Nos. 2016-1306, -1307, -1309, -1310, -1311

In the United States Court of Appeals for the Federal Circuit

TECHNOLOGY PROPERTIES LIMITED LLC, PHOENIX DIGITAL SOLUTIONS LLC, PATRIOT SCIENTIFIC CORPORATION,

Plaintiffs-Appellants,

v.

HUAWEI TECHNOLOGIES CO., LTD., FUTUREWEI TECHNOLOGIES, INC., HUAWEI DEVICE CO., LTD., HUAWEI DEVICE USA INC., HUAWEI TECHNOLOGIES USA INC., ZTE CORPORATION, ZTE USA, INC., SAMSUNG ELECTRONIC CO., LTD, SAMSUNG ELECTRONICS AMERICA, INC., LG ELECTRONICS, INC., LG ELECTRONICS U.S.A., INC., NINTENDO CO., LTD., NINTENDO OF AMERICA INC.,

Defendants-Appellees.

Appeal from the United District Court
for the Northern District of California, Case Nos. 3:12-cv-03786-VC, 3:12-cv-03865-VC, 3:12-cv-03876-VC, 3:12-cv-03877-VC, 3:12-cv-03880-VC, and 3:12-cv-03881-VC.
The Honorable **Vince Chhabria**, Judge Presiding.

REPLY BRIEF OF PLAINTIFFS-APPELLANTS TECHNOLOGY PROPERTIES LIMITED LLC, PHOENIX DIGITAL SOLUTIONS, LLC and PATRIOT SCIENTIFIC CORPORATION

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REPLY BRIEF OF PLAINTIFFS-APPELLANTS TECHNOLOGY PROPERTIES LIMITED LLC, PHOENIX DIGITAL SOLUTIONS, LLC and PATRIOT SCIENTIFIC CORPORATION

A. Introduction

Appellees have failed to show that the statements contained in the intrinsic record constitute clear and unambiguous disavowal of the subject matter at issue in the district court's construction of the "entire oscillator" term. "When the prosecution history is used solely to support a conclusion of patentee disclaimer, the standard for justifying the conclusion is a high one." *Avid Tech., Inc. v. Harmonic, Inc.*, 812 F.3d 1040, 1045 (Fed. Cir. 2016). If disclaimer exists at all under this "high" standard, a court must construe it to be "congruent with the scope of surrender." *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003). Appellees fail to meet their burden in either respect.

B. Magar Reference

Central to the position taken by Appellees is the concept that *Magar* discloses an oscillator apart from the external crystal. Appellees weave this concept into all of their arguments by stating that Applicants "again and again" distinguished their invention "by arguing that, unlike their claimed invention, *Magar* used an **external crystal** to fix the frequency of the **oscillator**." Appellees' Responsive Brief ("Resp. Br.") at 12 (emphasis added). Appellees try to reinforce the validity of this concept by repeating it throughout their Response. *See, e.g.*,

Resp. Br. at 16, ("that the frequency of the ***Magar* oscillator** was fixed by an **external crystal** – and on the separate basis that the ***Magar* oscillator** relied on the **external crystal** . . . ." (emphasis added)).

But, as a factual matter, Appellees' position is simply wrong. Applicants distinguished their invention over *Magar*, in relevant part, by stating that the quartz crystal in *Magar*, the only oscillator shown in *Magar*, was "off-chip" (*i.e.*, was not on the same semiconductor substrate as the CPU) and could not vary in frequency, and therefore did not meet an express claim limitation present in the then-pending claims. The "oscillator" shown in *Magar is* the quartz crystal. They are the same thing. And this is the root of the flaw in the district court's construction that Appellees are now trying to prop up – that *Magar* shows two oscillators (*i.e.*, some unspecified oscillator in addition to the quartz crystal). Given that the district court's construction is premised on a factually inaccurate understanding of *Magar*, it must be rejected.

Appellees go so far as to characterize Appellants' position as a made-up "two-oscillator strawman." But, the two-oscillator issue flows directly from the district court's construction of one of the disclaimers associated with the "entire oscillator" term (*i.e.*, "an oscillator . . . whose frequency is not fixed by any external crystal."). Appellants correctly identify this disclaimer as involving two oscillators because it involves – "an oscillator" (the first oscillator) "whose

frequency is not fixed by any external crystal" (the second oscillator). Contrary to Appellees' assertions, Applicants repeatedly identified external quartz crystals as an oscillator in the intrinsic record. *See, e.g.*, Appx2093 ("**crystal oscillators** have never, to Applicants' knowledge, been fabricated on a single silicon substrate with a CPU, for instance.") and Appx2093 ("**[a]n oscillator** must exist someplace in the circuit from which a periodic clock is derived. In both cases, the **crystal** (or the entire oscillator in the second case) . . . .") (emphasis added).

The weakness in Appellees' criticisms of Appellants' "two-oscillator strawman argument" is demonstrated by Appellees' failure to identify "the oscillator" in *Magar*. They perform no factual analysis of the reference and do not come forward with evidence from *Magar* itself to rebut Appellants' assertion that *Magar* does not show two oscillators. Appellees repeat their theme of *Magar's* crystal *and* oscillator as if it were a settled issue, but cite to no support for this assertion (apart from their incorrect interpretation of Applicants' arguments).

The bottom line is that *Magar* does not disclose an oscillator in addition to its external quartz crystal. Further, Applicants' statements, the standard by which disclaimers are to be measured, according to Appellees, reflect this reality. As discussed in Appellants' Opening Brief, Applicants specifically stated that the "clock generator" in *Magar*, the only thing that could possibly constitute a second oscillator, is not an oscillator:

> **While an oscillator may be a clock, a clock is not usually an oscillator**. . . . This clock is typically modified to produce additional required clock signals for the system. The many clock signals are sometimes created by circuitry called a ”clock generator.” For example, see *Magar*, Fig. 2a.

Appx2093 (July 3, 1997, Response to Office Action at 4) (emphasis added), and, in a later response:

> Applicant’s prior comments apparently did not make clear the distinction between an oscillator and a clock as it applies to the *Magar* reference. As a self-contained on-chip circuit, ***Magar’s* clock gen is distinguished from an oscillator** in at least that it lacks the crystal or external generator that it requires. Thus ***Magar’s* circuit is** not an entirely on-chip oscillator as contemplated in the present case, **it is only a clock**.

Appx2102 (February 6, 1998, Response to Office Action at 4) (emphasis added). So, if it is true that Applicants’ “own words during prosecution determine whether a disavowal exists,” as Appellees assert, then there is no second oscillator in *Magar,* as Applicants specifically told the Patent Office that *Magar’s* “clock generator” (shown in Fig. 2a of *Magar* and reproduced in Resp. Br. at 12) is not an oscillator - “it is only a clock.” Having eliminated *Magar’s* “clock generator” as a potential second oscillator, the error in the district court’s construction is clear - there is simply no other element that could be the second oscillator in *Magar*. Yet, the portion of the appealed construction that relates to *Magar* explicitly contemplates that Applicants disclaimed an *oscillator* whose frequency is fixed by an external quartz crystal, something not shown in *Magar*.

Appellees make the point that even if *Magar* does not disclose the subject matter allegedly disclaimed (the interaction of a first oscillator with a second oscillator), Applicants could still make statements that might go above and beyond what was disclosed in a particular reference. In the abstract, Appellants do not disagree with this statement. But in the case at hand, no such statements were made. A review of the statements by Applicants and relied upon by both the district court and Appellees reveals that Applicants and the patent examiner were engaged in an intellectually vigorous debate over exactly what *Magar* disclosed as it related to the claims then under consideration. All of the statements by Applicants cited by Appellees as evidence of disclaimer are about *Magar* and the differences between *Magar* and the present invention. Thus, given that 1) Applicants did not believe that *Magar* showed a second oscillator, and 2) *Magar*, in fact, does not show such an oscillator, Appellants respectfully assert that no statements were made as to an arrangement of two oscillators, where such an arrangement was not contained in the reference that was the center of the debate between Applicants and the Patent Office.

Taking a step back, Appellants note that the existing claim limitations of the '336 Patent capture the subject matter Appellees argue has been disclaimed.[1] With

[1] As did the claims that were pending at the time the allegedly-disclaiming statements were made in the intrinsic record. See Appx2090-1 and Appx2099-2101 for the claims that were pending in 1997 and 1998.

respect to the various statements in the file history about the frequency of a quartz crystal, Appellants note that the current claims of the '336 Patent require:

> an entire oscillator disposed on said integrated circuit substrate [the same substrate as the central processing unit] said oscillator clocking said central processing unit at a clock rate and being constructed of a second plurality of electronic devices, thus varying the processing frequency of said first plurality of electronic devices and the clock rate of said second plurality of electronic devices in the same way as a function of parameter variation in one or more fabrication or operational parameters associated with said integrated circuit substrate, thereby enabling said processing frequency to track said clock rate in response to said parameter variation . . . .

Appx67 ('336 Patent, Claim 6). As seen above, the claim requires that the "entire oscillator" is required to "clock" the CPU and to "[vary] the processing frequency of said first plurality of electronic devices and the clock rate of said second plurality of electronic devices [which comprise the oscillator] . . . ." In other words, the claims require the clock signal generated by the oscillator and used to clock the CPU to vary in frequency. As discussed in the intrinsic record, however, the clock signal output by the quartz crystal in *Magar* could not vary its frequency rate because of its inherent physical characteristics. *See* Appx2093 (". . . 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.").

Each contested prosecution statement pointed to an aspect of existing claim language. The oscillator of the claims varied in frequency. *Magar's* oscillator did

not. The words of the claims alone satisfy the public notice function, since they convey already the disclaimed subject matter, without the need for a court to reach for extra scope limitations. Thus, the claims themselves contain the limitations that the district court's construction seeks to address as it relates to excluding oscillators whose frequency cannot vary.

In summary, the disclaimer found by the district court is improper because the subject matter of the disclaimer – an oscillator whose frequency is fixed by an external crystal, was never discussed, much less disclaimed by Applicants. Appellees repeatedly state that it must be Applicants' words that are the measure of disclaimer, but they fail to point to any portion of the intrinsic record where Applicants discussed an oscillator controlled by an external crystal. To be sure, Appellees *claim* the intrinsic record supports their position, but a close inspection reveals that it does not. In short, the claims contain express limitations that require the on-chip oscillator to vary the frequency of the clock signal that it supplies to the CPU, thus addressing any concerns that there exists subject matter covered by the claims that was disclaimed during the prosecution of the '336 Patent.

C. Sheets Reference

In objecting to Appellants' arguments regarding *Sheets*, Appellees continue to assert that the words of Applicants matter. Setting aside whether it is appropriate to divorce the words of the Applicant from their proper context,

focusing on the actual statements made by Applicants leads away from the restrictive construction advocated by Appellees.

To support their position, Appellees attempt to stretch Applicants' statements beyond their meaning. For example, Appellees cite the statement that "the present invention does not similarly rely upon provision of frequency control information to an external clock." Resp. Br. at 38, citing Appx2117. Yet the prior sentence is critical to understanding that statement. There, Applicants state that "[s]pecifically, a digital word indicative of this desired operating frequency is written by microprocessor 101 to VCO 12 by way of data bus 104 as a means of adjusting clock frequency." Appx2117. Thus, in light of this earlier sentence, when Applicants state that the "present invention does not **similarly** rely upon provision of frequency control information", it is clear that the Applicants distinguished the pending claims from *Sheets'* solution, not all uses of control information. This interpretation aids in understanding when Applicants state that the integrated circuit of the claimed invention obviates the "**need** for provision of the **type** of frequency control information described by *Sheets*." Appx2117 (April 11, 1996 Amend.) (emphasis added). And this interpretation is consistent with the statement that "***Sheets*' system** for providing clock control signals . . . is thus seen to be unrelated to the integral microprocessor/clock system of the present invention." *Id.* (emphasis added).

Appellees make similar errors – and reach far beyond "the words of the applicant" that matter – by rejiggering the focus of Applicants' statements as if those words targeted information sent "from" an on-board CPU. Resp. Br. at 38. But the words themselves focus on information sent "to an external clock." Appellees in their arguments ironically excuse themselves from relying on the actual words in the prosecution statements. Applicants' actual words lack the emphasis or the context that Appellees wish this Court to believe. Allegedly disclaiming something about where information goes (*i.e.*, "to an external clock," Appx2117) has no effect on the scope of from where such information can come (*i.e.*, "from the on-chip microprocessor," Resp. Br. at 38).

Appellees continue to stretch the actual words of Applicants when they argue that Applicants' statements regarding *Sheets*' dependence on a command input is tantamount to disclaiming "the use of controlled oscillators altogether." Resp. Br. at 39. But reviewing the record, Applicants were clear to point out that *Sheets* was unlike the claimed invention not because *Sheets* was capable of receiving command inputs, but because in the *Sheets* regime, command inputs were **required** for changes in frequency. Applicants highlighted this difference by pointing out how the claimed invention uses a variable speed oscillator and is capable of the changes in frequency imagined because of the unique nature of the integrated circuits' topography:

> Applicants are aware of no prior art teaching or suggesting a **variable speed oscillator** in the same integrated circuit . . . even if the Examiner is correct, that still does not give the claimed invention. In the present invention, the **clock speed varies correspondingly to variations in the operating parameters of the electronic devices of the microprocessor because both the variable speed clock and the microprocessor are fabricated together in the same integrated circuit.**

Appx2127 (Jan. 8, 1997, Response to Office Action) (emphasis added). This understanding squares neatly with the July 1997 statements by Applicants. There Applicants argue that the claimed invention is distinct because the clock and the CPU are fabricated on the same chip, and thus there must be some corresponding changes in frequency with the on-chip clock and the CPU. But with the cited art, "manual or programmed inputs, or external or extra components" are required to achieve such changes in frequency.

Appellees highlight for special attention Applicants' alternative argument about why *Sheets* was different even if its variable clock were in the same circuit as system 100's microprocessor. Appellees argue that these statements "disclaimed the use of controlled oscillators altogether, regardless of whether the oscillator is on-chip or not." That is not so. On the contrary, Appellees disregard the actual words (again). When addressing this alternative possibility, Applicants were exceedingly precise. They mentioned that "command inputs" were needed in *Sheets* to change the clock speed, but "command inputs" were not needed in the claimed invention since "clock speed varies correspondingly to variations in

operating parameters." Appx2127. These words do not reflect disclaimer of all controlled oscillators. At most, such words "disclaim" *command input* controlled oscillators (*i.e.*, those that act on digital words) that do *not* allow clock speed variation based on variations in operating parameters. Again, the claim language already expressly addresses any such "disclaimer" elsewhere in the claims, resulting in no need for extra recitations to serve any public notice function.

These statements are not clear and unmistakable disclaimer as Appellees argue, nor do they support the construction invented by the district court. The district court held that the entire oscillator "does not require a control signal." Appx7. But the district court's holding cannot be correct. As discussed in Appellants' Opening Brief, even accepting the notion that Applicants made a disclaimer, Applicants never disclaimed control signals generally. Instead, they attacked the system of *Sheets*, or they discussed the **necessity** of command inputs, or manual or programmed inputs, or external or extra components to force the clock to **vary in frequency**. For example, in one argument, Applicants wrote 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**." Appx2094 (July 11, 1997 Response to Office Action) (emphasis added). This "to do so" must refer to the ability to vary in frequency. *See also* Appx 2127, (arguing that "a command input is required to **change the clock speed**." (emphasis added)).

When reviewing the totality of Applicants' statements, the common theme is one that suggests a much less expansive disclaimer than the one adopted by the district court. As discussed in Appellants' Opening Brief, in situations such as this one, Federal Circuit precedent requires the adoption of that narrower disclaimer. *See TomTom, Inc. v. Adolph*, 790 F.3d 1315, 1325 (Fed. Cir. 2015) (after the parties agreed that there was a disclaimer but disputed its scope, reversing a district court disclaimer decision, holding that disclaiming a "requirement" for a map database did not exclude from scope every system that "contains" one).

Appellees also take issue with the construction proposed by Appellants. They first criticize that Appellants provide no explanation regarding the scope of control signals as opposed to command, manual, and programmed input. This criticism exemplifies Appellees' desire to expand the wording of any potential disclaimer beyond what was actually stated. Regardless, the proposed expansions, both to "control signals" generally and to systems that "control[] clock signal frequency" are based on an inaccurate reading of the record. For example, in addition to the prosecution statements discussed above, Applicants did not state that their invention does not permit the use of frequency control information, they merely distinguished from *Sheets* and argued that the present invention "**does not similarly rely upon** the provision of frequency control information." Appx2114 (Apr. 11, 1996, Response to Office Action) (emphasis added).

D. Conclusion

As Appellees argue, any disclaimer should be limited to the actual arguments made in front of the Patent Office. As explained in Appellants' Opening Brief, a complete, balanced review of the actual arguments made to the Patent Office requires rejecting the scope limitations proposed by the district court and demands, instead, either no such limitation or the ones advocated by Appellants.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on June 23, 2016, an electronic copy of the Reply Brief of Plaintiffs-Appellants was filed with the Clerk of the Court for the United States Court of Appeals for the Federal Circuit by using the CM/ECF system. The undersigned also certifies that the following participant in this case is a registered CM/ECF user and that service of the Brief will be accomplished by the CM/ECF system:

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This brief complies with the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B). The brief contains 3,007 words, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii).

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