY, INC., Defendant.	C.A. No. 14-1480-RGA

REPORT AND RECOMMENDATION
AND ORDER

Plaintiff Innovative Memory Systems, Inc. ("IMS") alleges that certain flash memory products sold by Defendant Micron Technology, Inc. ("Micron") infringe IMS's U.S. Patent Nos. 7,000,063 ("'063 patent") and 6,901,498 ("'498 patent"). Trial is currently scheduled for November 14, 2022.

Pending before the Court are three motions raising a total of eight distinct disputes: (1) IMS seeks partial summary judgment that IPR estoppel prevents Micron from relying on a particular piece of prior art (D.I. 291); (2) Micron seeks summary judgment that (a) the asserted claims of the '063 patent are invalid under 35 U.S.C. § 101, (b) that the asserted claims of the '063 patent are either not infringed or invalid, (c) that the asserted claims of the '498 patent are not infringed, (d) that IMS is not entitled to pre-suit damages for infringement of the '498 patent, (e) that IMS is not entitled to damages for all worldwide sales of Micron's products, and (f) that Micron cannot be held liable for the infringing acts of its subsidiaries (D.I. 288); and (3) Micron

seeks to exclude certain testimony from IMS's damages experts (D.I. 285). I heard oral argument on all pending motions on August 16, 2022. ("Tr. __.")

As explained below, I recommend that (1) IMS's motion for partial summary judgment (D.I. 291) be GRANTED and (2) Micron's motion for summary judgment (D.I. 288) be GRANTED-IN-PART and DENIED-IN-PART. I also order that Micron's motion to exclude (D.I. 285) is GRANTED.

I. LEGAL STANDARDS

A. Summary Judgment

A party may move for summary judgment under Federal Rule of Civil Procedure 56. Summary judgment must be granted where "there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). The burden is on the movant to demonstrate the absence of a genuine issue of material fact. *Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 585-86 (1986).

"An assertion that a fact cannot be—or, alternatively, is—genuinely disputed must be supported either by 'citing to particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for purposes of the motion only), admissions, interrogatory answers, or other materials,' or by 'showing that the materials cited do not establish the absence or presence of a genuine dispute, or that an adverse party cannot produce admissible evidence to support the fact.'" *Resop v. Deallie*, No. 15-626-LPS, 2017 WL 3586863, at *2 (D. Del. Aug. 18, 2017) (quoting Fed. R. Civ. P. 56(c)(1)(A) & (B)). A factual dispute is only genuine if "the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986). The Court must "draw all reasonable inferences in favor of the

nonmoving party, and it may not make credibility determinations or weigh the evidence." *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000).

B. Daubert

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 597 (1993), the Supreme Court held that Federal Rule of Evidence 702 creates "a gatekeeping role for the [trial] judge" in order to "ensur[e] that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." Rule 702 provides:

> A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. As the Third Circuit has explained,

> Rule 702 embodies a trilogy of restrictions on expert testimony: qualification, reliability and fit. Qualification refers to the requirement that the witness possess specialized expertise. We have interpreted this requirement liberally, holding that "a broad range of knowledge, skills, and training qualify an expert." Secondly, the testimony must be reliable; it "must be based on the 'methods and procedures of science' rather than on 'subjective belief or unsupported speculation'; the expert must have 'good grounds' for his o[r] her belief. In sum, *Daubert* holds that an inquiry into the reliability of scientific evidence under Rule 702 requires a determination as to its scientific validity." Finally, Rule 702 requires that the expert testimony must fit the issues in the case. In other words, the expert's testimony must be relevant for the purposes of the case and must assist the trier of fact. The Supreme Court explained in *Daubert* that "Rule 702's 'helpfulness' standard requires a valid scientific connection to the pertinent inquiry as a precondition to admissibility."
>
> By means of a so-called "*Daubert* hearing," the court acts as a gatekeeper, preventing opinion testimony that does not meet the

> requirements of qualification, reliability and fit from reaching the jury.

Schneider ex rel. Estate of Schneider v. Fried, 320 F.3d 396, 404-05 (3d Cir. 2003) (footnote and internal citations omitted).[1]

Rule 702 "has a liberal policy of admissibility," *Pineda v. Ford Motor Co.*, 520 F.3d 237, 243 (3d Cir. 2008), as "the question of whether the expert is credible or the opinion is correct is generally a question for the fact finder, not the court," *Summit 6, LLC v. Samsung Elecs. Co., Ltd.*, 802 F.3d 1283, 1296 (Fed. Cir. 2015). "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Daubert*, 509 U.S. at 596.

II. RECOMMENDATIONS ON THE PARTIES' SUMMARY JUDGMENT MOTIONS

A. IPR Estoppel

I will first assess IMS's motion for partial summary judgment. IMS contends that Micron is estopped under 35 U.S.C. § 315 from relying on U.S. Patent No. 5,235,585 ("Bish") as prior art against the '498 patent. I agree.

Section 315(e) governs inter partes review (IPR) estoppel, which prevents IPR petitioners from raising arguments in federal court that reasonably could have been raised during the IPR. The statute provides, in pertinent part:

> (e) Estoppel.– . . . (2) Civil actions and other proceedings.–The petitioner in an inter partes review of a claim in a patent . . . that results in a final written decision . . . may not assert . . . in a civil action . . . that the claim is invalid on any ground that the petitioner

[1] The Third Circuit wrote under an earlier version of Rule 702, but later amendments were not intended to make any substantive change.

> raised or reasonably could have raised during that inter partes review.

35 U.S.C. § 315(e)(2).

Micron was the petitioner in an IPR involving the '498 patent, but it did not raise Bish in the IPR. The Patent Trial and Appeal Board (PTAB) initially invalidated the claims that are currently asserted in this action, but the Federal Circuit vacated that portion of the PTAB's decision because its claim construction was erroneous. *Innovative Memory Sys., Inc. v. Micron Tech., Inc.*, 781 F. App'x 1013, 1018 (Fed. Cir. 2019). On remand, the PTAB found the currently asserted claims patentable. *Micron Tech., Inc. v. Innovative Memory Sys., Inc.*, No. IPR2016-00330, 2020 WL 1581565 (P.T.A.B. Apr. 1, 2020). Micron did not appeal the PTAB's decision.

Micron now wants to make an obviousness argument in this Court that relies on Bish. IMS says that Micron is estopped under § 315(e)(2) from relying on Bish because Micron could have raised that reference in the IPR. Micron says that it did not previously know about Bish and that a skilled searcher could not have found it prior to the IPR. The parties agree that IMS (as the patentee asserting estoppel) has the burden of establishing that the requirements of § 315(e)(2) have been met.

IPR estoppel clearly extends at least to arguments about references that the IPR petitioner knew about when it filed its petition, even if the petition did not rely on those references. *Cal. Inst. of Tech. v. Broadcom Ltd.*, 25 F.4th 976, 991 (Fed. Cir. 2022). But I am not aware of, and the parties did not cite, any clear guidance from the Federal Circuit about how to determine whether an IPR petitioner "reasonably could have raised" an argument about a reference that the petitioner now claims it didn't know about at the time of the IPR. Several courts, including courts in this district, have said that an IPR petitioner reasonably could have raised a particular piece of

prior art where "a skilled searcher conducting a diligent search" would have found it. *TrustID, Inc. v. Next Caller Inc.*, No. 18-172-MN, 2021 WL 3015280, at *1 (D. Del. July 6, 2021); *f'real Foods, LLC v. Hamilton Beach Brands, Inc.*, No. 16-41-CFC, 2019 WL 1558486, at *1 (D. Del. Apr. 10, 2019); *Parallel Networks Licensing, LLC v. IBM Corp.*, No. 13-2072-KAJ, 2017 WL 1045912, at *11 (D. Del. Feb. 22, 2017), *aff'd*, 721 F. App'x 994 (Fed. Cir. 2018) (affirming under Fed. Cir. R. 36); *see also Apotex Inc. v. Wyeth LLC*, No. IPR2015-00873, 2015 WL 5523393, at *4 (P.T.A.B. Sept. 16, 2015) ("What a petitioner 'could have raised' was broadly described in the legislative history of the America Invents Act ('AIA') to include prior art which a skilled searcher conducting a diligent search reasonably could have been expected to discover." (quoting 157 Cong. Rec. S1375 (daily ed. Mar. 8, 2011) (statement of Sen. Kyl))). But not much has been written about how thorough the hypothetical diligent search must be.[2]

In *f'real Foods*, the court found that a reasonably diligent search would not have uncovered a Japanese utility model[3] where the record demonstrated that the reference was not accessible by standard prior art search tools and no translation was available. *f'real Foods*, 2019 WL 1558486, at *1-2. In contrast, in *TrustID*, the court concluded that a skilled searcher would have been able

[2] The "skilled searcher conducing a diligent search" language sounds an awful lot like the standard for determining whether a reference is publicly accessible for purposes of 35 U.S.C. §§ 102 and 311(b), which says that a printed publication qualifies as prior art "if it was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it." *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 772 (Fed. Cir. 2018); *see also Centripetal Networks, Inc. v. Cisco Sys., Inc.*, 847 F. App'x 869, 877 (Fed. Cir. 2021). Neither party has suggested that the §§ 102/311(b) inquiry and the § 315(e) inquiry are the same, and I am unaware of any authority saying that they are.

[3] According to the Japan Patent Office website, "the utility model system is . . . designed to protect a device related to the shape or construction of articles or combination of articles." *See* https://www.jpo.go.jp/e/faq/yokuaru/utility.html (last visited Sept. 20, 2022).

to find a particular reference where (1) the patentee identified a search string that, if used to search the same subclass as the patent-in-suit, would have identified the reference, and (2) the string included terms that appeared in the patent-in-suit numerous times. 2021 WL 3015280, at *1 (holding that a patentee asserting estoppel could demonstrate what a reasonably diligent search would have found by "(1) identify[ing] the search string and search source that would identify the allegedly unavailable prior art and (2) present[ing] evidence, likely expert testimony, why such a criterion would be part of a skilled searcher's diligent search") (quoting *Clearlamp, LLC v. LKQ Corp.*, No. 12-2533, 2016 WL 4734389, at *9 (N.D. Ill. Mar. 18, 2016))).

For my part, I'm not sure that § 315(e) leaves any room for a patent challenger to argue that it could not reasonably have raised an indexed, searchable U.S. patent in its prior IPR proceedings. Indeed, Micron does not cite any case where such a failure was ultimately excused.[4] But I need not decide that question here because I conclude that IMS has met its burden to show that a skilled searcher could have used search terms that would have found the disputed Bish reference if run on the CPC G11 class, to which the '498 patent-in-suit belongs. (D.I. 331 ¶¶ 5-10, Exs. A-F.) The search terms proposed by IMS are straightforward—"block," "defect," "zone," "replace," "assign," and "logical"—and they appear in and relate to the subject matter of the '498 patent. The record before the Court reflects that employing various combinations of those terms to search the G11 class returns somewhere between 100 and 300 U.S. patents, including Bish. (*Id.*)

Micron points to the fact that, of the four searches it conducted, the first three did not find the Bish patent. But Micron admits that it ultimately discovered Bish through a conventional

[4] Micron cites *Palomar Technologies, Inc. v. MRSI Systems, LLC*, 373 F. Supp. 3d 322, 332 (D. Mass. 2019), but the court there held only that there was a dispute of fact as to whether a diligent searcher would have found the disputed references at the time the IPR was filed.

keyword search, suggesting that it might reasonably have been identified earlier. *See, e.g., TrustID*, 2021 WL 3015280, at *1 ("[T]he fact that Defendant included [the disputed reference] in its invalidity contentions filed just several months after the IPR petition confirms that a skilled searcher likely would have been able to find the reference."); *Wi-LAN Inc. v. LG Elecs., Inc.*, 421 F. Supp. 3d 911, 925-26 (S.D. Cal. 2019) (successful search was evidence that earlier unsuccessful searches were not diligent when there was no reason the successful search could not have been run earlier). Micron conspicuously does not provide sufficient details, such as an explanation of the search process, search terms, or hit counts from the first three searches, to enable the Court to assess whether those searches were diligent. (Tr. 200:1-6; D.I. 307, Exs. A, B.)

Nor has Micron adequately explained why it could not reasonably have run the terms it used in the fourth search until after the IPR proceedings. According to Micron, it did not find the Bish patent until it included the search term "slip" in its search string, which Micron says it had no reason to do before the IPR. (D.I. 307 at 3.) Although the term "slip" was never mentioned during the IPR proceedings by either the parties or the tribunals, Micron contends that "slip" became relevant during the IPR because IMS proposed a *narrow* construction of a claim phrase (which the Federal Circuit ultimately agreed with), and that narrow construction apparently reminded someone on Micron's team (Micron doesn't say who) of "an old concept from the disk memory era relating to 'slip.'" (D.I. 306 at 10; D.I. 307 at 3.) At bottom, Micron's argument is that it could not have been expected to uncover Bish because Micron thought that the '498 claims were broader than the IPR proceedings determined them to be.

I reject that argument, for a number of reasons. The main one is that, while it's possible that a patent owner might propose a claim construction in an IPR that could not have been

predicted, here the Federal Circuit has already held that IMS's proposed construction was correct. Unsuccessful IPR petitioners cannot avoid IPR estoppel merely because they did not subjectively foresee the patentee's correct claim construction position.

Micron argues that there is a genuine dispute of fact about whether it "reasonably could have discovered" the Bish patent that prevents the Court from ruling on the application of IPR estoppel on a summary judgment motion. (D.I. 306 at 5.) I disagree, for two independent reasons. First, there is no hard fact in dispute. Micron does not dispute, for example, that it ultimately did find that Bish patent with a keyword search and that it also could have been located using the terms proposed by IMS. Even accepting as true that Micron's first three searches did not uncover Bish, Micron has provided no evidence of what search terms it used so that its diligence can be assessed. *See, e.g., Wi-LAN Inc.*, 421 F. Supp. 3d at 926 (granting patentee's motion for summary judgment of IPR estoppel where it was undisputed that the patent challenger ultimately discovered the challenged references through a prior art search, notwithstanding the patent challenger's evidence that it did not come into possession of the references until after the IPR). Nor has Micron tried to show that IMS's proposed terms would not have been part of a diligent search.

Second, even if there were a material fact in dispute, courts in this district treat the application of IPR estoppel as a matter for the court. *See, e.g., TrustID*, 2021 WL 3015280, at *1 (granting motion in limine to exclude a reference under § 315(e) after finding that a skilled searcher likely would have been able to find it); *f'real Foods*, 2019 WL 1558486, at *1 (denying motion in limine to exclude a reference under § 315(e) after finding that a skilled searcher would not have

found it).[5] Whether the issue is styled as a motion for summary judgment, a motion in limine, a motion to strike contentions or expert reports, or even a motion for IPR estoppel, the question is the same: could the IPR petitioner reasonably have raised the ground during the IPR. Sending that question to the jury would be contrary to one of the purposes of IPR estoppel, which is to streamline litigation, not to further complicate already complicated trials by sending questions about the reasonableness of prior art searches to the jury.

For these reasons, I agree with IMS that Micron reasonably could have raised Bish in the IPR. As Micron has made no other argument against granting IMS's motion,[6] I recommend that it be granted and that Micron be estopped from relying on Bish.

B. '063 Patent: Non-infringement or, Alternatively, Invalidity Under §§ 102/103

I now turn to Micron's motion for summary judgment. I start with Micron's second argument, that the asserted claims of the '063 patent are either not infringed or invalid. Micron says that there is no material difference between its products and a prior art reference—an unexamined Japanese publication by Eiichi. According to Micron, it doesn't infringe under the Court's claim construction. But if it does infringe, then the claim is invalid over Eiichi. For the reasons explained below, I recommend that the Court deny Micron's request for summary judgment.

Micron is asserting claims 42-44. Independent claim 42 recites:

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[5] *But see Palomar Techs., Inc.*, 373 F. Supp. 3d at 332 (denying summary judgment, stating that "[i]t appears that the issue of whether a skilled, diligent search reasonably should have uncovered a reference is a question of fact").

[6] Micron has not argued, for example, that it should not be estopped from raising an invalidity ground that includes Bish in combination with other prior art that Micron could not reasonably have raised in the IPR.

> 42. A method for creating a write-once memory device from a write-many memory device, the method comprising:
>
> (a) providing a memory device comprising a memory array comprising a plurality of write-many memory cell[s]; and
>
> (b) rendering at least some of the write-many memory cells in the memory array as write-once memory cells by preventing more than one write to said at least some of the write-many memory cells.

Judge Andrews held a claim construction hearing[7] on November 3, 2020 and construed the limitation "rendering at least some of the write-many memory cells in the memory array as write-once memory cells by preventing more than one write to said at least some of the write-many memory cells," to mean "causing at least some of the write-many memory cells in the memory array to become memory cells that cannot be written to more than once." (D.I. 149 at 6-11; D.I. 154 at 2.) Based on the parties' agreement, he also construed "write-many device" and "write-many cell" to mean an electronic storage device or memory cell "to which data can be written more than once." (D.I. 149 at 6; D.I. 154 at 1.)

Both Micron's products and Eiichi, the prior art, are non-volatile memory devices where some cells can normally only be written once. But it is possible, through different means, to write cells in either device multiple times. Eiichi's device does not include all the hardware necessary to erase and rewrite cells, but cells can be written multiple times using a separate hardware device

[7] The purpose of the claim construction process is to "determin[e] the meaning and scope of the patent claims asserted to be infringed." *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 370 (1996). When the parties have an actual dispute regarding the proper scope of claim terms, their dispute must be resolved by the judge, not the jury. *Id.* at 979. The Court only needs to construe a claim term if there is a dispute over its meaning, and it only needs to be construed to the extent necessary to resolve the dispute. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

called a "tester." (D.I. 290, Ex. 10 (Eiichi) ¶¶ 11-12, 16-17.) In Micron's products, an internal controller prevents multiple writes to a designated one-time programable ("OTP") area, but rewriting can be enabled (without separate hardware) by setting the device into a "test mode." The test mode can only be enabled by setting a mode bit that is inaccessible to ordinary users. (D.I. 290, Ex. 4 ¶¶ 206-55.)

Micron argues that either both its products and Eiichi meet the elements of the claims, rendering the asserted claims invalid, or neither do. Micron argues, first and foremost, that its products cannot infringe claim 42 because the Court's construction that cells "cannot be written to more than once" means that rendering is permanent and there is no way to write those cells again. Alternatively, Micron says that, if the Court's construction is broad enough to include OTP cells that can be rewritten with a special mode, then the construction would also encompass the Eiichi device, making the claims invalid under §§ 102 and 103.

IMS responds that the Court's construction that "cells cannot be written to more than once" is met by a write-many cell that is rendered write-once for a period, during which the cell cannot be written to more than once, even though the cell may be put into a test mode where it becomes write-many again. In response to Micron's invalidity argument, IMS points out that the claim doesn't just cover a device with write-once cells; rather, it covers a device with write-once cells that were originally write-many cells. IMS argues that Eiichi does not disclose creating a write-once device from a write-many device as claimed because, unlike Micron's products, Eiichi's device was fabricated as a write-once device.

The parties' disputes are genuine. The question is, are they legal disputes about claim construction or material disputes about infringement and validity? If they are disputes about claim

construction, the Court must resolve them because they have not yet been assessed: the parties' *Markman* briefing did not present, nor did the Court decide, any dispute about whether the claimed step of rendering cells so that they cannot be written to more than once requires that the change be permanent in the sense that it cannot be reversed by the manufacturer, even though the cell remains write-once in normal user operation. Nor did the parties' claim construction briefing present, or the Court decide, a claim construction dispute about whether the claims cover the testing of a device that was fabricated as a write-once device.

Prior to the summary judgment hearing, I requested supplemental briefing on the issue of whether Micron's motion raised claim construction disputes that may not have been contemplated and resolved by Judge Andrews's claim construction opinion and order. Micron insists that the first issue—whether "rendering . . . write-once" must be permanent—is not about construction and the Court should not further construe that term. (D.I. 351 at 2.) IMS agrees. (*Id.*) As to the second issue—whether the claims are broad enough to cover the testing of a device that was not originally manufactured as a write-many device—both sides want the Court to determine whether the preamble of claim 42 is limiting, but they agree that the Court should not further construe the preamble's "write-many memory device." (*Id.* at 3.)

i. Micron's non-infringement argument

Micron argues that it is entitled to summary judgment of non-infringement because there is no dispute that its products can be rewritten in test mode and the Court's construction of "rendering . . ." requires "causing at least some of the write-many memory cells in the memory array to become memory cells that cannot be written to more than once." Micron points out that the Court's construction does not say "cannot be written to more than once [by a customer]" or "cannot be written to more than once [outside of test mode]." (D.I. 289 at 13.) That is true, but

the Court's construction also does not say "causing . . . cells . . . to [permanently] become memory cells that cannot be [reconfigured so that they can be] written to more than once" or "cannot be written to more than once[, even by the manufacturer outside of normal operation]." As the movant requesting summary judgment, it is Micron's responsibility to identify any additional claim construction disputes that are material to granting its motion. In light of Micron's insistence that the phrase requires no additional construction, to obtain summary judgment, Micron would have to show that IMS's evidence of infringement is actually inconsistent with the Court's construction. Because the Court did not address in its construction opinion whether the rendering must be permanent, I cannot say that IMS's infringement evidence is actually inconsistent. (*See, e.g.*, D.I. 310 ¶¶ 73, 77-78, 95.)

Micron says, alternatively, that the "rendering . . ." limitation is not met because the Court construed it as an "unqualified negative limitation" that cannot, as a matter of law, be limited to "certain operational modes." (D.I. 351 at 2; *see also* D.I. 327 at 5 (citing *Nash v. Microsoft Corp.*, No. 3-1667, 2005 WL 5912091, at *11 (S.D. Tex. Apr. 1, 2005), *aff'd*, 173 F. App'x 828 (Fed. Cir. 2006)); D.I. 289 at 13 (citing *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 843 F.3d 1315, 1336-38 (Fed. Cir. 2016)).) There are multiple problems with that argument. The biggest is that it relies on a faulty premise: Judge Andrews's *Markman* opinion did not consider whether the rendering limitation was an "unqualified" negative limitation. And while it is true that a product cannot infringe if it includes an element that is expressly excluded from the scope of the

claims, *see Kustom Signals, Inc. v. Applied Concepts, Inc.*, 264 F.3d 1326, 1332 (Fed. Cir. 2001), how much a negative limitation excludes is itself a question of construction.[8]

In short, the situation here is this: The Court has already construed the relevant limitation. Micron, the party requesting summary judgment, says that there is no further claim construction issue that needs resolution. IMS has evidence of infringement that is not inconsistent with the Court's construction. The jury can decide whether Micron's evidence is sufficient to establish infringement. Micron's motion for summary judgment of non-infringement should be denied.

ii. Micron's invalidity argument

If the Court denies Micron's motion for summary judgment of non-infringement, it must reach Micron's alternative request for summary judgment that the asserted claims are invalid over Eiichi. Micron says that Eiichi discloses the step of "causing at least some of the write-many memory cells in the memory array to become memory cells that cannot be written to more than once" because it discloses writing and erasing cells in a memory device using separate tester hardware. According to Micron, once the tester is removed from the Eiichi memory device, "it is taken out of the write-many test mode and becomes a write-once device." (D.I. 327 at 7.) IMS responds that the Eiichi device is manufactured as a write-once memory device and Eiichi thus

[8] Another problem with Micron's position is that it points to a rule about the legal effect of exclusionary language in claims and attempts to extend that rule to the language the Court adopted in its construction. The Court's decision to use certain language in its claim construction does not invoke doctrinal rules that would apply to the original claim language. Constructions do not follow the same conventions and formalities as claim language, which is one reason courts construe claims in the first place. The Court's construction is meant to inform a lay jury how to interpret the claims, which is why it uses non-technical words like "cannot." As explained above, the parties did not present a dispute to Judge Andrews about whether causing cells to become memory cells that "cannot" be written to more than once means that the cells could not be re-written by the manufacturer outside of normal operation by a user.

does not disclose creating a write-once memory device from a write-many memory device, as required by the preamble of independent claim 42.

The parties present this dispute to the Court as being about whether the preamble of claim 42—"A method for creating a write-once memory device from a write-many memory device"—is limiting. The parties did not raise this dispute during the prior *Markman* proceedings. However, in accordance with the parties' agreement, the Court did construe "write-many [memory] device," which appears only in the preamble. (D.I. 154 at 1.) In their supplemental letter to the Court, the parties agree that the Court now needs to decide whether the preamble is limiting. (D.I. 351 at 3.)

The way the parties present this dispute to the Court raises questions. As an initial matter, I'm not sure what, if anything, the preamble's "write-many memory device" adds to the claim. The body of claim 42 already requires "a memory device comprising a memory array comprising a plurality of write-many memory cell[s]." I don't know if a person of skill in the art would see a difference between the preamble's "write-many memory device" and the body's "memory device comprising a memory array comprising a plurality of write-many memory cell[s]."[9] Moreover, it appears to me that the real dispute here is about whether the claimed "write-many memory cells"

[9] The following exchange occurred at the summary judgment hearing:

COURT: I guess we're a little confused about why we're arguing about the preamble. . . . [I]s the preamble really adding anything? The body of the claim still requires a write-many memory cell. Isn't what you're getting at that this prior art [Eiichi] device isn't a write-many memory cell?

[IMS]: Fair point. We do say that the preamble is what makes it clear, that it clearly informed what the providing step in the claim means, that you do have to start out with a write-many memory device and Eiichi is not a write-many memory device.

(Tr. 58:16-59:10.)

would be understood by a person of skill in the art to be broad enough to include memory cells that can only be written to once unless they are connected to specialized hardware.

That said, I will resolve the dispute as the parties have presented it to me. The Federal Circuit has often stated that "as a general rule preamble language is not treated as limiting." *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1347 (Fed. Cir. 2012). But it has also repeatedly stated that "there is no 'litmus test' for determining whether a preamble is limiting." *Eli Lilly & Co. v. Teva Pharm. Int'l GmbH*, 8 F.4th 1331, 1340 (Fed. Cir. 2021) (citing *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006)). In contrast to apparatus and composition claims, which cover what a device or composition is, not what it does, method claims are often directed to what the method does. And what a method does is often in the preamble, which "tend[s] to result in a conclusion that such preamble language is limiting." *Id.* at 1341; *Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed. Cir. 2003). Ultimately, "[w]hether to treat a preamble as a claim limitation is determined on the facts of each case in light of the claim as a whole and the invention described in the patent." *Eli Lilly*, 8 F.4th at 1340 (citing *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 831 (Fed. Cir. 2003)); *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989) ("The effect preamble language should be given can be resolved only on review of the entirety of the patent to gain an understanding of what the inventors actually invented and intended to encompass by the claim.").

I agree with IMS that the preamble is limiting. Asserted claim 42 is a method claim, not an apparatus claim. The preamble refers to a method of converting a write-many device to a write-once device, consistent with the specification's focus on starting with a write-many device and

then limiting the number of writes. (*E.g.*, '063 patent, Abstract, 1:12-18, 1:38-40, 1:47-53, 4:1-6:52.) Indeed, the title of the patent is "Write-Many Memory Device and Method For Limiting a Number of Writes to the Write-Many Memory Device." Having reviewed the claim in view of the entirety of the patent, I conclude that the inventors "invented and intended to encompass by the claim" a method of converting a write-many device to a write-once device. *Corning Glass Works*, 868 F.2d at 1257.

Having concluded that the preamble is limiting, the parties do not request any further construction of "write-many [memory] device," which the Court previously construed based on the parties' agreement to mean "an electronic storage device to which data can be written to more than once." (D.I. 154 at 1.)

Micron nevertheless argues that it is entitled to summary judgment of invalidity because Eiichi's device becomes a write-many device when it is connected to the tester and is rendered a write-once device when the tester is removed. IMS responds that the write-many memory device recited in the preamble is only met by a device that was fabricated as a write-many memory device, which Eiichi does not disclose.

As the movant requesting summary judgment, it is Micron's responsibility to identify any claim construction disputes that are material to granting its motion. In light of Micron's failure to request additional construction, to obtain summary judgment, Micron would have to show that IMS's evidence that Eiichi does not disclose converting a write-many device to a write-once device is inconsistent with the Court's current construction. Because the parties have never asked the Court to resolve a claim construction dispute about whether a "write-many memory device" includes a device that is rendered write-many only transiently when connected to other hardware,

I cannot say that IMS's evidence about what Eiichi discloses is inconsistent.[10] (*See, e.g.*, D.I. 310 ¶¶ 105-06.) The jury can decide. Micron's request for summary judgment of invalidity of the asserted claims of the '063 patent should be denied.[11]

C. '063 Patent: Invalidity Under 35 U.S.C. § 101

I now turn back to Micron's first argument, which is that the Court should grant summary judgment that the asserted claims of the '063 patent are invalid under 35 U.S.C. § 101 because they are directed to ineligible subject matter. I disagree.

Section 101 defines the categories of subject matter that are patent eligible. It provides: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101. The Supreme Court has recognized three exceptions to the broad statutory categories of patent-eligible subject matter: "laws of nature, natural phenomena, and abstract ideas" are not patent-eligible. *Diamond v. Diehr*, 450 U.S. 175, 185 (1981). "Whether a claim recites patent-eligible subject matter is a question of law which may

[10] To be clear, I am not suggesting that Eiichi does not disclose a "write-many memory device" because it is only transiently a "write-many memory device." Rather, I'm pointing out that the fact that it can only be rewritten transiently when used with other hardware may mean that it is not ever a "write-many memory device."

[11] Even if the Court disagrees that the preamble is limiting, it appears to me that there may still be a material dispute over whether the claimed "write-many memory cell[s]" are satisfied by cells in a device that are fabricated as write-once cells and can only be rewritten though use of a separate tester, as in Eiichi. (*See, e.g.*, D.I. 310 ¶ 105 ("Because Eiichi starts with creating a write-once memory device, it does not meet the limitation of creating a write-once memory device from a write-many memory device that is manufactured to have a plurality of write-many memory cells, some of which are rendered as write-once memory cells."); *id.* ¶ 106 ("Eiichi does not disclose creating a write-once device from a write-many device with an array of write-many memory cells."); Tr. 61:24-62:13, 63:7-12.) I would deny summary judgment on that basis as well.

contain disputes over underlying facts." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1368 (Fed. Cir. 2018).

The Supreme Court has established a two-step test for determining whether patent claims are invalid under 35 U.S.C. § 101. *Alice Corp. v. CLS Bank Int'l*, 573 U.S. 208 (2014). At step one, the court must "determine whether the claims at issue are directed to a patent-ineligible concept." *Alice*, 573 U.S. at 218. This first step requires the court to "examine the 'focus' of the claim, i.e., its 'character as a whole,' in order to determine whether the claim is directed to an abstract idea." *Epic IP LLC v. Backblaze, Inc.*, 351 F. Supp. 3d 733, 736 (D. Del. 2018) (Bryson, J.) (quoting *SAP Am., Inc. v. InvestPic, LLC*, 898 F.3d 1161, 1167 (Fed. Cir. 2018); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015)).

Because "all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas," *Mayo Collaborative Servs. v. Prometheus Labs.*, 566 U.S. 66, 71 (2012), "courts 'must be careful to avoid oversimplifying the claims' by looking at them generally and failing to account for the specific requirements of the claims[,]" *McRO Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016) (quoting *In re TLI Commc'ns LLC Pat. Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016)); *see also Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337 (Fed. Cir. 2016) ("[D]escribing the claims at [too] high [a] level of abstraction and untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule."). "At step one, therefore, it is not enough to merely identify a patent-ineligible concept underlying the claim; [the court] must determine whether that patent-ineligible concept is what the claim is 'directed to.'" *Rapid Litig. Mgmt. Ltd. v. CellzDirect, Inc.*, 827 F.3d 1042, 1050 (Fed. Cir. 2016). If the claims are not directed to a patent-ineligible concept, then the claims are patent-

eligible under § 101 and the analysis is over. If, however, the claims are directed to a patent-ineligible concept, then the analysis proceeds to step two.

At step two, the court "consider[s] the elements of each claim both individually and as an ordered combination" to determine if there is an "inventive concept—*i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Alice*, 573 U.S. at 217-18 (internal quotations and citations omitted). "It is well-settled that mere recitation of concrete, tangible components is insufficient to confer patent eligibility to an otherwise abstract idea." *TLI Commc'ns*, 823 F.3d at 613. Thus, "[m]erely reciting the use of a generic computer or adding the words 'apply it with a computer'" does not transform a patent-ineligible concept into patent-eligible subject matter. *Two-Way Media Ltd. v. Comcast Cable Commc'ns, LLC*, 874 F.3d 1329, 1338 (Fed. Cir. 2017) (quoting *Alice*, 573 U.S. at 223). Nor is there an inventive concept when the claims "[s]imply append[ ] conventional steps, specified at a high level of generality" to a patent ineligible concept. *Alice*, 573 U.S. at 222.

Conversely, claims pass muster at step two when they "involve more than performance of well-understood, routine, and conventional activities previously known to the industry." *Berkheimer*, 881 F.3d at 1367 (citation and internal marks omitted). "The mere fact that something is disclosed in a piece of prior art . . . does not mean it was well-understood, routine, and conventional." *Id.* at 1369. Moreover, "an inventive concept can be found in the non-conventional and non-generic arrangement of known, conventional pieces." *Bascom Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1350 (Fed. Cir. 2016).

Here, Micron argues that independent claim 42 and dependent claims 43 and 44 of the '063 patent are directed to the abstract idea "of causing write-many memory cells to become write-once memory cells." I am not persuaded that the claims are directed to an abstract idea. Rather, I agree with IMS that the claims are directed to a non-abstract improvement to the creation of a write-once memory device.

At this stage in the development of § 101 law, it is widely acknowledged that there is no single, comprehensive definition of an abstract idea. The Federal Circuit has instead suggested that courts should compare the claims at issue to claims that have been considered in other decisions.

One line of cases, including *Alice*, holds that "method[s] of organizing human activity," such as fundamental economic practices, are abstract ideas. *Alice Corp.*, 573 U.S. at 220-21. Micron does not suggest that this case is like those cases, and it is not.

Another line of cases is the "do it on a computer" cases. Those cases say that claims that merely recite automating a previously known economic or other task through the process of collecting, analyzing, and displaying data are directed to abstract ideas. *See, e.g.*, *Univ. of Fla. Rsch. Found., Inc. v. Gen. Elec. Co.*, 916 F.3d 1363, 1367 (Fed. Cir. 2019) (claims directed to collecting, manipulating, and displaying data); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1340-41 (Fed. Cir. 2017) (same). The claims here are not like the claims in those cases because they do not invoke a computer being used merely as a tool to manipulate data or to automate a previously known process. Rather, the claims here are directed to a method of creating a write-once memory device. Micron relies heavily on the *University of Florida* case, but

that case involved a "quintessential 'do it on a computer' patent," 916 F.3d at 1367, and the asserted claims here are not "do it on a computer" claims.

The claims here are more akin to the types of non-abstract improvements to computer technology that the Federal Circuit held to be patent eligible in *Enfish*, 822 F.3d at 1335-39, *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1260 (Fed. Cir. 2017), and *Koninklijke KPN N.V. v. Gemalto M2M GmbH*, 942 F.3d 1143, 1151 (Fed. Cir. 2019). The '063 patent specification explains that, while write-many memory devices were known in the art, there was a need for write-many memory devices that controlled the allowable number of writes. ('063 patent 1:12-14, 38-40.) And it teaches that the process of creating a write-once device from a write-many device also results in certain benefits and functionalities. (*E.g., id.*, 5:58-7:14.) By requiring the creation of a write-once device from a device having write-many memory cells, independent claim 42 recites a specific way of creating a write-once device that achieves the disclosed improvement.

Micron nevertheless suggests that claim 42 is doomed to abstraction because it uses functional language. It points out that the claim phrase does not specify any particular way of causing write-many memory cells to become write-once memory cells. That is true, but the claimed requirement of making a device with write-once cells out of a device with write-many cells puts the scope of the claim squarely within what the specification teaches is the patent's contribution to the art. In other words, the claims do not simply recite, without more, the mere desired result of creating a write-once device, but rather recite a "sufficiently specific" implementation for doing so: starting with a write-many device and turning it into a write-once device. *Koninklijke*, 942 F.3d at 1148-1151 (holding that a claim reciting a "varying device" that performed permutations that varied in time was not directed to an abstract idea even though the

claim did not specify how the permutations were modified in time); *see also Visual Memory*, 867 F.3d at 1260.

Micron cites a number of cases in which claims that employed functional language were held to be abstract but, unlike the claims here, those cases did not involve claims directed to a specific improvement in computer functionality. *See, e.g., Free Stream Media Corp. v. Alphonso Inc.*, 996 F.3d 1355, 1364 (Fed. Cir. 2021) (claims reciting providing targeted advertisements to a mobile phone "do not recite an improvement in computer functionality"); *Dropbox, Inc. v. Synchronoss Techs., Inc.*, 815 Fed. App'x 529, 535 (Fed. Cir. 2020) (agreeing with district court's conclusion that the asserted claim was directed to "the abstract idea of exchanging data using a computer"); *Univ. of Fla.*, 916 F.3d at 1367 ("This is a quintessential 'do it on a computer' patent[.]"); *Two-Way Media*, 874 F.3d at 1338 ("Claim 1 manipulates data but fails to do so in a non-abstract way.").

Micron has not shown that the asserted claims of the '063 patent are directed to an abstract idea. I recommend that the Court deny its motion for summary judgment of invalidity under § 101.

D. '498 Patent: Non-infringement

Micron's third argument is that its products do not infringe the asserted '498 patent claims as construed by the Court. I recommend that the Court deny Micron's request for summary judgment on this issue.

Three independent claims are at issue. Claim 1 provides:

> 1. A memory system circuit, comprising:
>
> a memory comprising a plurality of blocks of non-volatile storage elements wherein the storage elements within individual ones of the blocks are simultaneously erasable, and

> a controller that controls programming of data into addressed blocks, reading data from addressed blocks and erasing data from one or more of addressed blocks at a time,
>
> wherein the memory is organized into logical zones each comprised of one or more blocks for address translation, and
>
> *wherein the correspondence of blocks to zones is adjustable by [the] controller*.

(emphasis added). Independent claim 11 likewise requires that "the correspondence of blocks to zones is adjustable by [the] controller," and independent claim 43 similarly requires that "the correspondence between physical blocks and logical address sections is adaptable by the controller in response to defects in the memory."

In the prior IPR proceedings, the Federal Circuit reviewed *de novo* the PTAB's construction of the "correspondence" limitations under the "broadest reasonable construction" standard. *Innovative Memory Sys.,* 781 Fed. App'x at 1015. It held that "[t]he term[s] require[] that the controller can adjust zone boundaries such that blocks from one logical zone are shifted to another logical zone." *Id.* at 1016-17. In so holding, it rejected the PTAB's conclusion that the phrases were broad enough to encompass the situation where blocks that were never assigned to a logical zone are shifted into a logical zone. *Id.* at 1016. Consistent with the Federal Circuit's opinion in the IPR proceedings, in this case Judge Andrews construed the "correspondence" limitations to require, in pertinent part, that "the controller can adjust zone boundaries such that *assigned* blocks from one logical zone are shifted to another logical zone." (D.I. 151 at 2 (emphasis added); D.I. 147 at 11-16.)

For purposes of resolving this motion, there appears to be no dispute that the MX500 accused devices contain meta blocks that include a collection of blocks with logical addresses assigned to them. When a block in a meta block fails, that meta block is retired and any remaining

good blocks within the meta block are listed in a spare good block table where the logical addresses are removed. Then, if another block in another meta block fails, those spare blocks can replace the failing block. (D.I. 289 at 19-20; D.I. 308 at 21-22; D.I. 327 at 9.) IMS contends that the "correspondence" limitations are met when a block that had a logical address assigned to it in one logical zone is ultimately shifted to another logical zone, even if during the shifting process the block was intermediately moved to a spare good block table where the logical address was removed. Micron argues that the MX500 products cannot infringe the claims as construed because there is no dispute that at the time the blocks in the spare good block table are moved to the new zone, they are not "assigned blocks" (because they do not have an assigned logical address) and they are not "from one logical zone" (because they are not part of any logical zone).

As for the remaining P320h and P420m accused devices, there also appears to be no dispute for purposes of this motion that those devices shift hardware blocks in a logical zone to replace defective firmware blocks in another logical zone, but in the process they enter an intermediate state where they lose their logical addresses. (D.I. 289 at 21; D.I. 308 at 22-23; D.I. 327 at 9.) IMS contends that the "correspondence" limitations are met even though the blocks enter the intermediate state where they lack logical addresses. Micron argues that the P320h and P420m products cannot infringe the claims as construed because there is no dispute that at the time they enter the new zone, the blocks are not "assigned blocks" because they do not have logical addresses.

The parties' dispute centers on whether the "correspondence" limitations are broad enough to encompass the situation where a block is originally assigned to a logical zone, enters an intermediate state where it loses its logical address and zone, and then moves into a new logical

zone. The Federal Circuit's opinion in the IPR proceedings did not address that question; the court there considered only whether the claims covered the shifting of blocks that were never assigned to a logical zone. (*See* D.I. 133 (Revised Joint Claim Construction Br. at 27 (Micron: "[T]he [Federal Circuit] reviewed only the single issue that the [PTAB] considered, namely, whether the claim term 'is broad enough to encompass both the situation where blocks are assigned to zones and the situation where the blocks are not yet assigned.'" (citing *Innovative Memory Sys*., 781 F. App'x at 1016)).) The parties have never presented to this Court, and this Court has never resolved, a claim construction dispute that would dictate the outcome of the current dispute. (D.I. 149 at 13-16.)

I asked the parties if there was a latent claim construction dispute that needed resolution. Both sides told me that no additional construction was necessary. (D.I. 351 at 3-4.)

In light of the parties' agreement that there are no latent claim construction disputes, Micron's summary judgment motion should be denied. Micron's argument for summary judgment is premised on its contention that the Court's construction excludes methods of shifting blocks where the blocks enter an intermediate state where they lack logical addresses. But the Court has never so held, and nothing in the Court's construction supports such a limitation. The jury can decide if Micron's products infringe. I recommend that the Court deny Micron's request for summary judgment of non-infringement of the '498 patent.

E. No Pre-suit Damages

Micron's fourth argument is that IMS cannot obtain pre-suit damages for infringement of the '498 patent because a prior owner of the patent failed to mark products that embody it. I agree that Micron is entitled to partial summary judgment on this issue.

The patent marking statute, 35 U.S.C. § 287(a), provides in relevant part that when a plaintiff makes or sells a product practicing its patent, the plaintiff can only recover pre-suit damages from an infringer if (1) the patentee marked its product in the manner specified in § 287(a) or (2) the patentee notified the infringer of its infringement. Even if a plaintiff patentee doesn't make or sell anything, it cannot recover pre-suit damages (absent providing notice) if a prior owner of the patent failed to mark its products covered by the patent. *See Horatio Washington Depot Techs. LLC v. Tolmar, Inc.*, No. 17-1086-LPS, 2019 WL 1276028, at *2 (D. Del. Mar. 20, 2019).

Because the marking requirement of § 287 is a condition of damages, not an affirmative defense, the patentee bears the burden of proving compliance, either by showing that the relevant products were marked or by showing that they did not practice the patent. *Arctic Cat Inc. v. Bombardier Rec. Prods. Inc.*, 876 F.3d 1350, 1367 (Fed. Cir. 2017). However, to give reasonable boundaries to the patentee's burden of proof, the Federal Circuit has imposed a limited initial burden on accused infringers: they must identify the articles sold that allegedly embody the patents. *Id.* at 1368. The accused infringer's burden is not a burden of proof or persuasion; it is merely a procedural burden to provide notice of the identity of products that it believes required marking. *Id.* ("To be clear, this is a low bar.").

IMS does not dispute that it did not give Micron pre-suit notice of infringement. IMS also does not dispute that Micron identified two unmarked and allegedly patented products sold by the prior owner of the '498 patent, SanDisk, before IMS filed this suit in 2014. Thus, if the identified SanDisk products are covered by the '498 patent and SanDisk failed to mark them when it owned the patent, IMS is barred from recovering pre-suit damages.

IMS contends that there is a genuine dispute over whether either of the identified SanDisk products actually practiced the '498 patent. Because IMS has the burden of proof on this issue, in order to avoid summary judgment it must point to evidence in the record from which a jury might find that the SanDisk products do not embody the '498 patent. *Blunt v. Lower Merion Sch. Dist.*, 767 F.3d 247, 265 (3d Cir. 2014) ("[W]here a non-moving party fails sufficiently to establish the existence of an essential element of its case on which it bears the burden of proof at trial, there is not a genuine dispute with respect to a material fact and thus the moving party is entitled to judgment as a matter of law.").

IMS has failed to do so. Instead, it essentially seeks to shift the burden of proof to Micron. IMS points out that (1) Micron's expert referred to SanDisk user manuals that described the products at only a high level and do not establish that they meet the elements of the claims, and (2) IMS's expert said that "there is no evidence that any of the SanDisk products [Micron's expert listed] engages in [certain limitations required by the '498 patent claims]."[12] Neither of those things are evidence that the SanDisk products are not covered by the '498 patent. IMS offered no evidence that the SanDisk products do not embody the '498 patent. And without any evidence, there can be no genuine dispute of fact.[13] Accordingly, I recommend that the Court grant partial summary judgment that IMS cannot recover pre-suit damages for infringement of the '498 patent.

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[12] IMS's brief asserts that its expert "confirm[ed] . . . that none of the [SanDisk] products" meet certain claim limitations required by the '498 patent. (D.I. 308 at 23; *see also* Tr. 186:5-8.) IMS's expert did not "confirm" that. He merely opined that "there is no evidence" in the product data sheets that the SanDisk products meet those limitations. (D.I. 310 ¶ 100.)

[13] IMS suggested for the first time at oral argument that the SanDisk products identified by Micron might never have been sold. That argument was not raised in the briefs and it is waived. Even if it weren't waived, I would conclude that Micron met its burden of identification by

F. Foreign Sales

Micron's fifth argument is that IMS is not entitled to damages for all worldwide sales of Micron's products. Micron points out that one of IMS's damages theories treats all of Micron's overseas sales as infringing sales even though there is no genuine dispute that some of those products are manufactured and delivered entirely overseas. Micron says that because IMS has no evidence that those sales count as a sale or offer for sale in the United States within the meaning of 35 U.S.C. § 271(a), the Court should grant summary judgment that IMS cannot recover damages for those sales. I agree.

Section 271(a) says, in relevant part, that it is patent infringement to "make[], use[], offer[] to sell, or sell[] any patented invention[] *within the United States*." 35 U.S.C. § 271(a) (emphasis added). One of IMS's damages theories relies on a definition of Micron's revenues—referred to as "US sales – least restrictive definition"—that "assume[s] that all sales are US sales and therefore infringe."[14] (D.I. 290, Ex. 18; *see also id.*, Ex. 17 ¶ 146.) IMS points to no evidence to contest Micron's assertion that a substantial portion of its worldwide sales includes products manufactured and delivered entirely outside of the United States. And IMS does not dispute that the mere sale or offer to sell a product outside of the United States cannot constitute patent infringement. *See Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 831 F.3d 1369, 1376-77 (Fed. Cir. 2016). However, IMS

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pointing to data sheets for commercial SanDisk products, which permits an inference that those products were in fact sold.

[14] IMS's expert performed a separate calculation that relied only on the revenues for products that were either "fabricated, assembled, tested or shipped in the U.S." D.I. 290, Ex. 17 ¶ 146 (referring to "US sales – most restrictive definition"). Micron's motion does not challenge that calculation. (Tr. 124:10-125:22.)

contends that there is a material dispute of fact regarding whether the wholly overseas deliveries actually constitute sales within the United States within the meaning of § 271(a).

According to the Federal Circuit, whether a sale occurs "within" the United States depends on where the "substantial activities of [the] sales transaction" occurred. *Id.* at 1378. "[W]hen substantial activities of a sales transaction, including the final formation of a contract for sale encompassing all essential terms as well as the delivery and performance under that sales contract, occur entirely outside the United States, pricing and contracting negotiations in the United States alone do not constitute or transform those extraterritorial activities into a sale within the United States for purposes of § 271(a)." *Id.*

In support of its argument that Micron's overseas sales constitute sales within the United States, IMS points to evidence that Micron controls transfer pricing between itself and its foreign subsidiaries and that Micron's domestic sales team sometimes coordinates or supports its foreign sales teams. (D.I. 309 Exs. J-O.) I don't know if any profit Micron makes in the United States from the transfer of patented articles between its subsidiaries would be subject to royalties under 35 U.S.C. § 284; that is not IMS's claim and I therefore do not address it. But the fact that Micron controls the pricing on its inter-corporate transfers is not evidence that Micron's overseas manufacturing and deliveries to customers constitute sales within the United States. IMS's only evidence about where the substantial parts of Micron's overseas sales are performed is the deposition testimony of Mr. Kilbuck, Micron's corporate designee, who said that Micron's U.S.-based employees would sometimes support foreign sales teams by

> setting up a customer meeting[,] asking when the customer might want to get samples of a new product, ask[ing] for forecast, price negotiations, [or] a whole host of road map discussions we wanted

> to have with the customer. They would facilitate lots of discussions that, I would have somebody local to do it.

(*Id.*, Ex. N at 111-12.)

Viewed in the light most favorable to IMS, Mr. Kilbuck's testimony might permit an inference that some of Micron's foreign sales were supported by contracting and pricing negotiations in the United States. That is insufficient under *Halo* to raise a genuine dispute about whether *any* particular overseas sale constituted a sale within the United States, much less *all* of them, as IMS's "least restrictive definition" assumes.

As IMS has made no other argument against granting Micron's request, I recommend that the Court grant partial summary judgment that IMS cannot obtain damages under its "least restrictive definition" of Micron's revenues.

G. Liability for Acts of Subsidiaries

Micron's sixth requested basis for summary judgment relates to its argument that it cannot be held liable for the infringing acts of its subsidiaries. Micron points out that IMS's damages calculations include sales made, not only by Micron Technology, Inc. (the named Defendant), but also by several of its non-party subsidiaries. Some of those non-party subsidiaries sell products overseas, and I have already recommended that IMS cannot recover damages for those sales. (*See* Section II.F.) However, Micron also has a U.S. subsidiary called Micron Semiconductor Products ("MSP"), and IMS's damages theory includes U.S. sales made by MSP as well as Defendant Micron. (Tr. 153:9-155:4.) Micron wants partial summary judgment that IMS cannot obtain damages for sales made by MSP. I recommend that Micron's request be denied.

The parties' briefing on this issue was sparse. IMS does not rely on an alter-ego theory, and the parties agree that Micron can only be liable for MSP's sales under an agency theory if

Micron "instigated" those sales. *StrikeForce Techs., Inc. v. PhoneFactor, Inc.*, No. 13-490-RGA-MPT, 2013 WL 6002850, at *5 (D. Del. Nov. 13, 2013), as amended (Nov. 14, 2013). IMS says that there is a genuine dispute of fact about whether Micron instigated MSP's sales, and it points to (1) an organizational chart showing that Micron has 100% ownership of its subsidiaries (D.I. 309, Ex. P), (2) evidence that MSP and Micron share a corporate address and have overlapping corporate officers, (3) a distribution agreement between Micron and MSP under which MSP is required to use its best efforts to promote, market, and distribute Micron's products and Micron is required to defend MSP against claims of patent infringement (*id.*, Ex. J), and (4) evidence that Micron in public statements refers to itself and its subsidiaries collectively as "we," and those statements suggest that Micron exercises control over the collective enterprise's manufacturing, marketing, and sales. (*See id.*, Ex. O "We manufacture our products at our worldwide, wholly-owned and joint venture facilities. . . . We market our products through our internal sales force, independent sales representatives, distributors, and e-tailers, primarily to original equipment manufacturers and retailers located around the world.").

I agree with IMS that the record contains evidence sufficient to create a triable issue of fact for the jury.[15] Accordingly, I recommend that the Court deny Micron's request for partial summary judgment.

[15] Micron points out that its distribution contract with MSP states that "[t]he relationship of [Micron] and [MSP] established by this Agreement is that of independent contractors, and neither party is an employee, agent, partner or joint venturer of the other by virtue of this Agreement." (*E.g.*, D.I. 309, Ex. J § 18(a).) That contract language does not conclusively demonstrate as a matter of law that MSP was not Micron's agent with respect to its U.S. sales.

III. ORDER ON MICRON'S DAUBERT MOTION

Finally, I turn to Micron's *Daubert* motion to exclude certain parts of IMS's expert witness testimony. Micron's motion will be granted.

IMS's damages expert, Dr. Putnam, performed a number of calculations to estimate the portion of Micron's profits attributable to the '063 patent. His method included subtracting from Micron's revenues certain production costs and "treat[ing] the remaining profit as having been produced by a relatively small number of 'differentiating' innovations" or "features." (D.I. 287, Ex. 1 ¶¶ 135-173.) He then performed an "analytical exercise" to estimate the share of that profit that should be attributed to the one-time programmable ("OTP") feature. (*Id.* ¶¶ 137-144.)

That analytical exercise included using a "log-normal distribution," which is an assumption about how much more valuable some assets—in this case patents—are than others. (*Id.* ¶ 186.) The theory has been reported in economic literature and it fits certain empirical data well. (*Id.* ¶¶ 140-141, 185-86.) It describes how to estimate the value of a patent by its rank in a distribution of patents ranked by value, but the theory does not tell us where a particular patent falls in the distribution. (*Id.*; D.I. 287, Ex. 7.) For example, it says that the most valuable 10% of patents are, on average, worth almost seven times as much as the average patent, but it does not say which patents are in the top 10%. (D.I. 287, Ex. 1 ¶ 141.)

To use that methodology to estimate the share of profits attributable to Micron's OTP feature, Dr. Putnam needed an estimate about where the OTP feature ranked in value among the features of the accused products. To obtain that estimate, Dr. Putnam relied on the opinion of Dr. Wolfe, IMS's technical expert. Dr. Wolfe considered a handful of factors and, without explaining any methodology, opined that the OTP functionality was "in approximately the top 10% of customer-exposed features in the Accused '063 products." (D.I. 287, Ex. 4 ¶ 280.)

Dr. Putnam then made his own estimate of how many product features are in the top 10% of Micron's features. He did that by reviewing a data sheet for a Micron product and making his own determination about how many features it identifies. (D.I. 287, Ex. 1 ¶ 142; D.I. 313 ¶ 17.) Notwithstanding his lack of engineering expertise, Dr. Putnam opined that there were approximately "two dozen" features listed on the data sheet, and he added a 50% fudge-factor to be "conservative," ultimately estimating that there were 35 features in the product's top 10% of features. (D.I. 287, Ex. 1 ¶¶ 142-43.) He then fit the OTP feature to the log-normal distribution and estimated a range of values for the OTP feature, depending on differing assumptions about where the OTP feature ranked in the top 10%. (*Id.* ¶¶ 144-151).

In his declaration attached to IMS's responsive brief, Dr. Putnam summarized how he calculated the value for the OTP feature using an assumption that it ranked at the bottom of the 35 features that he assumed constituted the top 10% of features:

> To estimate the value of the '063 patent, ranked at the bottom of the top 10% of Micron innovations, I employed a procedure I call "count, rank and divide" ([D.I. 287] Ex. A at ¶188-89): count the number of innovations in the relevant group; rank them; and divide the total value among them so that the parts add up to the whole. By counting the number of innovations in a group, I can compute the average profit per innovation; by ranking them, I can compute a profit multiplier for each innovation, relative to the group average; and by dividing the profits using that multiplier, I assign a share to each patent such that the parts add up to the value of the whole. Again, the count, rank and divide procedure has been approved in past cases, including in Delaware (Ex. A at ¶188 n.197 [citing *LG Display v. AU Optronics*, 722 F. Supp. 2d 466 (D. Del. 2010)]).

(D.I. 313 ¶ 16.)

I will assume for purposes of the argument only that the count, rank, and divide procedure is a reliable method for assessing the value of a feature claimed by a patent when that feature can reliably be placed in a "relevant group" and the number of other features in that group can reliably

be "count[ed]."[16] Micron nevertheless contends that Dr. Putnam's method for "counting" how many features are in the top 10% of features is unreliable. I agree. There is no question that Dr. Putnam is highly credentialed and has published papers in the field of patent valuation. But the admissibility test under *Daubert* is not a competition to present the most qualified expert to offer an opinion on the economic value of patents or features. It is an inquiry into whether the particular opinion offered was based on the reliable application of reliable methods. *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997); *Schneider*, 320 F.3d at 404-05. The main problems for IMS are that the record does not demonstrate that Dr. Putnam has the scientific expertise to make an estimate about how many technical features are described on the product data sheet, nor does the record demonstrate that he used a reliable methodology for counting the number of features. The record also fails to demonstrate that Dr. Putnam used a reliable methodology or relied on any facts or data to conclude that the features listed on the data sheet constitute the top 10% of features.[17]

Micron also takes issue with Dr. Wolfe's opinion that OTP is in the top 10% of customer-facing features, which Dr. Putnam relied on to conclude that OTP is therefore in the "relevant group" of the top 10% of features. I don't think I need to reach this issue since Dr. Wolfe's estimate

[16] Micron points out that the method of comparing the values of patents by ranking them is applied in economic literature to apportion value between patents, not to apportion value between the features of a product. Applying the method to features in order to calculate profits attributable to an asserted patent raises several questions, including but not limited to how to count how many features a product has and how to take into account the fact that a "feature" may not be coextensive with the asserted patent. IMS did not identify any case admitting expert testimony that applied this or a comparable method to apportion profits between different features of a product.

[17] Paragraph 9 of Dr. Putnam's opening report states, "According to Dr. Andrew Wolfe, IMS's technical expert, Micron would advertise the top approximately 10% of its features among its NAND flash devices." (D.I. 287, Ex. 1 ¶ 9.) Dr. Wolfe's expert report does not say that.

does not appear to have any independent significance aside from its use in Dr. Putnam's calculations. But I agree with Micron. The record does not demonstrate that either expert used a discernable method to conclude that the OTP feature was among the top 10% of all relevant features.

To his credit, Dr. Putnam points out that the numbers he used for his calculations are only estimates, and that "there is no bright-line empirical test by which to define the exact number of differentiating features or to separate 'ordinary' from 'extra-ordinary' innovations." (D.I. 287, Ex. 1 ¶ 142.) The mere fact that there is no definitive empirical method of calculating the value of the '063 patent is not a reason to permit testimony on a mathematical calculation that uses inputs obtained from unreliable methods. Numbers have power—they sound authoritative and tend to mask unreliable estimates and assumptions.

Courts have previously excluded opinions about apportioning value between patents because they assumed without explanation that all patents were equally valuable. *See, e.g.*, *Stragent, LLC v. Intel Corp.*, No. 11-421, 2014 WL 1389304, at *4 (E.D. Tex. Mar. 6, 2014) (Dyk, J.). IMS distinguishes those cases because, here, Dr. Putnam had a very sound explanation of why a log-normal distribution is a good model for the relative value of patents. I take IMS's point, but I think Dr. Putnam's method requires even greater scrutiny to ensure that it is not misapplied. Unlike the expert in *Stragent*, Dr. Putnam here is claiming that the OTP feature covered by the '063 patent is unusually valuable: two to seven times more valuable than the product's other features. (D.I. 287, Ex. 1 ¶ 141.) That claim requires evidence and reliable methods both for ranking it in the top 10% and for counting other features in the top 10%. IMS's experts offer neither.

IMS cites cases where courts in this district have allowed similar testimony. In *LG Display Co. v. AU Optronics Corp.*, a court in this district allowed Dr. Putnam to testify at a bench trial about his opinion that, if the asserted patents were among the most valuable 5%, the total damages were $7.8 million. 722 F. Supp. 2d 466, 472-74 (D. Del. 2010); 265 F.R.D. 189, 195 (D. Del. 2010) ("[T]he gatekeeping obligation provided for in *Daubert* is less pressing in the context of a bench trial."). But that was a bench trial, not a jury trial. And the Court ultimately found that a different method of calculating damages was more appropriate and awarded only $305,399. 722 F. Supp. 2d at 474. Similarly, in *Sprint Comms. Co. v. Charter Comms., Inc.*, No. 17-1734-RGA, 2021 WL 982729, at *5-6 (D. Del. Mar. 16, 2021), a defense expert was allowed to testify that even if plaintiff's patents were each among the top 1% of Voice over Internet Protocol (VoIP) patents, they would only be worth 12% of the overall value of VoIP. That case merely shows that it can be appropriate for an expert to assume patents are the most valuable when calculating an upper bound for damages. Dr. Putnam is not offering such an opinion here. Contrary to IMS's suggestion, the cited cases do not stand for the proposition that calculations based on arbitrary top percentage rankings are admissible in a jury trial.

Micron raises a number of other arguments in support of excluding Dr. Putnam's damages testimony, which I do not need to address in light of my conclusions above. The testimony of Dr. Putnam and Dr. Wolfe will be excluded to the extent that they opine or rely on a top 10% ranking for the '063 patent or OTP feature and/or a calculation about how many features are in the top 10% of features.

IV. CONCLUSION

I have carefully considered the remaining arguments and cases cited by the parties and have determined that they do not warrant further discussion in light of the conclusions set forth above.

For the reasons stated, I RECOMMEND as follows:

1. IMS's motion for partial summary judgment (D.I. 291) should be GRANTED; and

2. Micron's motion for summary judgment (D.I. 288) should be GRANTED-IN-PART and DENIED-IN-PART:

   a. Micron's request for partial summary judgment that the asserted claims of the '063 patent are invalid under 35 U.S.C. § 101 should be denied;

   b. Micron's request for partial summary judgment of non-infringement or, in the alternative, of invalidity of the asserted claims of the '063 patent under 35 U.S.C. §§ 102 and 103 should be denied;

   c. Micron's request for partial summary judgment that the asserted claims of the '498 patent are not infringed should be denied;

   d. Micron's request for partial summary judgment that IMS cannot obtain pre-suit damages for infringement of the '498 patent should be granted;

   e. Micron's request for partial summary judgment that IMS cannot obtain damages under its "least restrictive definition" of Micron's revenues should be granted; and

   f. Micron's request for partial summary judgment that it cannot be held liable for the infringing acts of its subsidiaries should be denied.

Further, for the reasons stated, I ORDER as follows: Micron's motion to exclude (D.I. 285) is GRANTED. The testimony of Dr. Putnam and Dr. Wolfe will be excluded to the extent that they opine or rely on a top 10% ranking for the '063 patent or OTP feature and/or a calculation about how many features are in the top 10% of features.

The parties are directed to the Court's "Standing Order for Objections Filed Under Fed. R. Civ. P. 72," dated March 7, 2022, a copy of which can be found on the Court's website.

Dated: September 29, 2022

THE HONORABLE JENNIFER L. HALL
UNITED STATES MAGISTRATE JUDGE