(*Counsel listed on signature page*)

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN FRANCISCO DIVISION

TECHNOLOGY PROPERTIES LIMITED LLC, et al., Plaintiffs, v. HUAWEI TECHNOLOGIES CO., LTD., et al., Defendants.	Case No. 3:12-cv-03865-VC (PSG) **DEFENDANTS' RESPONSE TO PLAINTIFFS' MOTION FOR DE NOVO DETERMINATION OF DISPOSITIVE MATTER REFERRED TO MAGISTRATE JUDGE, OR, IN THE ALTERNATIVE, MOTION FOR RELIEF FROM NONDISPOSITIVE PRETRIAL ORDER OF MAGISTRATE JUDGE** DATE: November 19, 2015 TIME: 10:00 AM PLACE: Courtroom 4 JUDGE: Hon. Vince Chhabria
TECHNOLOGY PROPERTIES LIMITED LLC, et al., Plaintiffs v. ZTE CORPORATION, et al., Defendants.	Case No. 3:12-cv-03876-VC (PSG)

TECHNOLOGY PROPERTIES LIMITED LLC, et al. Plaintiffs v. SAMSUNG ELECTRONICS CO., LTD., et al., Defendants.	Case No. 3:12-cv-03877-VC (PSG)
TECHNOLOGY PROPERTIES LIMITED LLC, et al., Plaintiffs v. LG ELECTRONICS, INC., et al., Defendants.	Case No. 3:12-cv-03880-VC (PSG)
TECHNOLOGY PROPERTIES LIMITED LLC, et al., Plaintiffs v. NINTENDO CO., LTD, et al. Defendants.	Case No. 3:12-cv-03881-VC (PSG)

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I. INTRODUCTION

Judge Grewal's recommended construction of the "entire oscillator" limitation is correct and should be adopted by the Court without modification because it accurately reflects two clear and unambiguous disclaimers made by the applicants for the '336 patent during prosecution. First, to overcome rejections based on the Magar prior art reference, the applicants repeatedly distinguished their claimed "entire oscillator" from Magar's oscillator on the basis that the frequency of Magar's oscillator was fixed by an external crystal. As a result, Judge Grewal correctly construed "entire oscillator" to mean, in part, "an oscillator . . . whose frequency is not fixed by an external crystal." September 22, 2015, Claim Construction Report and Recommendation ("R&R"), Dkt. 104, at 2, 4-5, 10.[1] Second, to overcome a rejection based on the Sheets prior art reference, the applicants repeatedly distinguished their claimed "entire oscillator" from Sheets on the basis that the Sheets system required control signals. Thus, Judge Grewal also correctly construed "entire oscillator" to mean, in part, "an oscillator . . . that does not require a control signal." R&R at 2, 5-6, 11.

Accordingly, Judge Grewal's recommended construction is correct and should be adopted by the Court.

II. OVERVIEW OF U.S. PATENT NO. 5,809,336

U.S. Patent No. 5,809,336 (the "'336 patent") is directed to a variable-speed clock (the "entire oscillator") that controls the speed of a CPU and that is incorporated on the same integrated circuit substrate as the CPU. Ex. A ('336 patent) at cover & 16:54-17:10.[2] The variable-speed oscillator adjusts its frequency in real time based upon the microprocessor's physical and environmental characteristics, including temperature, voltage and semiconductor manufacturing process quality, to track the then-existing processing capabilities of the CPU. *Id.*

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[1] Unless otherwise indicated, all docket numbers cited in this brief refer to *Technology Properties Ltd., et al. v. Samsung Electronics Co., Ltd. et al.*, Case No. 12-cv-03877-VC (PSG).

[2] All exhibits cited in this brief are attached to the accompanying Declaration of Aaron Wainscoat in Support of Defendants' Response to Plaintiffs' Motion for *De Novo* Determination.

at 16:54-17:10; R&R at 3-4. In other words, the on-chip oscillator's frequency varies together with the frequency capability of the CPU. *Id.*

The '336 patent issued as a divisional patent from a specification that describes several different purported inventions. Ex. A at cover ("Division of Ser. No. 389,334, Aug. 3, 1989, Pat. No. 5,440,749"); R&R at 3. As a result, the '336 patent's "Summary of the Invention" section contains material that is largely irrelevant to the asserted claims, with only lines 27 through 35 of column 3 pertaining to the alleged invention. Ex. A at 3:27-35. Similarly, the "Detailed Description of The Invention" includes much extraneous material, with the only parts describing the '336 patent's purported invention being found in the last 25 lines of column 16 and the first 37 lines of column 17, under the sub-headings "Optimal CPU Clock Scheme" and "Asynchronous/Synchronous CPU." *Id.* at 16:43-17:37; R&R at 3.

In the parts of the specification that are relevant to the alleged invention claimed in the '336 patent, the specification explains that a high speed microprocessor must "operate over wide temperature ranges, wide voltage swings, and wide variations in semiconductor processing" that "all affect transistor gate propagation delays." Ex. A at 16:44-48; R&R at 4. These three parameters, "processing," "voltage" and "temperature," are referred to as "PVT" parameters.

As the specification explains, traditional prior art microprocessor systems are designed with a single fixed speed clock for all parts of the system. Ex. A at 16:48-50, 17:12-13; R&R at 3. By design, this conventional fixed speed clock (which includes an off-chip crystal and on-chip components) always operates at a speed that is slow enough to ensure error-free operation during those times when worst case PVT parameter conditions may exist. *Id.* As a result, the traditional prior art microprocessor systems "must be clocked a factor of two slower than their maximum theoretical performance, so they will operate properly in worse [sic] case conditions" to ensure that a user always experiences error-free operation. Ex. A at 16:48-53.

To avoid the constrained speed of the prior art and to always operate at or near its maximum performance capabilities for the existing PVT parameter conditions, the '336 patent replaces the prior art's external fixed-speed crystal clock which controls the CPU's speed with an on-chip "ring counter variable speed system clock" (also referred to as a "ring oscillator variable

speed system clock") that adjusts its speed in real time as a function of existing PVT parameters to match the CPU's maximum frequency capability under those parameters. Ex. A at 3:26-34, 16:54-17:10, 17:19-22; R&R at 3-4. In other words, the oscillator's frequency varies together with the frequency of the CPU. Ex. A at 3:26-34, 16:60-17:2.

Unlike a fixed clock's speed, the frequency of the claimed internal variable speed oscillator varies significantly as a function of PVT parameters. Ex. A at 16:59-60 ("The ring oscillator frequency is determined by the parameters of temperature, voltage, and process"). For example, the '336 patent's specification discloses that the speed of the variable speed clock will be 100 megahertz at room temperature, but will slow to 50 megahertz if the temperature rises to 70°C (*i.e.*, 158° F). *Id.* at 16:59-63. The oscillator's speed may vary, according to the patent, by as much as a factor of four (*i.e.*, by as much as 400%) depending on all three PVT parameters. *Id.* at 17:21-22.

According to the '336 patent, the "optimum performance" of the variable speed oscillator supposedly results from fabricating and locating the variable speed oscillator on the same semiconductor substrate as the CPU, so that the same PVT parameters affect both the oscillator and the CPU. Ex. A at 16:57-58, 16:63-17:10. For example, if the temperature of the substrate rises, then the processing speed capability of the CPU decreases. But because the oscillator and CPU are fabricated on the same substrate, this rise in temperature also causes the speed of the variable speed oscillator to decrease, so that the oscillator leads the CPU to a slower maximum speed at which it can operate properly. *Id.* As the specification explains, this ensures that the CPU "will always execute at the maximum frequency possible, but never too fast." *Id.* at 16:67-17:2.

Because certain devices which communicate with the CPU cannot tolerate a variable speed clock, the system requires a second clock that is independent of the variable speed oscillator. Ex. A at 17:22-34; R&R at 4. The independent second clock is connected to the input/output (I/O) interface, as illustrated in Figure 17 of the '336 patent, with the second clock on Figure 17 being a conventional "crystal clock" 434:

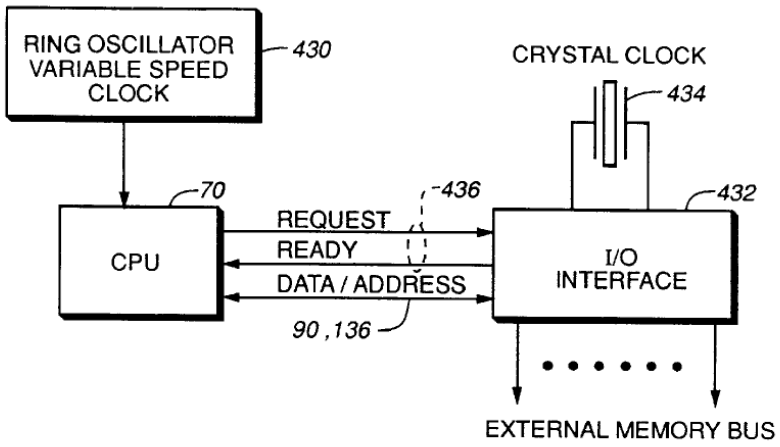

FIG._17

Each independent claim of the '336 patent (including asserted claims 6 and 13) provides for a fixed-speed, independent second clock that is connected to an input/output ("I/O") interface. Ex. A at 17:14-34. The frequency of the second clock is fixed to allow the I/O interface to interact with off-chip memory and other off-chip components, and to perform operations that require a fixed frequency, such as "video display updating and disc drive reading and writing." *Id.* at 17:14-34. By connecting the variable speed oscillator to the CPU while separately connecting the independent fixed speed clock to the I/O interface, the variable speed CPU is decoupled from the fixed speed I/O interface. *Id.* at 17:32-34. This configuration optimizes the performance of the system by allowing the CPU to run as fast as possible under the current PVT conditions while maintaining the I/O interface 432 at a stable fixed speed. *Id.* at 17:32-34.

III. APPLICABLE LAW

A. Claim Construction

When construing claim terms, the Federal Circuit emphasizes the importance of intrinsic evidence such as the language of the claims themselves, the specification, and the prosecution history. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-17 (Fed. Cir. 2005) (*en banc*). Claim terms "are generally given their ordinary and customary meanings as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history." *Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). There are

two circumstances where a claim is not entitled to its plain and ordinary meaning: "1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution." *Id*. Courts may also consider "extrinsic evidence," which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." *Phillips*, 415 F.3d at 1317 (quotation and citation omitted). However, such evidence is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Id*. (quotation and citation omitted).

Of particular importance here, the scope of a claim term must be limited if the applicant argued during prosecution that the claim has a limited scope in order to obtain the patent from the PTO. *Southwall Techs., Inc., v. Cardinal IG Co*., 54 F.3d 1570, 1576 (Fed. Cir. 1995) ("Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers."); *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1289 (Fed. Cir. 2009) (*en banc*) ("'the prosecution history can often inform the meaning of the claim language by demonstrating . . . whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.'") (quoting *Phillips*, 415 F.3d at 1317).

While a prosecution history disclaimer must be "clear and unambiguous," the Federal Circuit recognizes that "applicants rarely submit affirmative disclaimers along the lines of 'I hereby disclaim the following…' during prosecution." *Saffran v. Johnson & Johnson*, 712 F.3d 549, 559 (Fed. Cir. 2013). Thus, "[e]xplicit arguments made during prosecution to overcome prior art can lead to a narrow claim interpretation because '[t]he public has a right to rely on such definitive statements made during prosecution.'" *Rheox, Inc. v. Entact, Inc*., 276 F.3d 1319, 1325 (Fed. Cir. 2002) (quoting *Digital Biometrics, Inc. v. Identix, Inc*., 149 F.3d 1335, 1347 (Fed. Cir. 1998)); *see also Saffran*, 712 F.3d at 559 (holding that explicit statements distinguishing prior art during prosecution constitute a disclaimer of claim scope); *Am. Piledriving Equipment, Inc. v. Geoquip, Inc.*, 637 F.3d 1324, 1336 (Fed. Cir. 2011) (holding that the applicants' arguments distinguishing prior art during prosecution constituted a disavowal of claim scope even though the applicant distinguished the prior art on other grounds as well).

In short, "[t]he patentee is held to what he declares during the prosecution of his patent." *Gillespie v. Dywidag Systs. Int'l, USA*, 501 F.3d 1285, 1291 (Fed. Cir. 2007) (reversing district court's construction and determination of literal infringement because patentee's "construction was negated during prosecution."); *Computer Docking Station Corp. v. Dell, Inc*., 519 F.3d 1366, 1379 (Fed. Cir. 2008) (holding that "the sum of the patentees' statements during prosecution would lead a competitor to believe that the patentee had disavowed" devices otherwise covered by the claim language). Thus, if an inventor defines a term or otherwise disclaims a meaning during prosecution, the inventor has acted as his own lexicographer and the term is limited to the scope of the definition or disclaimer. *Schoenhaus v. Genesco, Inc*., 440 F.3d 1354, 1358-60 (Fed. Cir. 2006) (lexicography in file history by virtue of disclaimer of scope of claim term during prosecution).

B. Standard of Review

Pursuant to 28 U.S.C. § 636(b)(1)(B) and Federal Rule of Civil Procedure 72(b), a pretrial matter that is dispositive of a claim or defense may be assigned to a magistrate judge for a recommended disposition. If a party timely files specific written objections to the magistrate's proposed findings and recommendations, a district court judge "shall make a *de novo* determination of those portions of the report or specified proposed findings or recommendations to which objection is made." 28 U.S.C. § 636(b)(1)(C); *see also* Fed. R. Civ. P. 72(b)(3). In the matter before the Court, Plaintiffs' motion purports to object to the R&R as a dispositive pretrial matter pursuant to FRCP 72(b), and seeks *de novo* review of the R&R. Defendants understand the Court agrees the R&R is subject to FRCP 72(b).

Regardless of the standard of review employed, the reasons herein confirm that Judge Grewal's claim construction is correct.

IV. ARGUMENT

Judge Grewal construed "entire oscillator" to mean "an [oscillator] located entirely on the same semiconductor substrate as the [central processing unit] that does not require a control signal and whose frequency is not fixed by any external crystal." R&R at 1. This construction is correct because it accurately captures, as it must, the clear and unambiguous prosecution history

disclaimers made by the applicants in order to gain allowance of the '336 patent.

A. The Applicants Disclaimed Oscillators Whose Frequency Is Fixed By An External Crystal.

As Judge Grewal properly concluded, the applicants for the '336 patent clearly and unambiguously disclaimed oscillators whose frequency is fixed by an external crystal. Specifically, faced with repeated rejections of their patent claims by the examiner in the face of the prior art Magar patent (Ex. B, U.S. Patent No. 4,503, 500, "Magar"), the applicants again and again distinguished Magar by arguing that, unlike their claimed invention, Magar used an external crystal to fix the frequency of the oscillator. These repeated, clear arguments constitute clear disclaimers that must be reflected in the proper construction of the "entire oscillator" limitation. R&R at 4-5, 10.

1. Judge Grewal Correctly Concluded That The Applicants' Arguments Distinguishing Magar Constitute Disclaimers.

Every court that has addressed this issue has found that there was a disclaimer of claim scope by the applicants in their efforts to distinguish the Magar reference.[3] Plaintiffs nevertheless assert, as their initial argument, that there was no disclaimer whatsoever. Plaintiffs' Motion for *De Novo* Determination, Dkt. 107 ("Mot.") at 1, 7, 9. Plaintiffs are incorrect.

The examiner's first rejection over Magar noted that Magar disclosed a "clock generator" that is located on the same substrate as the central processing unit as shown in Figure 2a of Magar, reproduced below (annotations added):

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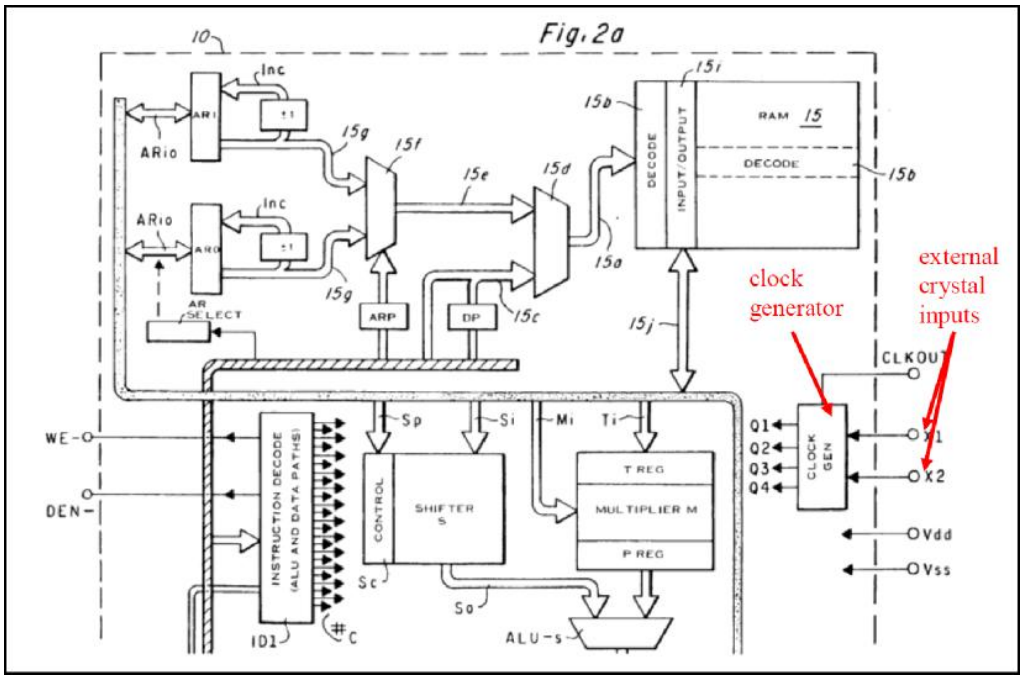
[3] R&R at 7; Ex. L (*Technology Properties Ltd. v. Matsushita Electric Industrial Co., Ltd.*, U.S.D.C., E.D. Tex., Civ. Action No. 2:05-CV-494 (TJW) (the "Texas Action"), Dkt. No. 259, June 15, 2007, Memorandum and Order) at 12 (finding disclaimer); Ex. M (*Certain Wireless Consumer Electronics Devices and Components Thereof*, Inv. No. 337-TA-853 (the "ITC Action"), April 18, 2013, Order No. 31) at 38-40 (finding disclaimer); Ex. N (ITC Action, March 21, 2014, Commission Opinion) at 24 (finding disclaimer); Ex. O (*HTC Corporation v. Technology Properties Ltd.*, U.S.D.C., N.D. Cal., Case No.: 5:08-cv-00882-PSG (the "HTC Action"), Dkt. No. 585, September 17, 2013, Order) at 11 and n.24.



Ex. C (April 3, 1997 Rejection) at 2 (TPL853_0002434). In response, applicants distinguished Magar by asserting that an external, fixed-frequency crystal controlled the frequency of the Magar clock:

> A review of the Magar reference shows that it is apparently no more pertinent than prior art acknowledged in the application, in that ***the clock disclosed in the Magar reference is in fact driven by a fixed frequency crystal, which is external to the Magar integrated circuit.***

Ex. D (July 7, 1997, Amend.) at 2 (TPL853_0002426).[4] In the same amendment, applicants emphasized that their claimed on-chip variable speed clock differs from the Magar clock because the Magar clock was "frequency controlled" by a "fixed frequency" external crystal that did not permit variations in oscillation speed due to PVT parameters, whereas the speed of the claimed variable speed clock varied with PVT parameters:

[4] Unless otherwise indicated, all emphasis in this brief is added by Defendants.

> Contrary to the Examiner's assertion in the rejection that 'one of ordinary skill in the art should readily recognize that the speed of the cpu and the clock vary together due to manufacturing variation, operating voltage and temperature of the IC [integrated circuit],' one of ordinary skill in the art should readily recognize that the speed of the CPU and clock ***do not*** vary together due to manufacturing variation, operating voltage, and temperature of the IC in the Magar processor . . . ***This is simply because the Magar microprocessor clock is frequency controlled by a crystal which is also external to the microprocessor.*** *Crystals are* ***by design fixed frequency devices*** *whose oscillation speed is designed to be tightly controlled and to vary minimally due to variations in manufacturing, operating voltage and temperature.* ***The Magar microprocessor in no way contemplates a variable speed clock as claimed.***

Id. at 3-4 (TPL853_00002427-28) (first emphasis in original). By stating that the Magar microprocessor "in no way contemplates a variable speed clock as claimed" because the Magar clock is frequency controlled by an external fixed frequency crystal, the applicants clearly disclaimed, as Judge Grewal's construction states, a clock "whose frequency is fixed by an external crystal." R&R at 4, 10.

Although the above two statements themselves require a finding of disclaimer, the applicants did not end there. The applicants then told the examiner, in the same amendment, that even if the crystal that fixed the frequency of the Magar oscillator were located entirely on the same chip as the CPU, Magar ***still*** would not practice the claimed invention because the Magar clock could not vary with PVT parameters:

> ***[C]rystal oscillators have never***, to Applicants' knowledge, ***been fabricated on a single silicon substrate with a CPU***, for instance. ***Even if they were***, as previously mentioned, crystals ***are by design fixed-frequency devices*** whose oscillation frequency is designed to be tightly controlled and to vary minimally due to variations in manufacturing, operating voltage and temperature. ***The oscillation frequency of a crystal*** on the same substrate with the microprocessor ***would inherently not vary*** due to variations in manufacturing, operating voltage and temperature in the same way as the frequency capability of the microprocessor on the same underlying substrate***, as claimed.***

Ex. D (July 7, 1997 Amend.) at 4 (TPL853_00002428); R&R 4-5. This express disclaimer could not be clearer: the claims exclude oscillators using crystals that fix the frequency of the clock.

The PTO was not convinced by the applicants' arguments and issued a second rejection based on Magar. In response, the applicants amended their claims to explicitly require that the

"entire oscillator" be on the same integrated circuit substrate as the CPU. Ex. E (Feb. 10, 1998 Amend.) at 1-2 (TPL853_02954557-58).[5] Along with this amendment, the applicants again distinguished Magar, stating that the ***"essential difference***" between the claimed "entire oscillator" and the Magar oscillator is that the frequency of Magar's clock signals was determined (*i.e.*, fixed) by an external crystal:

> The ***essential difference*** is that the ***frequency or rate of the*** . . . ***signals*** [in the claimed invention] ***is determined by the processing and/or operating parameters of the integrated circuit*** containing the Fig. 18 circuit, ***while the frequency or rate of the*** . . . ***signals depicted in Magar Fig. 2a are determined by the fixed frequency of the external crystal*** . . . shown in Magar Fig. 2a.

Id. at 4 (TPL853_02954560). Again, this disclaimer could not have been clearer: the "essential difference" between Magar's oscillator and the claimed "entire oscillator" is that the frequency of Magar's oscillator is "determined by the fixed frequency of the external crystal," whereas the frequency of the claimed entire oscillator varies with PVT parameters. R&R at 5, 10.

Later in the same amendment, the applicants continued to distinguish Magar from their claimed invention on the ground that the frequency of the Magar oscillator was fixed by an external crystal, and made an additional disclaimer, *i.e.*, that their invention differed from Magar because the Magar oscillator also relied on the external crystal to oscillate:

> Magar's clock generator ***relies on an external crystal*** connected to terminals X1 and X2 ***to oscillate***, as is conventional in microprocessor designs. It is not an entire oscillator in itself. And with the crystal, ***the clock rate generated is also conventional in that it is a fixed, not a variable, frequency***. The Magar clock is comparable in operation to the conventional crystal clock 434 depicted in Fig. 17 of the present application for controlling the I/O interface ***at a fixed rate frequency, and not at all like the clock on which the claims are based***, as has been previously stated.

Id. at 3 (TPL853_02954559); R&R at 5 (finding that "[t]he applicants also disclaimed the use of

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[5] For example, prosecution claim 73, which ultimately issued as claim 6, was amended to recite "an entire oscillator disposed upon said integrated circuit substrate." Ex. E (Feb. 10, 1998 Amend.) at 1-2 (TPL853_02954557-558) (underlined text indicating addition through amendment).

an external crystal to cause clock signal oscillation").

The statement that Magar's clock is conventional in that its rate (*i.e.*, frequency) is fixed by the external crystal, and thus "not at all like the clock on which the claims are based," is yet another disclaimer of clocks whose frequencies are fixed by external crystals. That the applicants also disclaimed reliance on an external crystal "to oscillate" does not negate the effect of the applicants' repeated disclaimer of oscillators whose frequencies are fixed by external crystals because, as Judge Grewal correctly stated, a correct claim construction must reflect all disclaimers made during prosecution, not just some of them. R&R at 11 and n.43 (citing *Krippelz v. Ford Motor Co.*, 667 F.3d 1261, 1267 (Fed. Cir. 2012), *Am. Piledriving*, 637 F.3d at 1336, and *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 979 (Fed. Cir. 1999)); *see also Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1374 (Fed. Cir. 2007).

Confirming, again, that they were disclaiming claim scope, the applicants concluded their arguments about Magar by "specifically distinguish[ing]" the claimed entire oscillator from Magar on the same two bases: (1) the frequency of the Magar oscillator was fixed by the crystal; and (2) the Magar oscillator required the crystal to oscillate:

> The Magar teaching . . . is specifically distinguished from the instant case in that it is both ***fixed frequency*** (*being crystal based*) and *requires an external crystal or external frequency generator*.

Ex. E (Feb. 10, 1998 Amend.) at 5 (TPL853_02954561).

The applicants' disclaimers regarding Magar were clear: they repeatedly told the examiner the claimed "entire oscillator" does not include oscillators whose frequencies are fixed by an external crystal (as well as that the claimed oscillator does not require an external crystal to oscillate). As established above, longstanding Federal Circuit precedent requires that the applicants' disclaimers be reflected in the Court's claim construction. Judge Grewal was thus correct in concluding that there was a disclaimer and, in particular, that the "applicants surrendered any oscillator that like Magar's is fixed by an off-chip crystal." R&R at 2, 10-11. Judge Grewal was therefore also correct in construing "entire oscillator" to mean, in part, "an oscillator . . . whose frequency is not fixed by an external crystal." *Id*. at 2.

2. Plaintiffs' Criticisms Of Judge Grewal's Construction Lack Merit.

Plaintiffs' criticisms of Judge Grewal's construction are flawed throughout. First, Plaintiffs incorrectly re-cast Judge Grewal's construction and then challenge the incorrectly characterized construction. In particular, Plaintiffs argue that the statements made by applicants in their July 7, 1997 amendment do "not support Judge Grewal's construction that the 'entire oscillator' is not 'fixed by any off-chip ***oscillator***' . . ." Mot. at 9. However, that is not Judge Grewal's construction; rather, consistent with the applicants' actual disclaimers, Judge Grewal's construction excludes oscillators whose frequency is "fixed by any external ***crystal***." R&R at 2. Thus, Plaintiffs' arguments regarding whether Magar included an "off-chip oscillator" are misplaced. *See* Mot. at 9 ("there is no mention of an off-chip oscillator"), 10 ("controlled by the off-chip oscillator"), 10 ("but say nothing of an off-chip oscillator fixing the frequency").

Second, Plaintiffs' criticisms of Judge Grewal's construction are largely premised upon their ***current*** characterization of the design of Magar. Mot. at 8-10. This line of criticism is fundamentally flawed, both factually and legally. As an initial matter, Plaintiffs' arguments are premised upon their litigation counsel's assertion that Magar had no on-chip oscillator and that the clock signal in Magar was generated by the off-chip crystal. *Id*. at 8. However, as established above, the examiner cited the ***on-chip*** "clock generator" shown in Fig. 2a of Magar in his claim rejection. *See* Ex. C (April 3, 1997 Rejection) at 2 (TPL853_0002434). Plaintiffs' counsel's current argument that Magar had no on-chip oscillator is just that – attorney argument.

Moreover, controlling Federal Circuit precedent precludes arguments, like Plaintiffs' current arguments, where the patentee attempts to avoid a finding of disclaimer by arguing, in the infringement litigation, about what the prior art does and does not disclose. Rather, the disclaimers must be measured by what the applicants ***actually said*** during prosecution, ***not what they arguably could have said*** instead. *North Am. Container Inc. v. Plastipak Packaging Inc.*, 415 F.3d 1335 (Fed. Cir. 2005).

In *North Am. Container*, the claim term at issue was "wherein said inner wall portions are generally convex." *Id*. at 1341. The applicants in that case made the following argument to the examiner during prosecution to overcome two prior art patents, Jakobsen and Dechenne:

> The shape of the base as now defined in the claims differs from those of both the Dechenne patent, wherein the corresponding wall portions 3 are *slightly concave* . . . and the Jakobsen patent, wherein the entire re-entrant portion is clearly *concave in its entirety*. This is also generally true of all of the prior art known to the applicant and/or referred to by the examiner.

Id. at 1340. A special master in subsequent district court litigation determined that the plain meaning of the "generally convex" limitation was broad enough to include walls with some straight and some concave points, so long as the majority of points were convex. However, notwithstanding that determination, the special master further concluded that the correct construction of "generally convex" required an additional negative limitation due to the above-stated argument made by the applicants during prosecution: the wall must have "***no concave points***." *Id*. at 1342-43 (emphasis added). In affirming this construction, the Federal Circuit rejected the argument that the scope of the disclaimer was limited to walls that were entirely concave and therefore could encompass walls with some concave points:

> We are not persuaded by NAC's argument that the applicant intended only to distinguish his invention from the prior art on the basis that the inner walls in the prior art bottles are entirely concave. ***Although the inner walls disclosed in the Dechenne and Jakobsen patents may be viewed as entirely concave, that is not what the applicant argued during prosecution to gain allowance for his claims.*** The applicant stressed the difference in the extent of the concavity between the Dechenne and Jakobsen patents, noting that Dechenne is "slightly concave," whereas Jakobsen is "clearly concave in its entirety." Such a distinction would have been unnecessary if the only point that the applicant intended to make was that both prior art patents disclosed inner walls that are entirely concave.

Id. at 1345-46.

Thus, the Federal Circuit made clear in *North Am. Container* that the scope of the disclaimer is measured by the words used by the patentee, and can be broader than what is necessary to overcome the prior art. This holding was and remains in accord with well-established Federal Circuit precedent. *See, e.g.*, *Atofina v. Great Lakes Corp.*, 441 F.3d 991, 998 (Fed. Cir. 2006) ("[t]hat the applicants only needed to surrender nickel-chromium catalysts to avoid a prior art reference does not mean that its disclaimer was limited to that subject matter"); *Marctec LLC v. Johnson & Johnson*, 394 Fed. App'x 685, 687 (Fed. Cir. 2010) ("[l]imitations clearly adopted by the applicant during prosecution are not subject to negation during litigation, on the argument that the limitations were not really needed in order to overcome the reference");

Saffran, 712 F.3d at 559 (holding that arguments made to distinguish prior art "preformed chamber" constitute a disclaimer of not only the prior art "preformed chamber" but also a broader disclaimer of anything other than a "sheet.").[6]

As established above in detail, the applicants for the '336 patent repeatedly argued that their claimed "entire oscillator" was different from Magar's oscillator because the frequency of the Magar clock was fixed by an external crystal. *See, e.g.*, Ex. D (July 7, 1997 Amend.) at 2-4 (TPL853_00002426-28) ("the clock disclosed in the Magar reference is in fact driven by a fixed frequency crystal, which is external to the Magar integrated circuit"; "the Magar processor clock is frequency controlled by a crystal which is also external to the microprocessor"; Ex. E (Feb. 10, 1998 Amend.) at 3-5 (TPL853_02954559-61) ("the essential difference is that . . . the frequency or rate of [the clock] signals depicted in Magar Fig. 2a are determined by the fixed frequency of the external crystal"; "[a]nd with the crystal, the clock rate generated is also conventional in that it is a fixed, not variable, frequency"; "[t]he Magar teaching . . . is specifically distinguished from the instant case in that it is . . . fixed frequency (being crystal based)"). The scope of the applicants' disclaimer must be measured – as Judge Grewal correctly did – by these statements, and not by the characterization of the prior art that Plaintiffs are now making in this litigation.

3. Plaintiffs' Proposed Alternative Construction Is Both Incorrect And Invites Confusion And Further Argument.

Perhaps recognizing the error of their "no disclaimer" position, Plaintiffs close their argument regarding Magar by stating: "Finally, if any disclaimer with respect to Magar is appropriate, it is one that prohibits a clock signal being *generated* from an off- chip oscillator." Mot. at 11 (emphasis in original); *see also id.* at 10 ("Applicants' statements could support a construction that the clock signal provided to the CPU does not originate from or is not generated by an external oscillator"). This alternative construction – which Plaintiffs are now proposing for

[6] *See also* R&R at 9 (quoting *Norian Corp. v. Stryker Corp.*, 432 F.3d 1356, 1361 (Fed. Cir. 2005) for the proposition that "[t]here is no principle of patent law that the scope of surrender of subject matter made during prosecution is limited to what is absolutely necessary to avoid a prior art reference that was the basis for an examiner's rejection.").

this first time in this (or any other) litigation – must be rejected because it fails to fully and accurately capture the applicants' prosecution history disclaimers, which, as established above, is contrary to well-established Federal Circuit precedent. The construction also should be rejected because prior litigation over this patent has shown that the word "generate" is unclear, is likely to cause jury confusion, and invites continued argument over its meaning and scope.

First, Plaintiffs' substitution of "off-chip oscillator" in their proposed construction for "off-chip crystal" improperly narrows the scope of the prosecution history arguments made by the applicants. As established above, each of the above-cited disclaimers refers to an external *crystal*, not an external *oscillator*. The construction should therefore be phrased in terms of an "external crystal" as those were the words used by the applicants. *North Am. Container*, 415 F.3d at 1345-46; *Atofina*, 441 F.3d at 998; *Marctec*, 394 Fed. App'x at 687; *Saffran*, 712 F.3d at 559.

Second, the term "generated" should not be used in place of "fixed." As shown above, the term "fixed" is used throughout the disclaimers (in the phrases "fixed frequency" and "fixed rate frequency"), and the disclaimers also use the comparable words "controlled" (in the phrase "controlled frequency") and "determined" (in the phrase "the frequency or rate of the [clock] signals . . . are determined"). Each of these terms reflects the applicants' disclaimer of frequency rate control by the external crystal, which is the essence of the applicants' main disclaimer in Magar. The "generation" of the clock signal does not as directly reflect this disclaimer as does the term "fixed," and Plaintiffs do not tie their proposed use of the term "generated" to the actual words of applicants' disclaimers.

Moreover, the word "generated" more closely aligns with the applicants' further disclaimer that "Magar's clock generator relies on an external crystal . . . to oscillate." Ex. E (Feb. 10, 1998 Amend.) at 3 (TPL853_02954559). As established above, this disclaimer is in addition to the applicants' more specific fixed frequency disclaimer. While Judge Grewal recognized this additional disclaimer in the body of his report and recommendation ("The applicants also disclaimed the use of an external crystal to cause clock signal oscillation"), this disclaimer is not expressly reflected in Judge Grewal's construction. It would be incorrect to inject the term "generated" into the frequency control disclaimer that is expressly reflected in

Judge Grewal's construction, when that term instead more directly pertains to the second disclaimer that is not expressly reflected in the construction. R&R at 5.[7]

Furthermore, the prior litigation history concerning this patent demonstrates that the use of the word "generate" in the claim constructions is problematic. In the prior ITC Action, Administrative Law Judge Gildea adopted a construction that included the word "generate." Ex. M (ITC Claim Construction Order) at 21-40. TPL then proceeded to argue that the process of generating a clock signal did not include fixing the frequency of the signal. *See, e.g.*, Ex. Q (ITC Initial Determination) at 108-110. As a result, this issue required further litigation, which led to the ALJ ultimately making clear that his "generate" construction excluded oscillators whose frequency was fixed by an external crystal: "the process of setting the frequency of a clock signal and generating a clock signal are inseparable, because a clock signal must have a frequency, since its sole purpose is to provide a frequency for timing the operation of devices." *Id*. at 121-122. The Commission agreed. Ex. N (ITC Final Determination) at 24 ("The patent applicants' statement in the final sentence quoted above, in particular, shows that the applicants intended to disclaim, not only an external crystal/frequency generator, but also a fixed frequency, crystal controlled generator.").

Likewise, in the prior HTC Action, Judge Grewal provided the jury with an instruction that the "entire oscillator" claim term "is properly understood to exclude any external clock used to generate the signal used to clock the CPU." Ex. J (Dkt. No. 646 jury instructions) at 26; Ex. K (Dkt. No. 616 Order re Emergency Motion) at 2. However, during deliberations, the jury expressed uncertainty as to the meaning of the word "generate" in the jury instruction and sought clarification of this term. Ex. P (Trial Tr.) at 1641:21–1644:14.

Accordingly, the use of the term "fixed" in Judge Grewal's construction both more accurately reflects the applicants' actual disclaimers, and will avoid potential future argument and

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[7] Reflecting the two disclaimers in the prosecution history, Defendants proposed a construction to Judge Grewal that stated, in part, that the claimed oscillator "does not rely on . . . an external crystal . . . to cause clock signal oscillation or control clock signal frequency." R&R at 8.

confusion over the meaning and scope of the word "generate."

B. The Applicants Disclaimed Oscillators That Require A Control Signal.

In addition to disclaiming oscillators whose frequency is fixed by an external crystal, the applicants clearly and unambiguously disclaimed oscillators that require a control signal, as Judge Grewal correctly concluded. R&R at 1, 5-6, 11. These disclaimers were made by the applicants in attempting to distinguish their claimed "entire oscillator" from the prior art Sheets patent (Ex. H, U.S. Pat. No. 4,670,837, "Sheets"). Sheets discloses a voltage controlled oscillator whose frequency is set by writing a control word to the voltage controlled oscillator. Ex. H (Sheets) at col. 2, ll. 54-68.

1. The Applicants' Arguments Regarding Sheets Constitute Disclaimers.

Although Plaintiffs argue there was no control signal disclaimer during prosecution, such a disclaimer was found to exist not only by Judge Grewal, but also in the Texas Action and the ITC Action.[8] This is because applicants distinguished their "present invention" from Sheets' voltage controlled oscillator on the basis that Sheets' voltage controlled oscillator requires (*i.e.*, relies upon or needs) frequency control information from the on-chip microprocessor:

> The ***present invention does not similarly rely upon provision of frequency control information to an external clock***, but instead contemplates providing a ring oscillator clock and the microprocessor within the same integrated circuit. The placement of these elements within the same integrated circuit obviates the need for provision of the type of frequency control information described by Sheets, since the microprocessor and clock will naturally tend to vary commensurately in speed as a function of various parameters (e.g., temperature) affecting circuit performance. ***Sheets' system for providing clock control signals to an external clock is thus seen to be unrelated to the integral microprocessor/clock system of the present invention***.

Ex. F (April 11, 1996 Amend.) at 8 (TPL853_02954574); R&R at 5. Because the applicants referred to the "present invention" in this statement, their disclaimer of clock control signals applies to all claims. *See, e.g.*, *Ballard Med. Prods. v. Allegiance Healthcare Corp.*, 268 F.3d

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[8] R&R at 7; Ex. L (Texas Action, Dkt. No. 259, June 15, 2007, Memorandum and Order) at 11-12; Ex. M (ITC Action, April 18, 2013, Order No. 31) at 40-41.

1352, 1360-62 (Fed. Cir. 2001); R&R at 6 n.15.

When the examiner thereafter continued to maintain the rejection based upon Sheets, the applicants went even further and disclaimed the use of controlled oscillators altogether, regardless of whether the oscillator is on-chip or not:

> Even if the examiner is correct that the variable clock in Sheets is in the same circuit as the microprocessor of system 100, ***that still does not give the claimed subject matter. In Sheets, a command input is required to change the clock speed.*** In the present invention, the clock speed varies correspondingly to variations in operating parameters . . . ***No command input is necessary to change the clock frequency***.

Ex. G (January 8, 1997 Amend.) at 4 (TPL853_00002449); R&R at 6. Thus, according to the applicants, controlling even an on-chip oscillator's speed using a command signal generated on the chip "does not give the claimed subject matter." *Id*. Indeed, in a later amendment, the applicants left no doubt that, unlike "all cited references," the claimed oscillator is completely free of inputs and extra components:

> ***Crucial to the present invention*** is that . . . when fabrication and environmental parameters vary, the oscillation or clock frequency and the frequency capability of the driven device will automatically vary together. ***This differs from all cited references in that . . . the oscillator or variable speed clock varies in frequency but does not require manual or programmed inputs or external or extra components to do so.***

Ex. D at 5 (TPL853_00002429); R&R at 6.[9]

Thus, as Judge Grewal correctly concluded, the "applicants distinguished Sheets repeatedly on the ground that Sheets requires control signals, frequency control information or command inputs." R&R at 11. These arguments, distinguishing the claimed "entire oscillator" from Sheets, constitute clear and unambiguous disclaimers that must be reflected in the claim construction. *Am. Piledriving*, 637 F.3d at 1326. Accordingly, Judge Grewal correctly construed

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[9] When a patentee uses terms such as "crucial to" and "in the present invention," this use has a special effect on the scope of the claim. *See Microsoft Corp. v. Multi-Tech. Sys., Inc.*, 357 F.3d 1340, 1351-52 (Fed. Cir. 2004) (construing claim to require a feature that was "central to the functioning of the claimed invention").

"entire oscillator" to exclude oscillators "that require a control signal." R&R at 1, 5-6, 11; *Southwall Techs.*, 54 F.3d at 1576; *Rheox*, 276 F.3d at 1325.

2. Plaintiffs' Criticisms Of Judge Grewal's Construction Lack Merit.

Plaintiffs criticize the control signal portion of Judge Grewal's construction on three grounds. First, Plaintiffs characterize how the system described in Sheets allegedly works (Mot. at 11-12), and then offer their current attorney argument as to why Sheets is distinguishable from the claimed invention of the '336 patent. *Id*. at 12. However, as established above in connection with the Magar reference, Federal Circuit law is clear that disclaimer is measured by what the applicants actually said during prosecution, not by what they could have said instead during prosecution, or by what the patentee argues during litigation. *See* § IV.A.2, *supra*.

Second, Plaintiffs assert that the construction is too broad because it applies to "control signals generally," and that the disclaimer should instead be limited to "command, programmed or manual control inputs." Mot. at 13. However, as established above, the specific language the applicants actually used to distinguish Sheets includes not only "command input" and "manual or programmed inputs," but also "clock control signals" and "control information." Again, the scope of the disclaimer must be determined by what the applicants actually said, and Plaintiffs' proposed alternative does not cover the full breadth of the applicants' disclaimers. *See* §§ III and IV.A.2, *supra*.

Third, Plaintiffs argue that Judge Grewal's construction prohibits the entire oscillator from requiring a control signal "for ostensibly any purpose." Mot. at 13. However, it is clear from Judge Grewal's Report and Recommendation that the prohibition on requiring control signals relates to requiring control signals to control or change frequency. *See* R&R at 5 ("the applicants distinguished their 'present invention' from microprocessors that rely on ***frequency control information*** from an external source"); 6 ("Thus, according to applicants, ***controlling the on-chip oscillator's speed*** using a command signal 'does not give the claimed subject matter.'"). These statements are consistent with the construction that Defendants proposed to Judge Grewal, which provided in relevant part that the claimed oscillator "does not rely on a control signal . . . to . . . control clock signal frequency." R&R at 8.

Moreover, Plaintiffs' proposed alternative construction – excluding oscillators "that require command, manual, or programmed inputs to *change* frequency" (Mot. at 15) – is incorrect. First, as established above, the applicants' disclaimers were not limited to "command, manual or programmed inputs." Second, Plaintiffs' proposed construction is limited to "changing frequency" and omits "controlling" the frequency. This is incorrect as the applicants also distinguished Sheets on basis of the "frequency control." Ex. F (April 11, 1996 Amend.) at 8 (TPL853_02954574); R&R at 5.

V. CONCLUSION

Judge Grewal's construction of the "entire oscillator" limitation of the asserted claims of the '336 patent is correct and should be adopted by the Court because it accurately reflects the clear and unambiguous disclaimers made by applicants during prosecution.

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ATTESTATION

I, Aaron Wainscoat, am the ECF User whose ID and password are being used to file this Defendants' Response to Plaintiffs' Motion for *De Novo* Determination. In compliance with Civil Local Rule 5-1(i)(3), I hereby attest that the signatories listed above have read and approved the filing of this brief.

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