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JUDGMENT OF THE FEDERAL CIRCUIT (FEBRUARY 6, 2019)

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 ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
LG ELECTRONICS, INC., LG ELECTRONICS
U.S.A., INC., NINTENDO CO., LTD.,
NINTENDO OF AMERICA, INC.,

Defendants-Appellees.

2018-1439, 2018-1440, 2018-1441,
2018-1444, 2018-1445

Appeals from the United States District Court for the Northern District of California in Nos. 3:12-cv-03865-VC, 3:12-cv-03876-VC, 3:12-cv-03877-VC, 3:12-cv-03880-VC, 3:12-cv-03881-VC, Judge Vince Chhabria

Before: MOORE, TARANTO, and
CHEN, Circuit Judges.

THIS CAUSE having been heard and considered, it is ORDERED and ADJUDGED:

PER CURIAM

AFFIRMED. *See* Fed. Cir. R. 36.

Entered by Order of the Court

/s/ Peter R. Marksteiner
Clerk of Court

February 6, 2019

MANDATE OF THE FEDERAL CIRCUIT (APRIL 17, 2019)

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.,
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USA INC., HUAWEI TECHNOLOGIES USA INC.,
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U.S.A., INC., NINTENDO CO., LTD.,
NINTENDO OF AMERICA, INC.,

Defendants-Appellees.

2018-1439, 2018-1440, 2018-1441,
2018-1444, 2018-1445

Appeals from the United States District Court for the Northern District of California in Nos. 3:12-cv-03865-VC, 3:12-cv-03876-VC, 3:12-cv-03877-VC, 3:12-cv-03880-VC, 3:12-cv-03881-VC, Judge Vince Chhabria

In accordance with the judgment of this Court, entered February 6, 2019, and pursuant to Rule 41 of the Federal Rules of Appellate Procedure, the formal mandate is hereby issued.

For the Court

/s/ Peter R. Marksteiner
Clerk of Court

April 17, 2019

ORDER OF THE FEDERAL CIRCUIT DENYING APPELLANTS MOTION TO TAKE JUDICIAL NOTICE (JUNE 1, 2018)

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 ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC., LG ELECTRONICS, INC., LG ELECTRONICS U.S.A., INC., NINTENDO CO., LTD., NINTENDO OF AMERICA, INC.,

Defendants-Appellees.

2018-1439, -1440, -1441, -1444, -1445

Appeals from the United States District Court for the Northern District of California in Nos. 3:12-cv-03865-

VC, 3:12-cv-03876-VC, 3:12-cv-03877-VC, 3:12-cv-03880-VC, 3:12-cv-03881-VC, Judge Vince Chhabria

Before: MOORE, Circuit Judge.

The appellants move this court to take judicial notice. The appellees oppose the motion or, alternatively, urge the court to defer the motion to the merits panel.

The appellants seek review of the district court's final judgment granting the appellees' motion for summary judgment of non-infringement of U.S. Patent No. 5,809,336. The appellants seek judicial notice of portions of the file history of that patent, including an October 16, 1997 office action, an April 24, 1998 supplemental amendment, a May 13, 1998 examiner interview summary, and a May 13, 1998 notice of allowance, and for those materials to be allowed in the joint appendix.

The appellants argue that judicial notice of the documents is appropriate because they are public records. The appellants point out that the issues on appeal concern the application of the doctrine of prosecution disclaimer to certain prior art references discussed among the applicants and the United States Patent and Trademark Office. While not of record, the appellants argue that these materials provide important context and are pertinent to a reasoned analysis of the appeals that are being presented on appeal.

The appellees respond that judicial notice of these materials is not appropriate in this long-standing case because the appellants could have, but failed to, enter the materials in the record before the trial court. The appellees argue that the appellants want these

excerpts in the record solely to make new claim construction arguments, which were not raised in the prior appeal that construed the relevant claims, and that arguments predicated on these aspects of the file history were waived.

The court denies the appellants' motion. Ordinarily, the record on appeal is limited to papers filed with the district court or admitted into evidence. *See* Fed. R. App. P. 10(a); *Kirshner v. Uniden Corp. of Am.*, 842 F.2d 1074, 1077 (9th Cir. 1988) ("Papers not filed with the district court or admitted into evidence by that court are not part of the clerk's record and cannot be part of the record on appeal."). The court sees no reason to depart from that rule here, particularly in light of the fact that the appellants could have filed these materials into the record.

Accordingly,

IT IS ORDERED THAT:

The motion is denied.

For the Court

/s/ Peter R. Marksteiner
Clerk of Court

ORDER GRANTING MOTIONS FOR SUMMARY JUDGMENT (DECEMBER 13, 2017)

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TECHNOLOGY PROPERTIES LIMITED LLC, ET AL.,

Plaintiffs,

v.

HUAWEI TECHNOLOGIES CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03865-VC
Re: Dkt. No. 139

TECHNOLOGY PROPERTIES LIMITED LLC, ET AL.,

Plaintiffs,

v.

ZTE CORPORATION, ET AL.,

Defendants.

Case No. 12-cv-03876-VC
Re: Dkt. No. 143

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

SAMSUNG ELECTRONICS CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03877-VC
Re: Dkt. No. 140

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

LG ELECTRONICS, INC., ET AL.,

Defendants.

Case No. 12-cv-03880-VC
Re: Dkt. No. 157

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

NINTENDO CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03881-VC
Re: Dkt. No. 141

Before: Vince CHHABRIA, United States District Judge

The defendants' motions for summary judgment of non-infringement are granted.

The plaintiffs ("TPL") stipulated to non-infringement under this Court's prior construction of the phrase "an entire oscillator disposed upon said integrated circuit substrate" as used in the asserted claims of Patent No. 5,809,336. The Federal Circuit then made a "minor modification" to that claim construction, holding that the proper construction of the disputed claim term is: "an oscillator located entirely on the same semiconductor substrate as the central processing unit that does not require a command input to change the clock frequency and whose frequency is not fixed by any external crystal." *Tech. Props. Ltd. LLC v. Huawei Techs. Co.*, 849 F.3d 1349, 1360 (Fed. Cir. 2017). In doing so, the Federal Circuit noted that its change to the prior construction "likely does not affect the outcome in this case." *Id.* The Federal Circuit's prediction was correct.

The parties do not dispute that the oscillators within the accused products operate as part of "phase-locked loop" systems ("PLLs"). The parties agree that, in practice, these PLLs limit the frequencies at which the oscillators at issue oscillate. *See, e.g.*, Decl. of Dr. Vivek Subramanian at 21, Dkt. No. 139-3; Decl. of Dr. Vojin Oklobdzija at 9-10, Dkt. No. 142-1. The parties also essentially agree on how PLLs work: PLLs use a reference frequency, generally provided by an off-chip crystal oscillator, along with a programmable divisor to set the frequency of the on-chip system clock. As a result, within a functioning PLL, the frequency at which the on-chip oscillator oscillates is a multiple of the off-chip reference frequency. *See* Subramanian Decl. at 17-20; Oklobdzija Decl. at 10; *id.* at 14 ("A PLL proportionally tracks the reference frequency as closely as possible").

TPL argues that, even within the PLL, the accused oscillators infringe because they experience frequency variations resulting from process, voltage, and temperature parameters for which the PLL must correct. *See* TPL Opp'n Br. at 23-26, 30-31, Dkt. No. 142. Because the oscillators are inherently responsive to these parameters, TPL contends, the accused oscillators do not "require a command input to change the clock frequency." But, assuming that some small frequency variations occur while the PLL is operating, these minor fluctuations do not constitute the changes in clock frequency contemplated by the Federal Circuit's claim construction.

The record shows that, within a PLL, the accused oscillators operate at frequencies comparably stable to those of crystal oscillators. *See* Subramanian Decl. at 28-33; Decl. of Erik Fuehrer, Ex. 6 at 1217-26,

1480-83, Dkt. No. 138-16; *see also* TPL Opp'n Br. at 24 ("At most, Defendants' testing shows that PLLs stabilize the output of on-chip oscillators . . . and that those stabilized outputs are roughly similar in stability to a frequency output by a hypothetical crystal."). TPL characterizes crystal oscillators as "fixed." *See* TPL Opp'n Br. at 2 ("A clock signal generated from a crystal is a fixed-frequency signal that does not meaningfully vary based on environmental conditions."); Fuehrer Decl., Ex. 2 at 4, Dkt. No. 139-6, ("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"). There is thus no reason to consider any minor frequency variations occurring within a locked PLL to be the changes in clock frequency identified in the Federal Circuit's claim construction. *See Tech. Props. Ltd.*, 849 F.3d at 1360.[1]

The record further shows that the frequency of the on-chip oscillator within the PLL will remain stable, in the sense discussed above, unless and until it is changed by a command input, namely, a change to the crystal that sets the reference frequency or to the value of a programmable divisor within the PLL. *See* Subramanian Decl. at 20; Decl. of Marzio Pedrali-Noy at 3-4, Dkt. No. 138-12; Decl. of Dr. Jaegon Lee

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[1] There is also no reason to think that the Federal Circuit intended to refer to differences between the maximum frequency capabilities of one processor versus another in crafting the limitation regarding command inputs and changes in clock frequency. Therefore, to the extent TPL contends that the practice of "binning," in which manufacturers sort processors based on their performance capabilities, is evidence that the accused oscillators can change frequency as a result of fabrication process parameters, not just command inputs, the argument is not persuasive.

at 6, 11, Dkt. No. 138-10. TPL has provided no evidence to the contrary, nor has it provided a definition of "command input" that would exclude inputs of these kinds. *Cf.* Oklobdzija Decl. at 12 (pointing only to the oscillator's "fundamental characteristics . . . determined by physics and nature" as support for the notion that no command input is required to change the clock frequency).

It's worth noting that, because PLLs inhibit frequency changes of any significance in the absence of a command input, PLLs prevent the oscillators in the accused devices from acting in the advantageous manner touted in the relevant part of the patent and recognized by the Federal Circuit. The proposed benefit of locating the claimed oscillator on the same substrate as the CPU is that the clock and the CPU can "automatically vary together," without requiring a command input to change the clock frequency. *Tech. Props. Ltd.*, 849 F.3d at 1360 (citation omitted); Fuehrer Decl., Ex. 3 at 7, Dkt. No. 139-7 ("[T]he operational speed of the microprocessor and ring oscillator clock are designed to vary similarly as a function of variation in temperature, processing and other parameters affecting circuit performance"); *see also* Oklobdzija Decl. at 7. The effectively simultaneous, corresponding changes in the frequencies of the clock and CPU allow the CPU to run "at the maximum frequency possible, but never too fast" given the process, voltage, and temperature conditions affecting the CPU. '336 Patent at 17:1-2, Dkt. No. 139-5; *see also* Fuehrer Decl., Ex. 3 at 7-9. Rather than allow the frequency of the oscillator to vary freely with process, voltage, and temperature parameters as in the claimed invention, the PLL controls the frequency at which its component oscillator

oscillates so that its frequency does not track changes in these parameters. And, as mentioned, the undisputed evidence shows that the PLL does so very effectively, such that any changes in frequency resulting from operational parameters are all but imperceptible.

In its papers and through its experts, TPL makes an alternative argument (although counsel for TPL seemed—wisely—to disavow it at oral argument). The argument is that what matters is not how the accused oscillators operate within a PLL, but whether the accused oscillators in isolation meet all the claim limitations. *See, e.g.*, Oklobdzija Decl. at 13 (stating that the relevant testing to determine infringement "would need to measure the [voltage-controlled oscillator's] frequencies with PLL circuitry disabled so that the VCO frequency changes in response to temperature were not masked by PLL intervention."). But the accused oscillators don't operate in isolation in the accused devices, they operate within the tightly controlled framework of the PLL. Given the claim limitations at issue and the construction provided by the Federal Circuit, TPL cannot defeat the defendants' summary judgment motions simply by asserting that the accused devices hypothetically could infringe if altered. In other words, that the accused products all situate the on-chip oscillator within a PLL matters for purposes of determining whether those products infringe, because the PLLs affect how the on-chip oscillator's frequency is determined; the PLL circuitry is not simply an extra element added on to an infringing device. *See Outside the Box Innovations, LLC v. Travel Caddy, Inc.*, 695 F.3d 1285, 1305 (Fed. Cir. 2012) (per curiam) (concluding that the addition of plywood to a fabric panel was not merely a feature

added on to an infringing device but a "material change" such that the accused product did not infringe the claimed "flexible fabric . . . panel"); *High Tech Med. Instrumentation, Inc. v. New Image Indus., Inc.*, 49 F.3d 1551, 1555 (Fed. Cir. 1995) (holding that a patentee was unlikely to succeed in proving infringement where, to infringe, "[t]he original and intended operating configuration of the device must be altered" by loosening screws fixing the accused camera in place); *see also Accent Packaging, Inc. v. Leggett & Platt, Inc.*, 707 F.3d 1318, 1327 (Fed. Cir. 2013). The question is not whether the accused oscillators could infringe in theory, but whether there is any dispute about whether they do in fact.

In sum, TPL has not put forth evidence sufficient to raise a question about whether the oscillators in the accused products require a command input to change the frequencies at which they oscillate. The record shows that, unlike the free-running oscillators described in the patent, the accused oscillators are situated within PLLs that hold their frequencies effectively steady until they are changed by a command input. Because it is clear that the accused devices require a command input to change the clock frequency, they do not meet "each and every limitation" of the asserted claims. *Cross Med. Prod., Inc. v. Medtronic Sofamor Danek, Inc.*, 424 F.3d 1293, 1310 (Fed. Cir. 2005). Summary judgment for the defendants is appropriate, and there's no need to discuss whether the accused oscillators are "fixed by any external crystal," although it seems likely that TPL would lose on that question as well. *Tech. Props. Ltd.*, 849 F.3d at 1360.

IT IS SO ORDERED.

/s/ Vince Chhabria
United States District Judge

Dated: December 13, 2017

JUDGMENT OF THE DISTRICT COURT (DECEMBER 13, 2017)

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TECHNOLOGY PROPERTIES LIMITED LLC, ET AL.,

Plaintiffs,

v.

HUAWEI TECHNOLOGIES CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03865-VC

TECHNOLOGY PROPERTIES LIMITED LLC, ET AL.,

Plaintiffs,

v.

ZTE CORPORATION, ET AL.,

Defendants.

Case No. 12-cv-03876-VC

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

SAMSUNG ELECTRONICS CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03877-VC

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

LG ELECTRONICS, INC., ET AL.,

Defendants.

Case No. 12-cv-03880-VC

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

NINTENDO CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03881-VC

Before: Vince CHHABRIA,
United States District Judge.

The Court, having granted the defendants' motions for summary judgment, now enters judgment in favor of the defendants and against the plaintiffs in each of the above five cases. The Clerk of Court is directed to close these cases.

IT IS SO ORDERED.

/s/ Vince Chhabria
United States District Judge

Dated: December 13, 2017

OPINION OF THE FEDERAL CIRCUIT (MARCH 3, 2017)

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 ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
LG ELECTRONICS, INC., LG ELECTRONICS
U.S.A., INC., NINTENDO CO., LTD.,
NINTENDO OF AMERICA, INC.,

Defendants-Appellees.

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

Appeals from the United States District Court for the Northern District of California in Nos. 3:12-cv-03865-VC, 3:12-cv-03876-VC, 3:12-cv-03877-VC, 3:12-cv-03880-VC, 3:12-cv-03881-VC, Judge Vince Chhabria

Before: MOORE, WALLACH, and
CHEN, Circuit Judges.

MOORE, Circuit Judge.

The present appeals arise from five cases in the Northern District of California. Technology Properties Limited LLC, Phoenix Digital Solutions LLC, and Patriot Scientific Corp. (collectively "Technology Properties") asserted U.S. Patent No. 5,809,336 (the " '336 patent") against Huawei Technologies Co., Ltd., Futurewei Technologies, Inc., Huawei Device Co., Ltd., Huawei Device USA Inc., Huawei Technologies USA Inc., ZTE Corp., ZTE USA, Inc., Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., LG Electronics, Inc., LG Electronics U.S.A., Inc., Nintendo Co., Ltd., and Nintendo of America Inc. (collectively "Appellees") in five separate litigations. After claim construction, the parties stipulated to non-infringement based on the district court's construction of "an entire oscillator disposed upon said integrated circuit substrate." Technology Properties appealed, and our court consolidated the appeals. Because the district court erred in a portion of its construction of "entire oscillator," we vacate and remand.

I. Background

A. The '336 Patent

The '336 patent discloses a microprocessor with two independent clocks—a variable frequency system clock connected to the central processing unit ("CPU") and a fixed-frequency clock connected to the input/output ("I/O") interface. '336 patent at 3:26-35. The variable-frequency system clock is a ring oscillator. *Id.*

at 16:56-57. A ring oscillator is made by connecting an odd number of inverters in series, then connecting the output of the final inverter to the input of the first, creating an inherently unstable (i.e., oscillating) output. *Id.* at Fig. 18. A ring oscillator's frequency is considered "variable" because it fluctuates based on external stressors such as temperature and voltage. *Id.* at 16:59-67. For example, the same circuit will oscillate at 100 MHz at room temperature but only 50 MHz at 70 degrees Celsius. *Id.*

The '336 patent's I/O clock is a quartz crystal. *Id.* at 17:25-27. A crystal is a piece of material that oscillates at a specific frequency when voltage is applied. Unlike ring oscillators, crystals maintain a steady frequency regardless of their environment. For this reason, the I/O clock in the '336 patent is considered "fixed." *See id.* at 17:33 (describing the "fixed speed" I/O interface).

The '336 patent teaches improving microprocessor performance by decoupling the CPU and I/O clocks. The variable-speed CPU clock is fabricated on the same silicon substrate as the rest of the microprocessor, including the CPU itself. *Id.* at 16:57-58. Because the CPU and CPU clock are fabricated on the same silicon substrate, they react similarly to external stressors. *Id.* at 16:63-67. This allows the maximum processing speed of the CPU to track the oscillating frequency of its clock. As the patent describes it, the "CPU 70 will always execute at the maximum frequency possible, but never too fast." *Id.* at 17:1-2. The I/O clock is located off-chip and controls the chip's I/O interface. "By decoupling the variable speed of the CPU 70 from the fixed speed of the I/O interface 432, optimum per-

formance can be achieved by each." *Id.* at 17:32-34. The two-clock arrangement is illustrated in Figure 17:

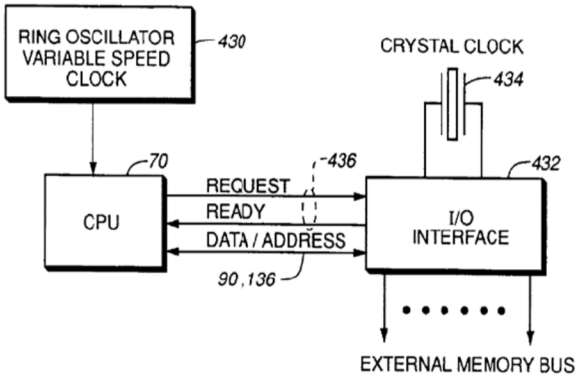

FIG._17

Id. at Fig. 17.

Claim 6 of the '336 patent is representative:

> A microprocessor system comprising:
>
> a central processing unit disposed upon an integrated circuit substrate, said central processing unit operating at a processing frequency and being constructed of a first plurality of electronic devices;
>
> an entire oscillator disposed upon said integrated circuit substrate and connected to said 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 vari-

> ation 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;
>
> an on-chip input/output interface, connected between said central processing unit and an external memory bus, for facilitating exchanging coupling control signals, addresses and data with said central processing unit; and
>
> an external clock, independent of said oscillator, connected to said input/output interface wherein said external clock is operative at a frequency independent of a clock frequency of said oscillator.

'336 patent, claim 6 (emphasis added). Claim 6 requires, among other things, "an entire oscillator disposed upon said integrated circuit substrate," which refers to the variable-frequency CPU clock. The district court construed the term 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." J.A. 7 (emphasis added).[1] The parties agree to the first half of the construction but dispute the emphasized portion. J.A. 13.

Appellees contend the second half of the construction is proper because the patentee disclaimed certain

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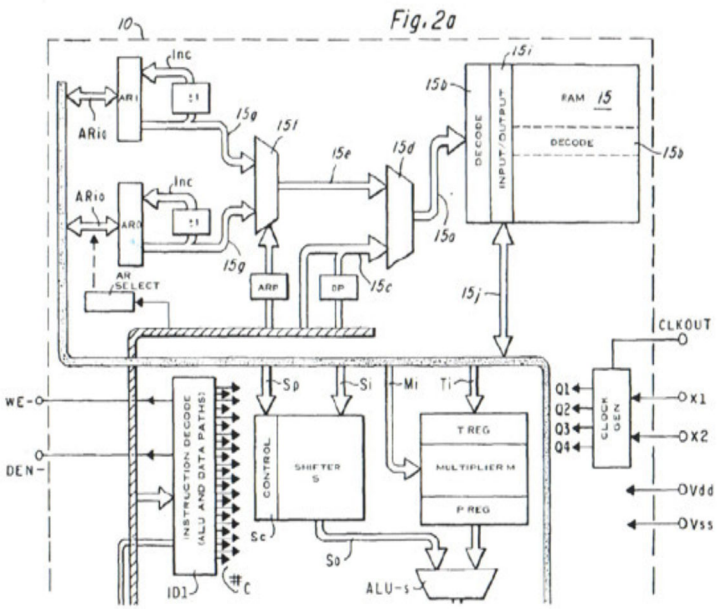
[1] References to the district court's opinion refer to the Magistrate Judge's Claim Construction Report and Recommendation, which the District Judge reviewed de novo and adopted without modification. *See* J.A. 5.

claim scope during prosecution to overcome rejections based on U.S. Patent Nos. 4,503,500 ("Magar") and 4,670,837 ("Sheets"). Specifically, Appellees contend the construction "whose frequency is not fixed by any external crystal" is mandated by the patentee's disclaiming statements relating to Magar, and the construction "that does not require a control signal" is required by disclaiming statements relating to Sheets. Each reference is discussed in turn below.

B. The Magar Reference

Magar is a 1985 patent assigned to Texas Instruments that discloses a basic microprocessor. The Magar chip contains a clock generator (CLOCK GEN) located on the same silicon substrate as the remainder of the processor. The inputs of CLOCK GEN are pins X1 and X2, which are connected to a crystal or some other external generator. CLOCK GEN uses the signal from the external crystal to generate four clocks, Q1-Q4, that drive the chip. CLOCK GEN also regulates the chip's timing or synchronization with external components with the CLKOUT pin. This is illustrated in Figure 2a:



J.A. 2044.

During prosecution, the examiner rejected what would become claim 6 of the '336 patent under 35 U.S.C. § 103 in light of Magar. The patentee responded that Magar did not disclose the "entire oscillator" limitation and sought to traverse the rejection. In doing so, it made several statements the district court found to be disclaiming. First, the district court found that the patentee "attempted to distinguish Magar by emphasizing that the clock disclosed in Magar was fixed by a crystal that was external to the microprocessor, unlike their on-chip variable speed clock." J.A. 9 (citing the following statement from the prosecution history).

> [O]ne of ordinary skill in the art should readily recognize that the speed of the cpu [sic] and the clock do not vary together due to manufacturing variation, operating voltage

> and temperature of the [integrated circuit] in the Magar microprocessor, as taught in the above quotation from the reference. 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.

J.A. 2092-93. Next, the district court stated that "the applicants also argued that the Magar clock could not practice the claimed invention because of its reliance on a crystal, which by its nature cannot vary its oscillator frequency." J.A. 9 (citing the following statement from the prosecution history).

> [C]rystal oscillators have never, to Applicant's 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.

J.A. 2093. Third, the district court held that "[t]he applicants also disclaimed the use of an external crystal to cause clock signal oscillation." J.A. 10 (citing the following statement from the prosecution history).

> 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 at 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.

J.A. 2101. Based on these statements, the district court concluded that "the applicants surrendered any oscillator that like Magar's is fixed by an off-chip crystal" and held that the construction of "entire oscillator" must include the limitation "whose frequency is not fixed by any external crystal." J.A. 7, 15.

C. The Sheets Reference

Sheets is a patent assigned to AT&T/Bell Labs that discloses a microprocessor with a variable-frequency clock. The Sheets CPU conserves power by occasionally operating below its maximum frequency. The clock's frequency correlates to the processing

demands faced by the CPU. When the CPU faces a heavier processing load, its clock runs at a higher frequency. When the CPU faces a lighter load, its clock runs at a lower frequency.

Sheets teaches a CPU timed by a voltage-controlled oscillator ("VCO"), which transmits the clock signal to the CPU. The CPU constantly measures its current processing load and computes an appropriate operating frequency. It communicates this information to the VCO, which throttles its frequency accordingly.

The examiner initially rejected claim 6 of the '336 patent under § 103 in light of Sheets. Like the Magar reference, the patentee traversed the rejection by arguing Sheets failed to disclose an "entire oscillator," along the way making several statements the district court found constituted disclaimers. First, the district court noted that "the applicants distinguished their 'present invention' from microprocessors that rely on frequency control information from an external source." J.A. 10 (citing the following statement from the prosecution history).

> 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 perfor-

> mance. 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.

J.A. 2117. Second, addressing statements made in response to a later office action, the district court found that "the applicants went even further and disclaimed the use of controlled inputs altogether, regardless whether the control is on-chip or not." J.A. 11 (citing the following statement from the prosecution history).

> Even if the Examiner is correct that the variable clock in Sheets is in the same integrated circuit as the microprocessor of system 100, that still does not give [sic] 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 of the electronic devices of the microprocessor because both the variable speed clock and the microprocessor are fabricated together in the same integrated circuit. No command input is necessary to change the clock frequency.

J.A. 2127. Third, the district court found that "the applicants left no doubt that, unlike 'all cited references,' the claimed oscillator is completely free of inputs and extra components." J.A. 11 (citing the following statement from the prosecution history).

> Crucial to the present invention is that since both the oscillator or variable speed clock and driven device are on the same substrate,

> when the 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 and the driven device are on the same substrate, and 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.

J.A. 2094. The district court found that based on these statements, "[t]he applicants distinguished Sheets repeatedly on the ground that Sheets requires control signals, frequency control information or command inputs." J.A. 16. It then held that the construction of "entire oscillator" must include the limitation "that does not require a control signal." J.A. 7.

Technology Properties appeals the district court's construction. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

II. DISCUSSION

An applicant's statements to the PTO characterizing its invention may give rise to prosecution disclaimer. *Uship Intellectual Props., LLC v. United States*, 714 F.3d 1311, 1315 (Fed. Cir. 2013). Prosecution disclaimer can arise from both claim amendments and arguments made to the PTO. *Biogen Idec, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1095 (Fed. Cir. 2013). The doctrine does not apply unless the disclaimer is "both clear and unmistakable to one of ordinary skill in the art." *Elbex Video, Ltd. v. Sensormatic Elecs. Corp.*, 508 F.3d 1366, 1371 (Fed.

Cir. 2007) (quotations omitted). When determining whether disclaimer applies, we consider the statements in the context of the entire prosecution. *MIT v. Shire Pharm., Inc.*, 839 F.3d 1111, 1119 (Fed. Cir. 2016). If the challenged statements are ambiguous or amenable to multiple reasonable interpretations, prosecution disclaimer is not established. *Id.*

We review claim construction de novo except for subsidiary fact findings, which we review for clear error. *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841-42 (2015).

A. Disclaimer Based on Magar

Technology Properties argues the district court erred by limiting an "entire oscillator" to one "whose frequency is not fixed by any external crystal." It distinguishes Magar by arguing that Magar requires an off-chip crystal oscillator, while claim 6 of the '336 patent generates the CPU clock signal on-chip. It argues Magar's only oscillator is the off-chip crystal that is input to CLOCK GEN, which is located on the same silicon substrate as the CPU. It argues CLOCK GEN itself is not an oscillator because it simply takes the output of the off-chip crystal and modifies it to produce four derivative signals. For these reasons, it argues Magar is distinguishable from the claimed invention because Magar's clock signal is generated off-chip, while the '336 patent claims generate a clock signal on-chip. It contends the district court misinterpreted this argument in the prosecution history. *See* Appellants' Br. 34-43.

The argument Technology Properties raises on appeal may have been sufficient to traverse the Magar rejection and avoid a narrower construction, but this

is not the same argument the patentee presented during prosecution. Throughout the prosecution history, the patentee argued Magar was distinguishable for two specific reasons: (1) it discloses a fixed-frequency crystal rather than a variable-frequency ring oscillator, and (2) it requires an external (off-chip) generator. The patentee made these distinctions in the first paragraph of its first office action response addressing Magar, arguing Magar was distinguishable because "the clock disclosed in the Magar reference is in fact driven by a fixed frequency crystal, which is external to the Magar integrated circuit." J.A. 2091. And the patentee included these distinctions in its concluding paragraph to a later office action response, summarizing that Magar was "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." J.A. 2103 (emphasis added). The district court's construction properly includes both of the patentee's clear disclaimers.

The first aspect of the patentee's disclaimer is that the "entire oscillator" cannot be a fixed-frequency crystal oscillator. The patentee argued to the examiner, "it is clear that the element in Fig. 17 [of the '336 patent] missing from Fig. 2a in Magar is the ring counter variable speed clock 430." J.A. 2092. It explained that "[t]he Magar microprocessor in no way contemplates a variable speed clock as claimed." J.A. 2093. It then distinguished Magar on the grounds that its crystal clock rate "is at a fixed, not a variable, frequency." J.A. 2101. We agree with the district court's conclusion that based on these statements, the "entire oscillator" must be a variable frequency oscillator rather than a fixed-frequency crystal. *See* J.A. 9-10.

The patentee's disclaimer may not have been necessary, but its statements made to overcome Magar were clear and unmistakable.

The second aspect of the patentee's disclaimer is that the "entire oscillator" cannot require an external crystal or frequency generator. During prosecution, the patentee characterized Magar as teaching a "frequency controlled by a crystal which is also external to the microprocessor." J.A. 2092-93. It argued Magar was distinguishable because "Magar's clock generator relies on an external crystal . . . to oscillate." J.A. 2101. Unlike the claimed "entire oscillator," the patentee stated that Magar's on-chip clock generator in isolation "lacks the crystal or external generator" necessary to run the on-chip clock generator. J.A. 2102. And it explained that the '336 patent's entire oscillator was novel because "it oscillates without external components (unlike the Magar reference)." J.A. 2102. We hold that the district court's narrowing construction based on Magar—"whose frequency is not fixed by any external crystal"—properly encapsulates the patentee's disclaiming statements.

Technology Properties presented clear and concise arguments about the distinctions between Magar and the '336 patent in its briefing to our court. Had those same arguments been made to the Patent Office, our construction may have been different because the patentee likely disclaimed more than was necessary to overcome the examiner's rejection. But the scope of surrender is not limited to what is absolutely necessary to avoid a prior art reference; patentees may surrender more than necessary. *See Norian Corp. v. Stryker Corp.*, 432 F.3d 1356, 1361-62 (Fed. Cir. 2005); *Fantasy Sports Props., Inc. v. Sportsline.com, Inc.*, 287 F.3d 1108, 1114-

15 (Fed. Cir. 2002). When this happens, we hold patentees to the actual arguments made, not the arguments that could have been made. *Norian*, 432 F.3d at 1361-62. The question is what a person of ordinary skill would understand the patentee to have disclaimed during prosecution, not what a person of ordinary skill would think the patentee needed to disclaim during prosecution.

We affirm the district court's construction that an "entire oscillator" is one "whose frequency is not fixed by any external crystal."

B. Disclaimer Based on Sheets

Technology Properties argues the district court erred by limiting an "entire oscillator" to one "that does not require a control signal." We hold that the term is properly construed as one "that does not require a command input to change the clock frequency."

The district court erred by holding that the patentee disclaimed any use of a command signal by the entire oscillator. Instead, the patentee disclaimed a particular use of a command signal—using a command signal to change the clock frequency. The patentee argued during prosecution that Sheets was distinguishable from the '336 patent claims because Sheets requires "a command input . . . to change the clock speed." J.A. 2127. It described Sheets' system "for providing clock control signals to an external clock" as "unrelated" to the claimed invention. J.A. 2117. Conversely, it stated that in the '336 patent, "[n]o command input is necessary to change the clock frequency." J.A. 2127. It argued its claims did not "rely upon [the] provision of frequency control information to an external clock" taught in Sheets because

all claimed components were located on the same substrate. J.A. 2117. By placing all components on the same substrate, it "obviate[d]" the need for "the type of frequency control information described by Sheets." *Id.*

None of these statements disclaim an entire oscillator receiving a command input for any purpose. Every time the patentee mentioned a "control signal" or "command input," it did so only in the context of using a command input to modify the frequency of the CPU clock. This understanding is consistent with the patentee's characterization of the benefits of its invention. It argued that by placing the CPU and CPU clock on the same silicon substrate, the frequencies of both "automatically vary together." J.A. 2094. This eliminates the need for a command input to change clock frequency. As the patentee explained, "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." *Id.*

We hold that an "entire oscillator" is one "that does not require a command input to change the clock frequency."

III. CONCLUSION

We hold that "an entire oscillator disposed upon said integrated circuit substrate" is "an oscillator located entirely on the same semiconductor substrate as the central processing unit that does not require a command input to change the clock frequency and whose frequency is not fixed by any external crystal." Although this minor modification to the district court's construction likely does not affect the outcome in this case, because the parties stipulated to non-infringement

under the district court's construction, the proper course of action is for us to vacate and remand. We vacate the district court's construction and remand for further proceedings.

VACATED AND REMANDED

COSTS

No costs on this appeal.

FINAL JUDGMENT OF THE DISTRICT COURT (NOVEMBER 13, 2015)

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)

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)

Before: Vince CHHABRIA, United States District Judge

Based upon this Court's construction of the term "an entire oscillator disposed upon said integrated circuit substrate" as "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" in U.S. Patent No. 5,809,336 (the " '336 patent") pursuant to the Claim Construction Report and Recommendation, dated September 22, 2015, and this Court's Order Adopting Magistrate Judge's Report and Recommendation, dated November 9, 2015, Plaintiffs Technology Properties Limited LLC, Phoenix Digital Solutions LLC, and Patriot Scientific Corporation (collectively, "Plaintiffs") and Defendants Huawei Technologies Co., Ltd., Huawei Device Co., Ltd., Huawei Device USA, Inc., Futurewei Technologies, Inc., Huawei Technologies USA, Inc., ZTE Corporation, ZTE (USA) Inc., Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., LG Electronics, Inc., LG Electronics U.S.A., Inc., Nintendo Co., Ltd., and Nintendo of America, Inc. (collectively, "Defendants") (together, the "Parties") have stipulated that all Defendants are entitled to a judgment of non-infringement as a matter of law as to all of Plaintiffs' asserted claims of the '336 patent in the above-titled and numbered civil cases (collectively, "this Action").

Accordingly, the Court enters Judgment as follows:

Judgment is entered against Plaintiffs and for Defendants as to Plaintiffs' claims for patent infringement with respect to the '336 patent, subject to the parties' right to appeal.

Subject to the parties' right to appeal, the Court further enters judgment for Defendants and against Plaintiffs on Defendants' respective counterclaims seeking declaratory judgment of non-infringement and Defendants' respective affirmative defenses of non-infringement, and declares the '336 patent not infringed by Defendants. Plaintiffs shall take nothing from Defendants with respect to the asserted claims of the '336 patent.

All other claims, counterclaims, defenses, or other matters which have been asserted, including Defendants' counterclaims of patent invalidity, are dismissed without prejudice.

Each party shall bear its own costs and attorneys' fees.

IT IS SO ORDERED.

/s/ Vince Chhabria
United States District Judge

Dated: November 13, 2015

ORDER ADOPTING MAGISTRATE JUDGE'S REPORT AND RECOMMENDATION (NOVEMBER 9, 2015)

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

TECHNOLOGY PROPERTIES LIMITED LLC, ET AL.,

Plaintiffs,

v.

HUAWEI TECHNOLOGIES CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03865-VC
Re: Dkt. Nos. 98, 105

TECHNOLOGY PROPERTIES LIMITED LLC, ET AL.,

Plaintiffs,

v.

ZTE CORPORATION, ET AL.,

Defendants.

Case No. 12-cv-03876-VC
Re: Dkt. Nos. 109, 112

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

SAMSUNG ELECTRONICS CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03877-VC
Re: Dkt. Nos. 104, 107

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

LG ELECTRONICS, INC., ET AL.,

Defendants.

Case No. 12-cv-03880-VC
Re: Dkt. Nos. 117, 120

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

NINTENDO CO., LTD., ET AL.,

Defendants.

Case No. 12-cv-03881-VC
Re: Dkt. Nos. 106, 109

Before: Vince CHHABRIA, United States District Judge

The Court agrees with the plaintiffs that de novo review of the Magistrate Judge's Report and Recommendation is warranted. Having reviewed the Report and Recommendation de novo, the Court adopts it without modification.

IT IS SO ORDERED.

/s/ Vince Chhabria
United States District Judge

Dated: November 9, 2015

MAGISTRATE REPORT AND RECOMMENDATION ON CLAIM CONSTRUCTION (SEPTEMBER 22, 2015)

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

TECHNOLOGY PROPERTIES LIMITED LLC, ET AL.,

Plaintiffs,

v.

HUAWEI TECHNOLOGIES CO., LTD., ET AL.,

Defendants.

Case No. 3:12-cv-03865-VC

TECHNOLOGY PROPERTIES LIMITED LLC, ET AL.,

Plaintiffs,

v.

ZTE CORPORATION, ET AL.,

Defendants.

Case No. 3:12-cv-03876-VC

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

SAMSUNG ELECTRONICS CO., LTD., ET AL.,

Defendants.

Case No. 3:12-cv-03877-VC

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

LG ELECTRONICS, INC., ET AL.,

Defendants.

Case No. 3:12-cv-03880-VC

TECHNOLOGY PROPERTIES
LIMITED LLC, ET AL.,

Plaintiffs,

v.

NINTENDO CO., LTD., ET AL.,

Defendants.

Case No. 3:12-cv-03881-VC

Before: Paul S. GREWAL,
United States Magistrate Judge

The parties to this patent infringement suit dispute the construction of just one claim term in U.S. Patent No. 5,809,336: "an entire oscillator disposed upon said integrated circuit substrate."[1] At issue is the impact of various statements made by the patent applicant to the examiner during the patent's prosecution. Because these statements would be understood by one of ordinary skill in the art as disclaiming certain scope of the disputed "entire oscillator" term, the court RECOMMENDS construction of the term to reflect this disclaimer, as follows: "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."

I.

Consistent with the Supreme Court's admonition in 1886 that a patent claim not be "a nose of wax, which may be turned and twisted in any direction,"[2]

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1 *See* Docket No. 89 at 6-7.

2 *White v. Dunbar*, 119 U.S. 47, 51 (1886).

the Federal Circuit has long held that a claim term must be understood as limited if the applicant argued as much during prosecution in order to overcome prior art.[3] "'[T]he 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.'"[4]

Plaintiff Technology Property Limited and Patriot Scientific brought these patent infringement suits for infringement of three patents: U.S. Patent Nos. 5,440,749, 5,530,890 and 5,809,336. Only the '336 patents remains at issue; the others were dismissed by stipulation.[5] The '336 patent, titled "High Performance Microprocessor Having Variable Speed System Clock," was derived along with the others from a single patent application that was subject to nothing less than a ten-way restriction requirement. The result is that the '336 specification includes

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[3] *See, e.g.*, *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1576 (Fed. Cir. 1995); *see also Rheox, Inc. v. Entact, Inc.*, 276 F.3d 1319, 1325 (Fed. Cir. 2002) ("Explicit 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.'") (quoting *Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, 1347 (Fed. Cir. 1998)).

[4] *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1289 (Fed. Cir. 2009) (quoting *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc)).

[5] *See* Docket No. 86; all docket references are to Case No. 3:12-cv-03865-VC.

much discussion that is irrelevant to that which the '336 patent specifically claims.[6]

The '336 patent claims an invention that allows the frequency of a central processing unit, the brains of any computing device, to fluctuate based on local conditions. Traditional microprocessors use off-chip, fixed frequency clocks to regulate the CPU's frequency.[7] One result is that the clock needs to be set lower than the CPU's maximum possible frequency to ensure proper operation under worst-case conditions. The '336 patent solves this problem by placing a ring oscillator on the same silicon substrate as the CPU to act as the CPU's clock. Because the ring oscillator is on the same silicon substrate and is made of the same components as the CPU, it is subject to the same environmental conditions and thus will allow the CPU to operate at higher rates during good conditions and lower rates during bad. As the specification explains, the microprocessor may "operate over wide temperature ranges, wide voltage swings, and wide variations in semiconductor processing" that "all affect transistor gate propagation delays."[8] Because other devices with which the microprocessor communicates, both on-chip and off-chip, cannot tolerate a variable speed clock, a second, conventional "crystal clock" is separately connected to the input/output interface.[9]

During the '336 patent's prosecution, the applicants made a variety of arguments to the examiner

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6 *See, e.g.*, Docket No. 28-3, Ex. C at 3:27-35, 16:43-17:37.

7 *See* Docket No. 28-3, Ex. C at 16:48-50, 17:12-13.

8 Docket No. 28-3, Ex. C at 16:44-48.

9 *See* Docket No. 28-3, Ex. C at 17:14-34, Fig. 17.

to overcome two key prior art references: U.S. Patent No. 4,503,500 ("Magar") and U.S. Patent No. 4,670,837 ("Sheets"). With respect to Magar, the examiner initially rejected the claims after noting that certain circuitry in Magar was fabricated on the same microprocessor substrate as the CPU, as required by the claims. The applicants then attempted to distinguish Magar by emphasizing that the clock disclosed in Magar was fixed by a crystal that was external to the microprocessor, unlike their on-chip variable speed clock:

> [O]ne 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.[10]

In the same amendment, the applicants also argued that the Magar clock could not practice the claimed invention because of its reliance on a crystal, which by its nature cannot vary its oscillation frequency:

> [C]rystal oscillators have never, to Applicants' knowledge, been fabricated on a single silicon

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[10] Docket No. 90-7, Ex. D at 3-4.

> 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.[11]

The PTO nonetheless issued a second rejection based on Magar, and the applicants responded by emphasizing again that the claimed invention did not rely on an external crystal's fixed frequency to set the clock's frequency rate:

> The essential difference is that the frequency or rate of the . . . signals is determined by the processing and/or operating parameters of the integrated circuit containing the . . . circuit, while the frequency or rate of the . . . signals depicted in Magar . . . are determined by the fixed frequency of the external crystal.[12]

The applicants also disclaimed the use of an external crystal to cause clock signal oscillation:

> Magar's clock generator relies on an exter-

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[11] *Id.* at 4.

[12] *Id.* at 4.

> nal crystal connected to terminals X1 and X2 to oscillate. . . . 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.[13]

The examiner similarly issued an initial rejection in view of Sheets. In response, the applicants distinguished their "present invention" from microprocessors that rely on frequency control information from an external source:

> 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 micro-

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[13] *Id.* at 3.

> processor/clock system of the present invention.[14]

Because the applicants referred to the "present invention" in this statement, their disclaimer applies to all claims.[15]

But that disclaimer, like the prior disclaimers, could not secure allowance. In response to a subsequent rejection, the applicants went even further and disclaimed the use of controlled inputs altogether, regardless whether the control 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.[16]

Thus, according to applicants, controlling the on-chip oscillator's speed using a command signal "does not give the claimed subject matter."[17] 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:

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[14] Docket No. 90-9, Ex. F at 8.

[15] *See, e.g., Ballard Med. Prods. v. Allegiance Healthcare Corp.*, 268 F.3d 1352, 1360-62 (Fed. Cir. 2001).

[16] Docket No. 90-10, Ex. G at 4.

[17] *Id.*

> 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.[18]

After overcoming these and other objections by the examiner, the '336 patent issued on September 15, 1998. The patent has been construed in three previous litigations, including one before the undersigned that resulted in a nine-day trial. In the Eastern District of Texas, Judge Ward construed the "entire ring oscillator" claim term in claim 1 to preclude reliance on either a control signal or an external crystal/clock generator to generate a clock signal.[19] In reaching this conclusion, Judge Ward explained: "The Court agrees with the defendants that the applicant disclaimed the use of an input control signal and an external crystal/clock generator to generate a clock signal."[20]

Similarly, in a United States International Trade Commission investigation, Judge Gildea construed "entire oscillator" as precluding reliance on either a control signal or an external crystal/clock generator

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[18] Docket No. 90-7, Ex. D at 5.

[19] *See* Docket No. 90-15, Ex. L at 12.

[20] *Id.*

to generate a clock signal.[21] Judge Gildea found that Plaintiffs clearly and unambiguously disclaimed any oscillator that relies on a control signal or an external crystal or frequency generator.[22] The Commission affirmed Judge Gildea's construction.[23]

Likewise, this court construed "ring oscillator" as "an oscillator having a multiple, odd number of inversions arranged in a loop, wherein the oscillator is variable based on the temperature, voltage and process parameters in the environment,"[24] and instructed the jury that the term "entire oscillator" excludes any external clock used to generate the CPU clock signal.[25]

The parties to this litigation agree that the disputed term must be limited as "an [oscillator] that is located entirely on the same semiconductor substrate as the [central processing unit]."[26] Where they disagree is whether the term should further be limited to read as "an [oscillator] that is located entirely on the same

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[21] *See* Docket No. 90-16, Ex. M at 40-41; Docket No. 90-17, Ex. N at 16-25.

[22] *See* Docket No. 90-20, Ex. Q at 39-40 (finding that "the essential point made by the applicants in seeking to gain acceptance" of their claims, and their "unqualified statements in distinguishing" the prior art, constituted a "clear disavowal" of claim scope).

[23] *See* Docket No. 90-17, Ex. N at 16-25.

[24] *See Acer, Inc. v. Tech. Properties Ltd.*, No. 5:08-CV-00877 PSG, 2013 WL 4515545, at *5 (N.D. Cal. Aug. 21, 2013).

[25] *See* Docket No. 90-13, Ex. J at 26; Docket No. 90-14, Ex. K at 2; *see also* Docket No. 90-18, Ex. O at 11, and n.24.

[26] Docket No. 89 at 7.

semiconductor substrate as the [central processing unit] and does not rely on a control signal or an external crystal/clock generator to cause clock signal oscillation or control clock signal frequency."[27]

II.

This court has jurisdiction under 28 U.S.C. §§ 1331 and 1338. The presiding judge referred all pretrial matters to the undersigned pursuant to Fed. R. Civ. P. 72(a).[28]

"To construe a claim term, the trial court must determine the meaning of any disputed words from the perspective of one of ordinary skill in the pertinent art at the time of filing."[29] This requires a careful review of the intrinsic record comprised of the claim terms, written description and prosecution history of the patent.[30]

While claim terms "are generally given their ordinary and customary meaning,"[31] the claims them-

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[27] *Id.*

[28] *See* Docket No. 17.

[29] *Chamberlain Group, Inc. v. Lear Corp.*, 516 F.3d 1331, 1335 (Fed. Cir. 2008).

[30] *See id.* ("To construe a claim term, the trial court must determine the meaning of any disputed words from the perspective of one of ordinary skill in the pertinent art at the time of filing. Intrinsic evidence, that is the claims, written description, and the prosecution history of the patent, is a more reliable guide to the meaning of a claim term than are extrinsic sources like technical dictionaries, treatises, and expert testimony.") (citing *Phillips*, 415 F.3d at 1312).

[31] *Phillips*, 415 F.3d at 1312 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)).

selves and the context in which the terms appear "provide substantial guidance as to the meaning of particular claim terms."[32] Indeed, a patent's specification "is always highly relevant to the claim construction analysis."[33] Claims "must be read in view of the specification, of which they are part."[34]

Although the patent's prosecution history "lacks the clarity of the specification and thus is less useful for claim construction purposes," it "can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be."[35] The court also has the discretion to consider extrinsic evidence, including dictionaries, learned treatises and testimony from experts and inventors.[36] Such evidence, however, is "less significant than the intrinsic record in determining the legally operative meaning of claim language."[37] No

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[32] *Phillips*, 415 F.3d at 1314

[33] *Phillips*, 415 F.3d at 1312-15.

[34] *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995); *see also Ultimax Cement Mfg. Corp v. CTS Cement Mfg. Corp.*, 587 F. 3d 1339, 1347 (Fed. Cir. 2009).

[35] *Phillips*, 415 F.3d at 1317 (internal quotations omitted).

[36] *See id.* ("Although we have emphasized the importance of intrinsic evidence in claim construction, we have also authorized district courts to rely on extrinsic evidence, which 'consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.'") (quoting *Markman*, 52 F.3d at 980).

[37] *Phillips*, 415 F.3d at 1317 (citing *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 862 (Fed. Cir. 2004)) (internal quotations

extrinsic evidence is necessary to resolve the dispute here, however, because the intrinsic record is dispositive that the applicant disclaimed certain claim scope to convince the examiner to issue the patent.

III.

"[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."[38] Whether necessary or not to get the examiner to avoid Magar and Sheets, the applicant here surrendered subject matter that the definition of the "entire oscillator" term must account, albeit in language different than that proposed by either side.

To avoid Magar, the applicants surrendered any oscillator that like Magar's is fixed by an off-chip crystal. Over and over again, the applicants insisted that its claims did not read on Magar because of this distinction. Whether styled by the applicants as an "essential difference" or "not at all like the clock on which the claims are based,"[39] Magar is distinct from the invention because it fixes the frequency of the CPU with a crystal oscillator that is not on the same silicon substrate. Having sold the Patent Office on this distinction, and told the world the same in the prosecution history, the applicants understood that

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and additional citations omitted).

[38] *Norian Corp. v. Stryker Corp.*, 432 F.3d 1356, 1361 (Fed. Cir. 2005).

[39] Docket No. 90-8, Ex. E at 3, 4.

they could not later claim anything else. The Federal Circuit has taught this lesson over and over again.[40]

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[40] *See, e.g.*, *Southwall*, 54 F.3d at 1576 ("Claims may not be construed one way in order to obtain their allowance and in a different way against accused infringers."); *Rheox*, 276 F.3d at 1325 ("Explicit 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.'"); *Gillespie v. Dywidag Sys. Int'l, USA*, 501 F.3d 1285, 1291 (Fed. Cir. 2007) ("The patentee is held to what he declares during the prosecution of his patent."); *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 coverage of laptops" and, thus, affirming. the trial court's construction of the portable computer limitation); *Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1372-75 (Fed. Cir. 2005) ("Where an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of otherwise broad claim language."); *see also Am. Piledriving Equip. v. Geoquip, Inc.*, 637 F. 3d 1324, 1336 (Fed. Cir. 2011) ("[A]n applicant's argument that a prior art reference is distinguishable on a particular ground can serve as a disclaimer of claim scope even if the applicant distinguishes the reference on other grounds as well."); *Chimie v. PPG Indus., Inc.*, 402 F.3d 1371, 1384 (Fed. Cir. 2005) ("The purpose of consulting the prosecution history in construing a claim is to 'exclude any interpretation that was disclaimed during prosecution.'"; "Accordingly, 'where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender.'") (citations omitted); *Microsoft Corp. v. Multi-Tech. Sys., Inc.*, 357 F.3d 1340, 1349 (Fed. Cir. 2004) (a court "cannot construe the claims to cover subject matter broader than that which the patentee itself regarded as comprising its invention and represented to the PTO"); *Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 993-96 (Fed. Cir. 2003) (rejecting patentee's attempt to narrow the scope of disclaimer,

The song remains much the same regarding Sheets. The applicants distinguished Sheets repeatedly on the ground that Sheets requires control signals, frequency control information or command inputs. In contrast, they characterize the invention upon relying upon or requiring any such signals, information or inputs.[41] Because applicants described this distinction as no less than "crucial," and applicable to the "present invention," their disclaimer applies to all claims.[42]

Plaintiffs principally argue that the distinctions drawn from Magar and Sheets are already expressly included in the patent claims themselves. It is true that the "on-chip/off-chip" distinction and the invention's variability depending on PVT are reflected in other limitations. But those other limitations do not get at the full range of distinctions drawn, especially the claimed invention's oscillator frequency not being fixed by any crystal off-chip and the oscillator not needing any control inputs. The Federal Circuit has been clear that claim construction must reflect all disclaimers, not merely a subset.[43]

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even though the examiner did not rely on the disclaimer to issue the claims); *N. Am. Container Inc. v. Plastipak Packaging Inc.*, 415 F.3d 1335, 1345-46 (Fed. Cir. 2005) (holding that "the applicant, through argument [that the prior-art inner walls are 'slightly concave'] during the prosecution, disclaimed inner walls of the base portion having any concavity. . . . [a]lthough the inner walls disclosed in the [prior art] may be viewed as entirely concave").

[41] *See* Docket No. 90-9, Ex. F at 8; *see also* Docket No. 90-10, Ex. G at 4.

[42] *See, e.g., Ballard Med. Prods. v. Allegiance Healthcare Corp.*, 268 F.3d 1352, 1360-62 (Fed. Cir. 2001).

[43] *See Krippelz v. Ford Motor Co.*, 667 F.3d 1261, 1267 (Fed. Cir.

The undersigned appreciates that the construction recommended differs from the constructions adopted in the Eastern District of Texas, the International Trade Commission and by the undersigned as presiding judge in *HTC*. It also must be noted that neither party urged this particular language. But putting aside any notion that this court is bound in this case by any prior construction, the recommended construction is consistent with the fundamental meaning of those earlier constructions. After multiple rounds of briefing by the parties and a lengthy hearing, the undersigned is convinced that the particular language urged recommended here best captures what actually happened at the patent office. In the universe of claim construction, that directive is ultimate prime.

SO ORDERED.

/s/ Paul S. Grewal
United States Magistrate Judge

Dated: September 22, 2015

2012); *Am. Piledriving Equip. v. Geoquip, Inc.*, 637 F.3d 1324, 1336 (Fed. Cir. 2011); *Elkay v. Mgf. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 979 (Fed. Cir. 1999).

ORDER OF THE FEDERAL CIRCUIT DENYING PETITION FOR REHEARING EN BANC (APRIL 10, 2019)

UNITED STATED 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 ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
LG ELECTRONICS, INC., LG ELECTRONICS U.S.A., INC., NINTENDO CO., LTD.,
NINTENDO OF AMERICA, INC.,

Defendants-Appellees.

2018-1439, 2018-1440, 2018-1441,
2018-1444, 2018-1445

Appeals from the United States District Court
for the Northern District of California in
Nos. 3:12-cv-03865-VC, 3:12-cv-03876-VC,

3:12-cv-03877-VC, 3:12-cv-03880-VC,
3:12-cv-03881-VC, Judge Vince Chhabria.

Before: PROST, Chief Judge., NEWMAN, LOURIE, DYK, MOORE, O'MALLEY, REYNA, WALLACH, TARANTO, CHEN, HUGHES, and STOLL, Circuit Judges.

PER CURIAM

Appellants Patriot Scientific Corporation, Phoenix Digital Solution LLC and Technology Properties Limited LLC filed a petition for rehearing en banc. The petition was first referred as a petition for rehearing to the panel that heard the appeal, and thereafter the petition for rehearing en banc was referred to the circuit judges who are in regular active service.

Upon consideration thereof

It Is Ordered That:

The Petition for panel rehearing is denied.

The Petition for rehearing en banc is denied.

The mandate of the court will issue on April 17, 2019.

For the Court

/s/ Peter R. Marksteiner
Clerk of Court

Date: April 10, 2019

CONSTITUTIONAL AND STATUTORY PROVISIONS

28 U.S.C. § 1331.—Federal Question

The district courts shall have original jurisdiction of all civil actions arising under the Constitution, laws, or treaties of the United States.

28 U.S.C. § 1338.—Patents, plant variety protection, copyrights, mask works, designs, trademarks, and unfair competition

(a) The district courts shall have original jurisdiction of any civil action arising under any Act of Congress relating to patents, plant variety protection, copyrights and trademarks. No State court shall have jurisdiction over any claim for relief arising under any Act of Congress relating to patents, plant variety protection, or copyrights. For purposes of this subsection, the term "State" includes any State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the United States Virgin Islands, American Samoa, Guam, and the Northern Mariana Islands.

[* * *]

35 U.S.C. § 101.—Inventions Patentable

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. § 112.—Specification

(a) In General.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

(b) Conclusion.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

[* * *]

35 U.S.C. § 131.—Examination of Application

The Director shall cause an examination to be made of the application and the alleged new invention; and if on such examination it appears that the applicant is entitled to a patent under the law, the Director shall issue a patent therefor.

[* * *]

35 U.S.C. § 132.—Notice of Rejection; Reexamination

(a)Whenever, on examination, any claim for a patent is rejected, or any objection or requirement made, the Director shall notify the applicant thereof, stating the reasons for such rejection, or objection or requirement, together with such information and references as may be useful in

judging of the propriety of continuing the prosecution of his application; and if after receiving such notice, the applicant persists in his claim for a patent, with or without amendment, the application shall be reexamined. No amendment shall introduce new matter into the disclosure of the invention.

35 U.S.C. § 131.—Examination of Application

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(b) The Director shall prescribe regulations to provide for the continued examination of applications for patent at the request of the applicant. The Director may establish appropriate fees for such continued examination and shall provide a

50 percent reduction in such fees for small entities that qualify for reduced fees under section 41(h)(1).

35 U.S.C. § 134.—
Appeal to the Patent Trial and Appeal Board

(a) Patent Applicant.—An applicant for a patent, any of whose claims has been twice rejected, may appeal from the decision of the primary examiner to the Patent Trial and Appeal Board, having once paid the fee for such appeal.

(b) Patent Owner.—A patent owner in a reexamination may appeal from the final rejection of any claim by the primary examiner to the Patent Trial and Appeal Board, having once paid the fee for such appeal.

35 U.S.C. § 141.—
Appeal to Court of Appeals for the Federal Circuit

(a) Examinations.—An applicant who is dissatisfied with the final decision in an appeal to the Patent Trial and Appeal Board under section 134(a) may appeal the Board's decision to the United States Court of Appeals for the Federal Circuit. By filing such an appeal, the applicant waives his or her right to proceed under section 145.

(b) Reexaminations.—A patent owner who is dissatisfied with the final decision in an appeal of a reexamination to the Patent Trial and Appeal Board under section 134(b) may appeal the Board's decision only to the United States Court of Appeals for the Federal Circuit.

(c) Post-Grant and Inter Partes Reviews.—A party to an inter partes review or a post-grant review who is dissatisfied with the final written decision of the Patent Trial and Appeal Board under section 318(a) or 328(a) (as the case may be) may appeal the Board's decision only to the United States Court of Appeals for the Federal Circuit.

[* * *]

35 U.S.C. § 145.—Civil Action to Obtain Patent

An applicant dissatisfied with the decision of the Patent Trial and Appeal Board in an appeal under section 134(a) may, unless appeal has been taken to the United States Court of Appeals for the Federal Circuit, have remedy by civil action against the Director in the United States District Court for the Eastern District of Virginia if commenced within such time after such decision, not less than sixty days, as the Director appoints. The court may adjudge that such applicant is entitled to receive a patent for his invention, as specified in any of his claims involved in the decision of the Patent Trial and Appeal Board, as the facts in the case may appear and such adjudication shall authorize the Director to issue such patent on compliance with the requirements of law. All the expenses of the proceedings shall be paid by the applicant.

35 U.S.C. § 153.—How Issued

Patents shall be issued in the name of the United States of America, under the seal of the Patent and Trademark Office, and shall be signed by the Director or have his signature placed thereon and

shall be recorded in the Patent and Trademark Office.

35 U.S.C. § 282.—Presumption of Validity; Defenses

(a) In General.—A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

(b) Defenses.—The following shall be defenses in any action involving the validity or infringement of a patent and shall be pleaded:

(1) Non-infringement, absence of liability for infringement or unenforceability.

(2) Invalidity of the patent or any claim in suit on any ground specified in part II as a condition for patentability.

(3) Invalidity of the patent or any claim in suit for failure to comply with—

(A) any requirement of section 112, except that the failure to disclose the best mode shall not be a basis on which any claim of a patent may be canceled or held invalid or otherwise unenforceable; or

(B) any requirement of section 251.

(4) Any other fact or act made a defense by this title.

(c) Notice of Actions; Actions During Extension of Patent Term.—In an action involving the validity or infringement of a patent the party asserting invalidity or non-infringement shall give notice in the pleadings or otherwise in writing to the adverse party at least thirty days before the trial, of the country, number, date, and name of the patentee of any patent, the title, date, and page numbers of any publication to be relied upon as anticipation of the patent in suit or, except in actions in the United States Court of Federal Claims, as showing the state of the art, and the name and address of any person who may be relied upon as the prior inventor or as having prior knowledge of or as having previously used or offered for sale the invention of the patent in suit. In the absence of such notice proof of the said matters may not be made at the trial except on such terms as the court requires. Invalidity of the extension of a patent term or any portion thereof under section 154(b) or 156 because of the material failure—

(1) by the applicant for the extension, or

(2) by the Director, to comply with the requirements of such section shall be a defense in any action involving the infringement of a patent during the period of the extension of its term and shall be pleaded. A due diligence determination under section 156(d)(2) is not subject to review in such an action.

35 U.S.C. § 301.—
Citation of Prior Art and Written Statements

(a) In General.—Any person at any time may cite to the Office in writing—

(1) prior art consisting of patents or printed publications which that person believes to have a bearing on the patentability of any claim of a particular patent; or

(2) statements of the patent owner filed in a proceeding before a Federal court or the Office in which the patent owner took a position on the scope of any claim of a particular patent.

(b) Official File.—If the person citing prior art or written statements pursuant to subsection (a) explains in writing the pertinence and manner of applying the prior art or written statements to at least 1 claim of the patent, the citation of the prior art or written statements and the explanation thereof shall become a part of the official file of the patent.

(c) Additional Information.—A party that submits a written statement pursuant to subsection (a)(2) shall include any other documents, pleadings, or evidence from the proceeding in which the statement was filed that addresses the written statement.

(d) Limitations.—A written statement submitted pursuant to subsection (a)(2), and additional information submitted pursuant to subsection (c), shall not be considered by the Office for any purpose other than to determine the proper mean-

ing of a patent claim in a proceeding that is ordered or instituted pursuant to section 304, 314, or 324. If any such written statement or additional information is subject to an applicable protective order, such statement or information shall be redacted to exclude information that is subject to that order.

(e) Confidentiality.—Upon the written request of the person citing prior art or written statements pursuant to subsection (a), that person's identity shall be excluded from the patent file and kept confidential.

35 U.S.C. § 302.—Request for Reexamination

Any person at any time may file a request for reexamination by the Office of any claim of a patent on the basis of any prior art cited under the provisions of section 301. The request must be in writing and must be accompanied by payment of a reexamination fee established by the Director pursuant to the provisions of section 41. The request must set forth the pertinency and manner of applying cited prior art to every claim for which reexamination is requested. Unless the requesting person is the owner of the patent, the Director promptly will send a copy of the request to the owner of record of the patent.

35 U.S.C. § 303.—Determination of issue by Director

(a) Within three months following the filing of a request for reexamination under the provisions of section 302, the Director will determine whether a substantial new question of patentability affecting any claim of the patent concerned is

raised by the request, with or without consideration of other patents or printed publications. On his own initiative, and any time, the Director may determine whether a substantial new question of patentability is raised by patents and publications discovered by him or cited under the provisions of section 301 or 302. The existence of a substantial new question of patentability is not precluded by the fact that a patent or printed publication was previously cited by or to the Office or considered by the Office.

[* * *]

(c) A determination by the Director pursuant to subsection (a) of this section that no substantial new question of patentability has been raised will be final and nonappealable. Upon such a determination, the Director may refund a portion of the reexamination fee required under section 302.

35 U.S.C. § 304. Reexamination Order by Director

If, in a determination made under the provisions of subsection 303(a), the Director finds that a substantial new question of patentability affecting any claim of a patent is raised, the determination will include an order for reexamination of the patent for resolution of the question. The patent owner will be given a reasonable period, not less than two months from the date a copy of the determination is given or mailed to him, within which he may file a statement on such question, including any amendment to his patent and new claim or claims he may wish to propose, for consideration in the reexamination. If the patent owner files such a statement, he promptly will

serve a copy of it on the person who has requested reexamination under the provisions of section 302. Within a period of two months from the date of service, that person may file and have considered in the reexamination a reply to any statement filed by the patent owner. That person promptly will serve on the patent owner a copy of any reply filed.

35 U.S.C. § 305.—
Conduct of Reexamination Proceedings

After the times for filing the statement and reply provided for by section 304 have expired, reexamination will be conducted according to the procedures established for initial examination under the provisions of sections 132 and 133. In any reexamination proceeding under this chapter, the patent owner will be permitted to propose any amendment to his patent and a new claim or claims thereto, in order to distinguish the invention as claimed from the prior art cited under the provisions of section 301, or in response to a decision adverse to the patentability of a claim of a patent. No proposed amended or new claim enlarging the scope of a claim of the patent will be permitted in a reexamination proceeding under this chapter. All reexamination proceedings under this section, including any appeal to the Patent Trial and Appeal Board, will be conducted with special dispatch within the Office.

35 U.S.C. § 306.—Appeal

The patent owner involved in a reexamination proceeding under this chapter may appeal under the provisions of section 134, and may seek court

review under the provisions of sections 141 to 144, with respect to any decision adverse to the patentability of any original or proposed amended or new claim of the patent.

Fed. Cir. R. 36.

Entry of Judgment—Judgment of Affirmance Without Opinion

The court may enter a judgment of affirmance without opinion, citing this rule, when it determines that any of the following conditions exist and an opinion would have no precedential value:

(a) the judgment, decision, or order of the trial court appealed from is based on findings that are not clearly erroneous;

(b) the evidence supporting the jury's verdict is sufficient;

(c) the record supports summary judgment, directed verdict, or judgment on the pleadings;

(d) the decision of an administrative agency warrants affirmance under the standard of review in the statute authorizing the petition for review; or

(e) a judgment or decision has been entered without an error of law.

The patent owner involved in a reexamination proceeding under this chapter may appeal under the provisions of section

ACTS OF THE TWENTY-FOURTH CONGRESS

TWENTY-FOURTH CONGRESS.
Sess. I. Ch. 357. 1836

CHAP. CCCLVII.—Act to Promote the Progress of Useful Arts, and to Repeal All Acts and Parts of Acts Heretofore Made for That Purpose.(a)

BE IT ENACTED BY THE SENATE AND HOUSE OF REPRESENTATIVES OF THE UNITED STATES OF AMERICA IN CONGRESS ASSEMBLED, That there shall be established and attached to the Department of State, an office to be denominated the Patent Office; the chief officer of which shall be called the Commissioner of Patents, to be appointed by the President, by and with the advice and consent of the Senate, whose duty it shall be, under the direction of the Secretary of State, to superintend, execute, and perform, all such acts and things touching and respecting the granting and issuing of patents for new and useful discoveries, inventions, and improvements, as are herein provided for, or shall hereafter be, by law, directed to be done and performed, and shall have the charge and custody of all the books, records, papers, models, machines, and all other things belonging to said office. And said Commissioner shall receive the same compensation as is allowed by law to the Commissioner of the Indian Department, and shall be entitled to send and receive

(a) For notes of the acts relating to patents for useful inventions, see vol. 1, 109, 318. Notes of the decisions of the courts of the United States on patents for useful inventions, vol. 1, 109, 318.

letters and packages by mail, relating to the business of the office, free of postage.

Sec. 2. AND BE IT FURTHER ENACTED, That there shall be, in said office, an inferior officer, to be appointed by the said principal officer, with the approval of the Secretary of State, to receive an annual salary of seventeen hundred dollars, and to be called the Chief Clerk of the Patent Office; who, in all cases during the necessary absence of the Commissioner, or when the said principal office shall become vacant, shall have the charge and custody of the seal, and of the records, books, papers, machines, models, and all other things belonging to the said office, and shall perform the duties of Commissioner during such vacancy. And the said Commissioner may also, with like approval, appoint an examining clerk, at an annual salary of fifteen hundred dollars; two other clerks at twelve hundred dollars each, one of whom shall be a competent draughtsman; one other clerk at one thousand dollars; a machinist at twelve hundred and fifty dollars; and a messenger at seven hundred dollars. And said Commissioner, clerks, and every other person appointed and employed in said office, shall be disqualified and interdicted from acquiring or taking, except by inheritance, during the period for which they shall hold their appointments, respectively, any right or interest, directly or indirectly, in any patent for an invention or discovery which has been, or may hereafter be, granted.

Sec. 3. AND BE IT FURTHER ENACTED, That the said principal officer, and every other person to be appointed in the said office, shall, before he enters upon the duties of his office or appointment, make oath or affirmation, truly and faithfully to execute

the trust committed to him. And the said Commissioner and the chief clerk shall also, before entering upon their duties, severally give bonds with sureties to the Treasurer of the United States, the former in the sum of ten thousand dollars, and the latter in the sum of five thousand dollars, with condition to render a true and faithful account to him or his successor in office, quarterly, of all moneys which shall be by them respectively received for duties on patents, and for copies of records and drawings, and all other moneys received by virtue of said office.

Sec. 4. AND BE IT FURTHER ENACTED, That the said Commissioner shall cause a seal to be made and provided for the said office, with such device as the President of the United States shall approve; and copies of any records, books, papers, or drawings, belonging to the said office, under the signature of the said Commissioner, or, when the office shall be vacant, under the signature of the chief clerk, with the said seal affixed, shall be competent evidence in all cases in which the original records, books, papers, or drawings, could be evidence. And any person making application therefor, may have certified copies of the records, drawings, and other papers deposited in said office, on paying, for the written copies, the sum of ten cents for every page of one hundred words; and for copies of drawings, the reasonable expense of making the same.

Sec. 5. AND BE IT FURTHER ENACTED, That all patents issued from said office shall be issued in the name of the United States and under the seal of said office, and be signed by the Secretary of State, and countersigned by the Commissioner of the said office,

and shall be recorded, together with the descriptions, specifications, and drawings, in the said office, in books to be kept for that purpose. Every such patent shall contain a short description or title of the invention or discovery, correctly indicating its nature and design, and in its terms grant to the applicant or applicants, his or their heirs, administrators, executors, or assigns, for a term not exceeding fourteen years, the full and exclusive right and liberty of making, using, and vending to others to be used, the said invention or discovery, referring to the specifications for the particulars thereof, a copy of which shall be annexed to the patent, specifying what the patentee claims as his invention or discovery.

Sec. 6. AND BE IT FURTHER ENACTED, That any person or persons having discovered or invented any new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement on any art, machine, manufacture, or composition of matter, not known or used by others before his or their discovery or invention thereof, and not, at the time of his application for a patent, in public use or on sale, with his consent or allowance, as the inventor or discoverer; and shall desire to obtain an exclusive property therein, may make application in writing to the Commissioner of Patents, expressing such desire, and the Commissioner, on due proceedings had, may grant a patent therefor. But before any inventor shall receive a patent for any such new invention or discovery, he shall deliver a written description of his invention or discovery, and of the manner and process of making, constructing, using, and compounding the same, in such full, clear, and exact terms, avoiding unnecessary prolixity, as to enable any person skilled

in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of any machine, he shall fully explain the principle and the several modes in which he has contemplated the application of that principle or character by which it may be distinguished from other inventions; and shall particularly specify and point out the part, improvement, or combination, which he claims as his own invention or discovery. He shall, furthermore, accompany the whole with a drawing, or drawings, and written references, where the nature of the case admits of drawings, or with specimens of ingredients, and of the composition of matter, sufficient in quantity for the purpose of experiment, where the invention or discovery is of a composition of matter; which descriptions and drawings, signed by the inventor and attested by two witnesses, shall be filed in the Patent Office; and he shall moreover furnish a model of his invention, in all cases which admit of a representation by model, of a convenient size to exhibit advantageously its several parts. The applicant shall also make oath or affirmation that he does verily believe that he is the original and first inventor or discoverer of the art, machine, composition, or improvement, for which he solicits a patent, and that he does not know or believe that the same was ever before known or used; and also of what country he is a citizen; which oath or affirmation may be made before any person authorized by law to administer oaths.

Sec. 7. AND BE IT FURTHER ENACTED, That, on the filing of any such application, description, and specification, and the payment of the duty hereinafter provided, the Commissioner shall make or cause to

be made, an examination of the alleged new invention or discovery; and if, on any such examination, it shall not appear to the Commissioner that the same had been invented or discovered by any other person in this country prior to the alleged invention or discovery thereof by the applicant, or that it had been patented or described in any printed publication in this or any foreign country, or had been in public use or on sale with the applicant's consent or allowance prior to the application, if the Commissioner shall deem it to be sufficiently useful and important, it shall be his duty to issue a patent therefor. But whenever, on such examination, it shall appear to the Commissioner that the applicant was not the original and first inventor or discoverer thereof, or that any part of that which is claimed as new had before been invented or discovered, or patented, or described in any printed publication in this or any foreign country, as aforesaid, or that the description is defective and insufficient, he shall notify the applicant thereof, giving him, briefly, ouch information and references as may be useful in judging of the propriety of renewing his application, or of altering his specification to embrace only that part of the invention or discovery which is new. In every such case, if the applicant shall elect to withdraw his application, relinquishing his claim to the model, he shall be entitled to receive back twenty dollars, part of the duty required by this act, on filing a notice in writing of such election in the Patent Office, a copy of which, certified by the Commissioner, shall be a sufficient warrant to the Treasurer for paying back to the said applicant the said sum of twenty dollars. But if the applicant in such case shall persist in his claim for a patent, with or without any alteration of his specification, he shall be required to

make oath or affirmation anew, in manner as aforesaid. And if the specification and claim shall not have been so modified as, in the opinion of the Commissioner, shall entitle the applicant to a patent, he may, on appeal, and upon request in writing, have the decision of a board of examiners, to be composed of three disinterested persons, who shall be appointed for that purpose by the Secretary of State, one of whom at least, to be selected, if practicable and convenient, for his knowledge and skill in the particular art, manufacture, or branch of science to which the alleged invention appertains; who shall be under oath or affirmation for the faithful and impartial performance of the duty imposed upon them by said appointment. Said board shall be furnished with a certificate in writing, of the opinion and decision of the Commissioner, stating the particular grounds of his objection, and the part or parts of the invention which he considers as not entitled to be patented. And the said board shall give reasonable notice to the applicant, as well as to the Commissioner, of the time and place of their meeting, that they may have an opportunity of furnishing them with such facts and evidence as they may deem necessary to a just decision; and it shall be the duty of the Commissioner to furnish to the board of examiners such information as he may possess relative to the matter under their consideration. And on an examination and consideration of the matter by such board, it shall be in their power, or of a majority of them, to reverse the decision of the Commissioner, either in whole or in part, and their opinion being certified to the Commissioner, he shall be governed thereby in the further proceedings to be had on such application. PROVIDED, HOWEVER, That before a board shall be instituted in any such case,

the applicant shall pay to the credit of the Treasury, as provided in the ninth section of this act, the sum of twenty-five dollars, and each of said persons so appointed shall be entitled to receive for his services in each case a sum not exceeding ten dollars, to be determined and paid by the Commissioner out of any moneys in his hands, which shall be in full compensation to the persons who may be so appointed, for their examination and certificate as aforesaid.

Sec. 8. AND BE IT FURTHER ENACTED, That whenever an application shall be made for a patent which, in the opinion of the Commissioner, would interfere with any other patent for which an application may be pending, or with any unexpired patent which shall have been granted, it shall be the duty of the Commissioner to give notice thereof to such applicants, or patentees, as the case may be; and if either shall be dissatisfied with the decision of the Commissioner on the question of priority of right or invention, on a hearing thereof, he may appeal from such decision, on the like terms and conditions as are provided in the preceding section of this act; and the like proceedings shall be had, to determine which or whether either of the applicants is entitled to receive a patent as prayed for. But nothing in this act contained shall be construed to deprive an original and true inventor of the right to a patent for his invention, by reason of his having previously taken out letters patent therefor in a foreign country, and the same having been published, at any time within six months next preceding the filing of his specification and drawings. And whenever the applicant shall request it, the patent shall take date from the time of the filing of the specification and drawings, not however

exceeding six months prior to the actual issuing of the patent; and on like request, and the payment of the duty herein required, by any applicant, his specification and drawings shall be filed in the secret archives of the office until he shall furnish the model and the patent be issued, not exceeding the term of one year, the applicant being entitled to notice of interfering applications.

Sec. 9. AND BE IT FURTHER ENACTED, That before any application for a patent shall he considered by the commissioner as aforesaid, the applicant shall pay into the Treasury of the United States, or into the Patent Office, or into any of the deposit banks to the credit of the Treasury, if he be a citizen of the United States, or an alien, and shall have been resident in the United States for one year next preceding, and shall have made oath of his intention to become a citizen thereof, the sum of thirty dollars; if a subject of the King of Great Britain, the sum of five hundred dollars; and all other persons the sum of three hundred dollars; for which payment duplicate receipts shall be taken, one of which to be filed in the office of the Treasurer. And the moneys received into the Treasury under this act shall constitute a fund for the payment of the salaries of the officers and clerks herein provided for, and all other expenses of the Patent Office, and to be called the patent fund.

Sec. 10. AND BE IT FURTHER ENACTED, That where any person hath made, or shall have made, any new invention, discovery, or improvement, on account of which a patent might by virtue of this act be granted, and such person shall die before any patent shall be granted therefor, the right of applying for and obtaining such patent shall devolve on the executor or

administrator of such person, in trust for the heirs at law of the deceased, in case he shall have died intestate; but if otherwise, then in trust for his devisees, in as full and ample manner, and under the same conditions, limitations, and restrictions, as the same was held, or might have been claimed or enjoyed by such person in his or her lifetime; and when application for a patent shall be made by such legal representatives, the oath or affirmation provided in the sixth section of this act shall be so varied as to be applicable to them.

Sec. 11. AND BE IT FURTHER ENACTED, That every patent shall be assignable in law, either as to the whole interest, or any undivided part thereof, by any instrument in writing ; which assignment, and also every grant and conveyance of the exclusive right under any patent, to make and use, and to grant to others to make and use, the thing patented within and throughout any specified part or portion of the United States, shall be recorded in the Patent Office within three months from the execution thereof, for which the assignee or grantee shall pay to the Commissioner the sum of three dollars.

Sec. 12. AND BE IT FURTHER ENACTED, That any citizen of the United States, or alien who shall have been resident in the United States one year next preceding, and shall have made oath of his intention to become a citizen thereof, who shall have invented any new art, machine, or improvement thereof, and shall desire further time to mature the same, may, on paying to the credit of the Treasury, in mariner as provided in the ninth section of this act, the sum of twenty dollars, file in the Patent Office a caveat, setting forth the design and purpose thereof, and its

principal and distinguishing characteristics, and praying protection of his right till he shall have matured his invention; which sum of twenty dollars, in case the person filing such caveat shall afterwards take out a patent for the invention therein mentioned, shall be considered a part of the sum herein required for the same. And such caveat shall be filed in the confidential archives of the office, and preserved in secrecy. And if application shall be made by any other person within one year from the time of filing such caveat, for a patent of any invention with which it may in any respect interfere, it shall be the duty of the Commissioner to deposit the description, specifications, drawings, and model, in the confidential archives of the office, and to give notice, by snail, to the person filing the caveat, of such application, who shall, within three months after receiving the notice, if he would avail himself of the benefit of his caveat, file his description, specifications, drawings, and model; and if, in the opinion of the Commissioner, the specifications of claim interfere with each other, like proceedings may be had in all respects as are in this act provided in the case of interfering applications. PROVIDED, HOWEVER, That no opinion or decision of any board of examiners, under the provisions of this act, shall preclude any person interested in favor of or against the validity of any patent which has been or may hereafter be granted, from the right to contest the same in any judicial court in any action in which its validity may come in question.

Sec. 13. AND BE IT FURTHER ENACTED, That whenever any patent which has heretofore been granted, or which shall hereafter be granted, shall be inoperative, or invalid, by reason of a defective or insufficient

description or specification, or by reason of the patentee claiming in his specification as his own invention, more than he had or shall have a right to claim as new; if the error has, or shall have arisen by inadvertency, accident, or mistake, and without any fraudulent or deceptive intention, it shall be lawful for the Commissioner, upon the surrender to him of such patent, and the payment of the further duty of fifteen dollars, to cause a new patent to be issued to the said inventor, for the same invention, for the residue of the period then unexpired for which the original patent was granted, in accordance with the patentee's corrected description and specification. And in case of his death, or any Augment by him made of the original patent, a similar right shall vest in his executors, administrators, or assignees. And the patent, so reissued, together with the corrected description and specification, shall have the same effect and operation in law, on the trial of all actions hereafter commenced for causes subsequently accruing, as though the same had been originally filed in such corrected form, before the issuing out of the original patent. And whenever the original patentee shall be desirous of adding the description and specification of any new improvement of the original invention or discovery which shall have been invented or discovered by him subsequent to the date of his patent, he may, like proceedings being had in all respects as in the case of original applications, and on the payment of fifteen dollars, as herein-before provided, have the same annexed to the original description and specification; and the Commissioner shall certify, on the margin of such annexed description and specification, the time of its being annexed and recorded; and the same shall thereafter have the same effect in law, to all intents

and purposes, as though it had been embraced in the original description and specification.

Sec. 14. AND BE IT FURTHER ENACTED, That whenever, in any action for damages for making, using, or selling the thing whereof the exclusive right is secured by any patent heretofore granted, or by any patent which may hereafter be granted, a verdict shall be rendered for the plaintiff in such action, it shall be in the power of the court to render judgment for any sum above the amount found by such verdict as the actual damages sustained by the plaintiff, not exceeding three times the amount thereof, according to the circumstances of the case, with costs ; and such damages may be recovered by action on the case, in any court of competent jurisdiction, to be brought in the name or names of the person or persons interested, whether as patentees, assignees, or as grantees of the exclusive right within and throughout a specified part of the United States.

Sec. 15. AND BE IT FURTHER ENACTED, That the defendant in any such action shall be permitted to plead the general issue, and to give this act and any special matter in evidence, of which notice in writing may have been given to the plaintiff or his attorney, thirty days before trial, tending to prove that the description and specification filed by plaintiff does not contain the whole truth relative to his invention or discovery, or that it contains more than is necessary to produce the described effect; which concealment or addition shall fully appear to have been made for the purpose of deceiving the public, or that the patentee was not the original and first inventor or discoverer of the thing patented, or of a substantial and material part thereof claimed as new, or that it had been

described in some public work anterior to the supposed discovery thereof by the patentee, or had been in public use, or on sale, with the consent and allowance of the patentee before his application for a patent, or that he had surreptitiously or unjustly obtained the patent for that which was in fact invented or discovered by another, who was using reasonable diligence in adapting and perfecting the same; or that the patentee, if an alien at the time the patent was granted, had failed and neglected for the space of eighteen months from the date of the patent, to put and continue on sale to the public, on reasonable terms, the invention or discovery for which the patent issued; in either of which cases judgment shall be rendered for the defendant, with costs. And whenever the defendant relies in his defense on the fact of a previous invention, knowledge, or use of the thing patented, he shall state, in his notice of special matter, the names and places of residence of those whom he intends to prove to have possessed a prior knowledge of the thing, and where the same had been used: PROVIDED, HOWEVER, That whenever it shall satisfactorily appear that the patentee, at the time of making his application for the patent, believed himself to be the first inventor or discoverer of the thing patented, the same shall not be held to be void on account of the invention or discovery or any part thereof having been before known or used in any foreign country, it not appearing that the same or any substantial part thereof had before been patented or described in any printed publication. AND PROVIDED, ALSO, That whenever the plaintiff shall fail to sustain his action on the ground that in his specification of claim is embraced more than that of which he was the first inventor, if it shall appear that the defendant had used or violated any part of

the invention justly and truly specified and claimed as new, it shall be in the power of the court to adjudge and award as to costs as may appear to be just and equitable.

Sec. 16. AND BE IT FARTHER ENACTED, That whenever there shall be two interfering patents, or whenever a patent on application shall have been refused on an adverse decision of a board of examiners, on the ground that the patent applied for would interfere with an unexpired patent previously granted, any person interested in any such patent, either by assignment or otherwise, in the one case, and any such applicant in the other case, may have remedy by bill in equity; and the court having cognizance thereof, on notice to adverse parties and other due proceedings had, may adjudge and declare either the patents void in the whole or in part, or inoperative and invalid in any particular part or portion of the United States, according to the interest which the parties to such suit may possess in the patent or the inventions patented, and may also adjudge that such applicant is entitled, according to the principles and provisions of this act, to have and receive a patent for his invention, as specified in his claim, or for any part thereof, as the fact of priority of right or invention shall in any such case be made to appear. And such adjudication, if it be in favor of the right of such applicant, shall authorize the Commissioner to issue such patent, on his filing a copy of the adjudication, and otherwise complying with the requisitions of this act. PROVIDED, HOWEVER, That no such judgment or adjudication shall affect the rights of any person except the parties to the action and those deriving

title from or under them subsequent to the rendition of such judgment.

Sec. 17. AND BE IT FURTHER ENACTED, That all actions, suits, controversies, and cases arising under any law of the United States, granting or confirming to inventors the exclusive right to their inventions or discoveries, shall be originally cognizable, as well in equity as at law, by the circuit courts of the United States, or any district court having the powers and jurisdiction of a circuit court; which courts shall have power, upon bill in equity filed by any party aggrieved, in any such case, to grant injunctions, according to the course and principles of courts of equity, to prevent the violation of the rights of any inventor as secured to him by any law of the United States, on such terms and conditions as said courts may deem reasonable: PROVIDED, HOWEVER, That from all judgments and decrees, from any such court rendered in the premises, a writ of error or appeal, as the Case may require, shall lie to the Supreme Court of the United States, in the same manner and under the same circumstances as is now provided by law in other judgments and decrees of circuit courts, and in all other cases in which the court shall deem it reasonable to allow the same.

Sec. 18. AND BE IT FURTHER ENACTED, That whenever any patentee of an invention or discovery shall desire an extension of his patent beyond the term of its limitation, he may make application therefor, in writing, to the Commissioner of the Patent Office, setting forth the grounds thereof; and the Commissioner shall, on the applicant's paying the sum of forty dollars to the credit of the Treasury, as in the case of an original application for a patent, cause to be

published, in one or more of the principal newspapers in the city of Washington, and in such other paper or papers as he may deem proper, published in the section of country most interested adversely to the extension of the patent, a notice of such application and of the time and place when and where the same will be considered, that any person may appear and show cause why the extension should not be granted. And the Secretary of State, the Commissioner of the Patent Office, and the Solicitor of the Treasury, shall constitute a board to hear and decide upon the evidence produced before them both for and against the extension, and shall sit for that purpose at the time and place designated in the published notice thereof. The patentee shall furnish to said board a statement, in writing, under oath, of the ascertained value of the invention, and of his receipts and expenditures, sufficiently in detail to exhibit a true and faithful account of loss and profit in any manner accruing to him from and by reason of said invention. And if, upon a hearing of the matter, it shall appear to the full and entire satisfaction of said board, having due regard to the public interest therein, that it is jest and proper that the term of the patent should be extended, by reason of the patentee, without neglect or fault on his part, having failed to obtain, from the use and sale of his invention, a reasonable remuneration for the time, ingenuity, and expense bestowed upon-the same, and the introduction thereof into use, it shall be the duty of the Commissioner to renew and extend the patent, by making a certificate thereon of such extension, for the term of seven years from and after the expiration of the first term ; which certificate, with a certificate of said board of their judgment and opinion as aforesaid, shall be entered on record in the Patent Office; and

thereupon the said patent shall have the same effect in law as though it had been originally granted for the term of twenty-one years. And the benefit of such renewal shall extend to assignees and grantees of the right to use the thing patented, to the extent of their respective interest therein: PROVIDED, HOWEVER, That no extension of a patent shall be granted after the expiration of the term for which it was originally issued.

Sec. 19. AND BE IT FURTHER ENACTED, That there shall be provided for the use of said office, a library of scientific works and periodical publications, both foreign and American, calculated to facilitate the discharge of the duties hereby required of the chief officers therein, to be purchased under the direction of the Committee of the Library of Congress. And the sum of fifteen hundred dollars is hereby appropriated, for that purpose, to he paid out of the patent fund.

Sec. 20. AND BE IT FURTHER ENACTED, That it shall be the duty of the Commissioner to cause to be classified and arranged, in such rooms or galleries as may be provided for that purpose, in suitable cases, when necessary for their preservation, and in such manner as shall be conducive to a beneficial and favorable display thereof, the models and specimens of compositions and of fabrics and other manufactures and works of art, patented or unpatented, which have been, or shall hereafter be deposited in said office. And said rooms or galleries shall be kept open during suitable hours for public inspection.

Sec. 21. And be it further enacted, That all acts and parts of acts heretofore passed on this subject, be, and the same are hereby repealed : Provided', however, That all actions and processes in law or

equity sued out prior to the passage of this act, may be prosecuted to final judgment and execution, in the same manner as though this act had not been passed, excepting and saving the application to any such action, of the provisions of the fourteenth and fifteenth sections of this act, so far as they may be applicable thereto: AND PROVIDED, ALSO, That all applications or petitions for patents, pending at the time of the passage of this act, in cases where the duty has been paid, shall be proceeded with and acted on in the same manner as though filed after the passage hereof.

APPROVED, July 4, 1836.

BRIEF OF PLAINTIFF APPELLANT TECH PROPERTIES LTD, RELEVANT EXCERPTS (MARCH 10, 2016)

IN THE UNITED STATED 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 ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS AMERICA, INC.,
LG ELECTRONICS, INC., LG ELECTRONICS
U.S.A., INC., NINTENDO CO., LTD.,
NINTENDO OF AMERICA, INC.,

Defendants-Appellees.

Appeals from the United States District Court for the Northern District of California in Nos. 3:12-cv-03865-VC, 3:12-cv-03876-VC, 3:12-cv-03877-VC, 3:12-cv-03880-VC, 3:12-cv-03881-VC,
The Honorable Vince Chhabria Judge Presiding.

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

[. . .]

. . . external signal as a reference signal. Appellants, on the other hand, believe that whatever disclaimers were made, they do not exclude all control signals or the use of a reference signal.

F. Claim Construction History

The claims of the '336 Patent have been construed several times as part of the lawsuits in which the '336 Patent was asserted. While other phrases may have also been at issue, the phrase "an entire oscillator disposed upon said integrated circuit substrate" (or some variant thereof found in other claims of the '336 Patent) was always front and center in the various claim construction disputes.[6] Thus, for the better part of a decade, parties have been arguing in various forums whether the term entire oscillator allows for the use of an external crystal or clock generator as a reference signal and what type of control can be exerted over the oscillator.

Questions about the use of an external crystal arise from statements made by the Applicants during the prosecution of the '336 Patent in distinguishing the then pending claims over U.S. Patent No. 4,503,500 ("*Magar*"). Appx 2042-74. Questions regarding what control of the oscillator is permitted arise from

[6] The specific phrase "an entire oscillator disposed upon said integrated circuit substrate" is found in Claims 6 and 13 of the '336 Patent. These claims have both been asserted in the underlying district court litigation.

statements made concerning U.S. Patent No. 4,670,837 ("*Sheets*"). Appx 3496-503. The statements that constitute the alleged disclaimers are found in four responses to various office actions from the patent office. *See* Appx 2090-7 (Response to Office Action (mailed July 3, 1997)), Appx 2099-108 (Response to Office Action (February 6, 1998)), Appx 2110-22 (Response to Office Action (mailed April 11, 1996)), and Appx 2124-38 (Response to Office Action (mailed January 8, 1997)).

Below is a summary of how various courts have construed the entire oscillator term:

Date	June 2007
Court	EDTX
Term	an entire ring oscillator variable speed system clock in said integrated circuit
Construction (disclaimer underlined)	a ring oscillator variable speed system clock that is located entirely on the same semiconductor substrate as the CPU and does not directly rely on a command input control signal or an external crystal/clock generator to generate a clock signal

Date	April 2013
Court	ITC
Term	an entire ring oscillator variable speed system clock in said single integrated circuit
Construction	a ring oscillator variable speed sys-

(disclaimer underlined)	tem clock that is located entirely on the same semiconductor substrate as the central processing unit and <u>does not rely on a control signal or an external crystal/clock generator to generate a clock signal</u>

Date	August 2013
Court	NDCA
Term	ring oscillator
Construction (disclaimer underlined)	an oscillator having a multiple, odd number of inversions arranged in a loop, wherein the oscillator is variable based on the temperature, voltage and process parameters in the environment

Date	September 2015 (the decision under appeal here)
Court	NDCA
Term	an entire oscillator disposed upon said integrated circuit substrate
Construction (disclaimer underlined)	an oscillator located entirely on the same semiconductor substrate as the central processing unit <u>that does not require a control signal and whose frequency is not fixed by any external crystal</u>[7]

[7] The terms "oscillator" and "central processing unit" terms, standing alone, were the subject of constructions that were not

Note that only the present claim construction under appeal broadens the disclaimer beyond crystals that "generate" a clock signal.

In June 2007, a related phrase, "an entire ring oscillator variable speed system clock in said integrated circuit," was construed by the United States District Court for the Eastern District of Texas. Appx 2233-60 (Memorandum and Order, *Technology Properties Ltd. et al. v. Matsushita Elec. Indus. Co., Ltd., et al.*, Case No. 2:05-cv-494 (No. 259) (E.D. Tex., June 15, 2007) (the "Texas Markman Order")). In the Texas proceeding, the court analyzed the intrinsic record presently cited by Appellees in this case and found that the term meant "a ring oscillator variable speed system clock that is located entirely on the same semiconductor substrate as the CPU and does not directly rely on a command input control signal or an external crystal/clock generator to generate a clock signal." Appx 2244 (*Id.* at 12 (emphasis added)). The court in Texas specifically considered (i) whether the prosecution history prohibited the use of a crystal or external clock, or whether the external clock could be used as a reference, and (ii) whether the prosecution history prohibited the use of control signals such as voltage and current control signals, or the more narrow "command input control signals." *Id.* The Texas court found that an external crystal/clock generator could not be used for generating a clock signal, but left open the possible use of an external crystal/clock generator for a reference signal. The Texas Markman Order specifically rejected the prior defendant's proposed construction that the "ring oscillator" could

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disputed by the parties.

not "rely on a control signal or an external crystal/clock generator." Appx 2243-4 (*Id.* at 11-12). Instead, the court adopted a narrower limitation which excluded "direct" reliance on "command input control signals" from the scope of the claim term. *Id.* Lastly, the Texas court construed the term "ring oscillator" to mean "an oscillator having a multiple, odd number of inversions arranged in a loop." *Id.*

In 2012, Judge Ware of the Northern District of California considered the phrase "entire ring oscillator variable speed system clock." Appx 1563-6 (First Claim Construction Order, *HTC Corp. v. Technology Properties Ltd., et al.*, 3:08-cv-882 (No. 364 at 13-16) (N.D. Cal., June 12, 2012))[8] (the "Ware Markman Order"). In this proceeding, HTC, like the prior defendants in Texas, took the position that the "ring oscillator" could not "rely on a control signal or an external crystal/clock generator to generate a clock signal" and that the speed of the "oscillator" was "non-controllable." *See, e.g., id.* and Appx 1588 (Defendants' [TPL's] Opening Claim Construction Brief for the "Top Ten" Terms, *HTC,* No. 339 at 8 (N.D. Cal., December 23, 2011)).

Judge Ware evaluated the parties' respective positions and discussed the plain and ordinary meaning of a ring oscillator. Appx 1563 (Ware Markman Order at 13). Other than to state that "a person of ordinary skill in the art reading the patent would understand that Claim 1 claims a 'single integrated circuit,' fabricated so as to include a 'ring oscillator'", Judge Ware declined to further construe the entire ring

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[8] Subsequent citations to *HTC Corp. v. Technology Properties Ltd., et al.* will be made as "HTC Case."

oscillator variable speed clock term without receiving additional briefing regarding statements made during prosecution. Appx1566 (Ware Markman Order at 16). In other words, the exacting standard for showing disavowal had not been met and the court asked to hear more. Judge Ware ordered the supplemental briefing, subsequently retired, and the HTC Case was transferred to Judge Grewal.

In the supplemental briefing, the parties continued to debate the meaning of the ring oscillator. The supplemental briefing generally covered the disputed elements of ring oscillator rather than the meaning of the word entire. After evaluating the parties' positions and the prosecution history, Judge Grewal construed the ring oscillator term. Appx1606-23 (Claim Construction Order, *HTC* (No. 509) (N.D. Cal., August 21, 2013) (the "HTC Grewal Markman Order")). He held that while the frequency of the ring oscillator is determined by the temperature, voltage, and process, the prosecution history of the Patent did not "impose a prohibition on all types of control." Appx 1615 (*Id.* at 10). Thus, in 2013, Judge Grewal declined to include "non-controllable" in the construction or to prohibit reliance on an external crystal oscillator in the construction of the term.

Meanwhile, at the ITC, an administrative law judge (ALJ) considered the meaning of ring oscillator and entire oscillator in a proceeding involving all of the Appellees to the present case. *See generally*, Appx 1661-743 (Order No. 31, Construing the Terms of the Asserted Claims of the Patent at Issue, ITC Investigation No. 337-TA-853 (April 18, 2013) (the "ITC Markman Order")). In the ITC, the Appellees advocated that the term ring oscillator could "not

rely on a control signal or an external crystal/clock generator to generate a clock signal." Appx 1683 (*Id.* at 20) (emphasis added). As in the HTC Grewal Markman Order, the ITC ultimately held that the ring oscillator need not be "non-controllable" because there was no clear and unmistakable disavowal in the prosecution history. Appx 1704 (*Id.* at 40). The ITC Markman Order further declined to add the temperature, voltage and process limitation because such limitations were already found in the claims. *Id.* The ITC did continue to address the meaning of entire by construing the term an entire ring oscillator variable speed system clock in said single integrated circuit. Here, the ALJ disagreed with Judge Ward's construction. The ITC held that the term meant "a ring oscillator variable speed system clock that is located entirely on the same semiconductor substrate as the central processing unit and does not rely on a control signal or an external crystal/clock generator to generate a clock signal." *Id.* (emphasis added). This construction differed from Judge Ward's prior construction in that it modified the previous prohibition against relying on a "command input control signal" to be a prohibition against relying on a "control signal." The construction also removed the word directly before rely.

After the ITC ruling, HTC (in the Northern District of California HTC Case) moved for summary judgement. Appx1745-70 (Plaintiffs' Motion for Summary Judgment of Non-Infringement, *HTC* (No. 457) (July 16, 2013)). HTC argued that the entire portion of the entire oscillator term meant that there could be no involvement whatsoever of an external crystal in the function of the oscillator. The court denied HTC's motion. Appx 1772-94 (Summary Judgment Order,

HTC (No. 585) (September 17, 2013)). While the court did agree that, as a result of prosecution history, the claims exclude "any external clock used to generate a signal" the court recognized that there was some factual dispute as to whether the clock is generated on the chip and relies on the PLL (and, thus, the external crystal) to merely "buffer or fix" the frequency. Appx 1782 (*Id.* at 11). Judge Grewal called this a "classic factual question that requires a trial to answer." *Id.*

After Judge Grewal entered the HTC Summary Judgment Order, HTC moved on an emergency basis to attempt to again capture additional claim limitations in the jury instructions. Appx 1796-8 (HTC Emergency Motion, *HTC* (No. 590) (September 18, 2013)). Appellants opposed. Appx1800-06 (Defendants' Opposition to Emergency Motion for Addendum to Jury Instructions, *HTC* (No. 596) (September 18, 2013)). Specifically, HTC asked the court to modify the jury instructions to indicate that (1) the entire oscillator term (and its kin) "are not satisfied by an accused system that uses any external clock to generate a signal" and (2) "an accused product can only infringe the '336 Patent if that product contains an on-chip oscillator or clock that is (a) self-generating and (b) does not rely on an input control to determine its frequency." Appx1797 (HTC Emergency Motion at 2). Judge Grewal held that the jury would be instructed that the term entire oscillator and its kin are properly understood to "exclude any external clock used to generate a signal," but once again declined to add a restriction with respect to control of the oscillator. Appx1808-09 (Emergency Motion Order, *HTC* (No. 607) (September 20, 2013)) (emphasis added).

After trial (where there was a finding of infringement of the '336 Patent), Judge Grewal considered a JMOL by HTC which once again touched on the issue of the *entire oscillator*. Appx1811-25 (Order Denying Plaintiffs' Renewed Motion for Entry of Judgment as a Matter of Law, *HTC* (No. 707) (January 21, 2014)). In its order denying HTC's JMOL, the court explained that in considering HTC's emergency motion regarding jury instructions, the court specifically considered HTC's request for additional claim construction and explained that the Emergency Motion Order modified the "external clock to generate a signal" language, while denying the self-generating/input control language. Appx 1818-19 (*Id.* at 8-9). The court's JMOL Order demonstrated the court's acute understanding of how the PLLs involved in the accused HTC products are used to regulate, not generate the ring oscillator's frequency. Appx 1821 (*Id.* at 11).

Finally, in the case from which this appeal is taken, Judge Grewal was again presented with the same issues regarding the entire oscillator term—does an entire oscillator allow for the use of an externally-generated reference signal and can it be controlled. Like HTC, Appellees brought forward the *Sheets* and *Magar* references (discussed in detail below), and presented substantively the same arguments. In a stark reversal from his position on the same issues from 2013, Judge Grewal found that the entire oscillator term is properly construed as "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." Appx 7 (Grewal R&R at 2). This construction was not advanced by any of the parties, but is much

closer to what Appellees proposed than Appellants. Appx 1469 (Patent Local Rule 4-3 Joint Claim Construction and Prehearing Statement, Exhibit B at 6 (Item No. 16) (listing the parties' competing constructions for the entire oscillator term)). Judge Grewal's construction incorporates two important, separate alleged disclaimers. First, the language "does not require a control signal" prohibits any type of control of the oscillator, while the "not fixed by any external crystal" language prohibits the use of an external reference signal. These two disclaimers arise from separate references (*Magar* and *Sheets*) and are discussed below.

SUMMARY OF THE ARGUMENT

The extensive claim construction history of the entire oscillator term exposes the central truth of this case —if there is some disavowal, such disavowal is not clear and unambiguous. To the extent that disclaimer must be included in the construction of the entire oscillator term, then, it must be narrowly crafted to exclude only what the Applicants actually argued to exclude at the patent office.

[. . .]

'336 PATENT FILE HISTORY, EXAMINER INTERVIEW SUMMARY RECORD (MAY 13, 1998)

UNITED STATES DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
Washington, D.C. 20231

Address:
Commissioner of Patents and Trademarks
Washington, D.C. 20231

Serial Number: 08/484/, 918
Filing Date: 06/07/95
First Named Applicant: Moore C
Attorney Docket No.: NANO-001-05U

LM21/0513

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Examiner Eng, D
Art Unit 2784
Paper Number 17

Examiner Interview Summary Record

- All Participants (Applicant, Applicant's Representative, PTO Personnel):

  (1) D. Eng

  (2) W. Higgins

Date of Interview: 4/23/98

- Type:

  Telephone

Agreement was reached with respect to some or all of the claims in question.

- Claims discussed:

  20, 66, 75, 79, 19, 65, 73, 78

- Identification of prior art discussed:

  Magar

- Description of the general nature of what was agreed to if an agreement was reached, or any other comments:

  Proposed amendment of claims 20, 66, 75 and 79 and indicated that the amended claims if rewrite in independent form would be allowable. See applicant's amendment filed 4/24/98

/s/ D. Eng
Examiner's Signature

'336 PATENT FILE HISTORY, SUPPLEMENTAL AMENDMENT (APRIL 24, 1998)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of Charles H. Moore Et Al.
Serial No. 08/484,918
Files: June 7, 1995
For: High Performance Microprocessor Having Variable Speed System Clock
Examiner. D. Eng
Art Unit 2784
Palo Alto, CA 94306

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

This Supplemental Amendment is being submitted in response to a telephone call on April 23, 1998 from the Examiner in the above-identified patent application.

IN THE CLAIMS

Please amend claims 19, 65, 73 and 78 as follows:

19 (Four Times Amended). A microprocessor system, comprising a single integrated circuit including a central processing unit and an entire ring oscillator variable speed system clock in said single integrated circuit and connected to said central processing unit for clocking said central processing unit, said central

processing unit and said ring oscillator variable speed system clock each including a plurality of electronic devices correspondingly constructed of the same process technology with corresponding manufacturing variations, a processing frequency capability of said central processing unit and a speed of said ring oscillator variable speed system clock varying together due to said manufacturing variations and due to at least operating voltage and temperature of said single integrated circuit: an on-chip input/output interface connected to exchange coupling control signals, addresses and data with said central processing unit: and a second clock independent of said ring oscillator variable speed system clock connected to said input/output interface.

65 (Four Times Amended). In a microprocessor integrated circuit, a method for clocking the microprocessor within the integrated circuit, comprising the steps of:

providing an entire ring oscillator system clock constructed of electronic devices within the integrated circuit, said electronic devices having operating characteristics which will, because said entire ring oscillator system clock and said microprocessor are located within the same integrated circuit, vary together with operating characteristics of electronic devices included within the microprocessor, [and]

using the ring oscillator system clock for clocking the microprocessor, said microprocessor operating at a variable processing frequency dependent upon a variable speed of said ring oscillator system clock;

providing an on chip input/output interface for the microprocessor integrated circuit: and clocking

the input/output interface with a second clock independent of the ring oscillator system clock.

73 (Four Times Amended). A microprocessor system comprising:

a central processing unit disposed upon an integrated circuit substrate, said central processing unit operating at a processing frequency and being constructed of a first plurality of electronic devices;

an entire oscillator disposed upon said integrated circuit substrate and connected to said 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;

an on-chip input/output interface, connected between said central processing unit and an external memory bus for facilitating exchanging coupling control signals, addresses and data with said central processing unit; and

an external clock independent of said oscillator connected to said input/output interface wherein said external clock is operative at a frequency independent of a clock frequency of said oscillator.

78 (Three Times Amended). In a microprocessor system including a central processing unit, a method

for clocking said central processing unit comprising the steps of:

providing said central processing unit upon an integrated circuit substrate, said central processing unit being constructed of a first plurality of transistors and being operative at a processing frequency;

providing an entire variable speed clock disposed upon said integrated circuit substrate, said variable speed clock being constructed of a second plurality of transistors; [and]

clocking said central processing unit at a clock rate using said variable speed clock with said central processing unit being clocked by said variable speed clock at a variable frequency dependent upon variation in one or more fabrication or operational parameters associated with said integrated circuit substrate, said processing frequency and said clock rate varying in the same way relative to said variation in said one or more fabrication or operational parameters associated with said integrated circuit substrate;

connecting an on-chip input/output interface between said central processing unit and an external memory bus, and exchanging coupling control signals, addresses and data between said input/output interface and said central processing unit; and

clocking said input/output interface using an external clock is operative at a frequency independent of a clock frequency of said oscillator.

Cancel Claim 20, 66, 75, and 79.

REMARKS

In the April 23, 1998 telephone call, the Examiner indicated that placing the limitations of dependent claims 20, 66, 75 and 79 into their respective parent claims would place the application in condition for allowance Applicants have accepted this proposal by submission of this amendment by facsimile, since adding these changes by Examiner's Amendment would have been cumbersome.

This application is now believed to be in condition for allowance, and allowance is solicited.

Respectfully submitted,

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