IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

MOSAID TECHNOLOGIES INC.,	§	
	§	
Plaintiff,	§	CIVIL ACTION NO. 2:23-cv-00129-JRG-RSP
	§	
v.	§	
	§	
MEDIATEK, INC. *et al.*,	§	
	§	
Defendants.	§	

CLAIM CONSTRUCTION ORDER

On July 30, 2024, the Court held a hearing to determine the proper construction of disputed terms in United States Patent Nos. 7,051,306, 7,945,885, 7,996,811, 8,253,438, 8,854,077, 9,350,349, and 7,224,563. Before the Court is the Opening Claim Construction Brief (Dkt. No. 74) filed by Plaintiff MOSAID Technologies Inc. ("MOSAID"). Also before the Court are the Responsive Claim Construction Brief (Dkt. No. 81) filed by Defendants MediaTek, Inc. and MediaTek USA, Inc. ("MediaTek"), Plaintiff's reply (Dkt. No. 84), the parties' May 9, 2024 Joint Claim Construction and Prehearing Statement (Dkt. No. 64), and the parties' July 16, 2024 Joint Claim Construction Chart (Dkt. No. 85-1).

Having reviewed the arguments made by the parties at the hearing and in their claim construction briefing, having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc); *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

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I. BACKGROUND

Plaintiff alleges infringement of United States Patent Nos. 7,051,306 ("the '306 Patent"), 7,945,885 ("the '885 Patent"), 7,996,811 ("the '811 Patent"), 8,253,438 ("the '438 Patent"), 8,854,077 ("the '077 Patent"), 9,350,349 ("the '349 Patent"), and 7,224,563 ("the '563 Patent"). Dkt. No. 74, Exs. A–G.

Plaintiff submits that "at a very high level, the seven Asserted Patents relate to power management of integrated circuits found in cell phones, tablets, computers, TVs, speakers, and many other electronic devices." Dkt. No. 74 at 3. Plaintiff asserts: "MediaTek manufactures and sells accused integrated circuits that provide all of a system's required components on one piece of silicon (referred to as systems-on-a-chip or 'SoCs'). The accused MediaTek SoCs are incorporated into numerous electronic devices imported into, sold, and used throughout the United States by third parties such as Amazon, Samsung, Sony, Lenovo, LG, Acer, Intel, and numerous others." *Id.* at 2.

The '563 Patent, titled "Method and Device for Circuit Control," issued on May 29, 2007, and bears a priority date of June 20, 2003. Plaintiff submits that "the '563 Patent relates

generally to a system wherein an adaptive appropriate frequency is determined and selected based on a delivered voltage to an integrated circuit." Dkt. No. 74 at 3. The Abstract of the '563 Patent states:

> One disclosed embodiment of the invention is directed to circuit control that comprises sensing a delivered voltage to a portion of an integrated circuit, determining an appropriate frequency for the portion of the integrated circuit, and providing the appropriate frequency to the integrated circuit.

The '306 Patent, titled "Managing Power on Integrated Circuits Using Power Islands," issued on May 23, 2006, and bears a filing date of May 7, 2003. Plaintiff submits that the '306 Patent "generally relates to dynamic power management of integrated circuits." Dkt. No. 74 at 3. The Abstract of the '306 Patent states:

> Systems and methods manage power in an integrated circuit using power islands. The integrated circuit includes a plurality of power islands where power consumption is independently controlled within each of the power islands. A power manager determines a target power level for one of the power islands. The power manager then determines an action to change a consumption power level of the one of the power islands to the target power level. The power manager performs the action to change the consumption power level of the one of the power islands to the target power level.

The '885 Patent and the '811 Patent resulted from continuations of the '306 Patent, and these three patents are sometimes referred to collectively as "the '306 Patent Family."

The '438 Patent, titled "Low Leakage and Data Retention Circuitry," issued on August 28, 2012, and bears an earliest priority date of February 19, 2004. Plaintiff submits that the '438 Patent "relates generally to reducing voltage leakage when a device is in sleep mode." Dkt. No. 74 at 3. The Abstract of the '438 Patent states:

> An integrated circuit includes first circuitry and sleep transistor circuitry. The first circuitry receives input signals and processes the input signals. The first circuitry also retains data in a sleep state that has low leakage. The sleep transistor circuitry is coupled to the first circuitry and receives a sleep signal that has a negative voltage. The sleep circuitry reduces power consumption of the first

> circuitry in the sleep state to have low leakage based on the sleep signal while retaining the data in the first circuitry.

The ’077 Patent and the ’349 Patent resulted from continuations of the ’438 Patent, and these three patents are sometimes referred to collectively as “the ’438 Patent Family.”

The Court previously construed disputed terms in the ’306 Patent Family in *MOSAID Technologies Inc. v. Freescale Semiconductor, Inc.*, No. 6:11-CV-173, Dkt. No. 252 (E.D. Tex. Apr. 29, 2013) (Giblin, J.) (“*Freescale*”) (attached to Plaintiff’s opening claim construction brief as Ex. L), and *Conversant Intellectual Property Management Inc v. Xilinx, Inc.*, No. 6:12-CV-847, Dkt. No. 138, 2015 WL 138157 (E.D. Tex. Jan. 9, 2015) (Mitchell, J.) (“*Xilinx*”).

Shortly before the start of the July 30, 2024 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties’ arguments and facilitating discussion. Those preliminary constructions are noted below within the discussion for each term.

II. LEGAL PRINCIPLES

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips*, 415 F.3d at 1312 (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). Claim construction is clearly an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996). “In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva*, 135 S. Ct. at 841 (citation omitted). “In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the

'evidentiary underpinnings' of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal." *Id.* (citing 517 U.S. 370).

To determine the meaning of the claims, courts start by considering the intrinsic evidence. *See Phillips*, 415 F.3d at 1313; *see also C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Group, Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See Phillips*, 415 F.3d at 1314; *C.R. Bard*, 388 F.3d at 861. Courts give claim terms their ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the entire patent. *Phillips*, 415 F.3d at 1312–13; *accord Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003).

The claims themselves provide substantial guidance in determining the meaning of particular claim terms. *Phillips*, 415 F.3d at 1314. First, a term's context in the asserted claim can be very instructive. *Id.* Other asserted or unasserted claims can aid in determining the claim's meaning because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term's meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

"[C]laims 'must be read in view of the specification, of which they are a part.'" *Id.* at 1315 (quoting *Markman*, 52 F.3d at 979). "[T]he specification 'is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.'" *Phillips*, 415 F.3d at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *accord Teleflex, Inc. v. Ficosa N. Am.*

Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.* The specification may also resolve the meaning of ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." *Teleflex*, 299 F.3d at 1325. But, "[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims." *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); *accord Phillips*, 415 F.3d at 1323.

The prosecution history is another tool to supply the proper context for claim construction because a patent applicant may also define a term in prosecuting the patent. *Home Diagnostics, Inc. v. Lifescan, Inc.*, 381 F.3d 1352, 1356 (Fed. Cir. 2004) ("As in the case of the specification, a patent applicant may define a term in prosecuting a patent."). "[T]he prosecution history (or file wrapper) limits the interpretation of claims so as to exclude any interpretation that may have been disclaimed or disavowed during prosecution in order to obtain claim allowance." *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452 (Fed. Cir. 1985).

Although extrinsic evidence can be useful, it is "less significant than the intrinsic record in determining the legally operative meaning of claim language." *Phillips*, 415 F.3d at 1317 (citations and internal quotation marks omitted). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too

broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert's conclusory, unsupported assertions as to a term's definition are entirely unhelpful to a court. *Id.* Generally, extrinsic evidence is "less reliable than the patent and its prosecution history in determining how to read claim terms." *Id.*

The Supreme Court of the United States has "read [35 U.S.C.] § 112, ¶ 2 to require that a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014). "A determination of claim indefiniteness is a legal conclusion that is drawn from the court's performance of its duty as the construer of patent claims." *Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005) (citations and internal quotation marks omitted), *abrogated on other grounds by Nautilus,* 134 S. Ct. 2120. "Indefiniteness must be proven by clear and convincing evidence." *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1377 (Fed. Cir. 2017).

"[P]rior orders in related cases do not bar the Court from conducting additional construction in order to refine earlier claim constructions." *TQP Dev., LLC v. Intuit Inc.*, No. 2:12-CV-180-WCB, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) (Bryson, J., sitting by designation).

In general, however, prior claim construction proceedings involving the same patents-in-suit are "entitled to reasoned deference under the broad principals of *stare decisis* and the goals articulated by the Supreme Court in *Markman*, even though *stare decisis* may not be applicable *per se*." *Maurice Mitchell Innovations, LP v. Intel Corp.*, No. 2:04-CV-450, 2006 WL 1751779,

at *4 (E.D. Tex. June 21, 2006) (Davis, J.); *see TQP*, 2014 WL 2810016, at *6 ("[P]revious claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so."); *see also Teva*, 135 S. Ct. at 839–40 ("prior cases will sometimes be binding because of issue preclusion and sometimes will serve as persuasive authority") (citation omitted); *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (noting "the importance of uniformity in the treatment of a given patent") (quoting *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390 (1996)).

III. AGREED TERMS

The parties reached agreement on constructions as stated in their May 9, 2024 Joint Claim Construction and Prehearing Statement Pursuant to Local Rule 4-3 (Dkt. No. 64 at 1–2) and in their July 16, 2024 Joint Claim Construction Chart (Dkt. No. 85-1 at 2–3, 6, 9–12, 14). Those agreements are set forth in Appendix A to the present Claim Construction Order.

IV. DISPUTED TERMS

Although the parties present different proposals for the level of ordinary skill in the art, Defendants argue that the difference has no impact on the claim construction analysis here at issue (Dkt. No. 81 at 6), and Plaintiff has not shown otherwise.

A. "appropriate frequency"

"appropriate frequency" ('563 Patent, Claims 23, 24, 33)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"frequency adapted to be at or below a maximum frequency possible at the delivered voltage"	Indefinite

Dkt. No. 64 at 3; Dkt. No. 74 at 6; Dkt. No. 81 at 6; Dkt. No. 84 at 1; Dkt. No. 85-1 at 20.

Shortly before the start of the July 30, 2024 hearing, the Court provided the parties with the following preliminary construction: "frequency adapted to be at or below a maximum frequency possible at the delivered voltage."

(1) The Parties' Positions

Plaintiff argues that the declaration of its expert, Dr. Marc Levitt, is unrebutted because Defendants did not provide any expert opinion on indefiniteness. Dkt. No. 74 at 6. Plaintiff also argues that "as the voltage applied to one or more transistors (e.g., a portion of the integrated circuit) varies over time, so too does the maximum possible frequency at which the transistors can operate," and "[a] POSITA would understand that, in the face of varying voltage, an 'appropriate frequency' likewise varies, and is always at or below a maximum frequency, where that maximum frequency is influenced by the voltage, which varies over time." *Id.* Plaintiff submits that "MediaTek does not appear to contest that a POSITA would know how to calculate the maximum frequency for a portion of an integrated circuit at a delivered voltage" and that the operating frequency "would not be a fixed number; instead it would be adapted as conditions change to be *appropriate* for circuit operation." *Id.* at 10; *id.* at 8–9.

Defendants respond that "[t]he term 'appropriate frequency' should be found indefinite because it is a term of degree and the '563 patent specification fails to provide any objective boundaries as to its scope, such that the scope of the claim is not reasonably certain." Dkt. No. 81 at 6. Defendants argue that "while MOSAID's proposed construction provides an upper bound for the range of permissible frequencies—'the maximum frequency possible at the delivered voltage'—neither MOSAID nor its expert, Dr. Levitt, were able to identify any lower bound." *Id.* at 6–7 (citation omitted). Defendants urge that "MOSAID's apparent argument, that

an 'appropriate frequency' can be *any frequency*, vitiates the 'appropriate' term of degree from the claims and fails to provide any 'objective boundaries for those of skill in the art' with which to assess the claims' true scope." *Id.* at 7 (quoting *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014).)

Plaintiff replies that Defendants do not meet their burden to show indefiniteness by clear and convincing evidence, arguing that "the '563 Patent describes highly technical subject matter relating to integrated circuits, and MediaTek declined to submit *any* expert evidence demonstrating the understanding of a person of ordinary skill in the art." Dkt. No. 84 at 1; *see id.* at 3. Plaintiff argues that this case is unlike *Interval Licensing*, in which no expert evidence was necessary to find that the terms at issue were purely subjective, 766 F.3d at 1371, because here the issue of "whether a circuit will operate successfully at a certain frequency and set of operating conditions is objective and determinable," and "thus, an 'appropriate frequency' is not purely subjective—it is subject to the physical constraints of semiconductor behavior and has determinable boundaries." *Id.* at 2.

At the July 30, 2024 hearing, Defendants alternatively proposed that, if the Court rejects Defendants' indefiniteness argument, then this term should be construed to refer to a frequency "at or near" a maximum frequency possible at the delivered voltage. The parties also reiterated the arguments set forth in their briefing.

(2) Analysis

As a threshold matter, IPR proceedings cited by Plaintiff (*see* Dkt. No. 74 at 11) are unpersuasive because an IPR petition cannot assert indefiniteness. *See* 35 U.S.C. § 311(b); *see also Cuozzo Speed Tech., LLC v. Lee*, 136 S. Ct. 2131, 2141–42 (2016). Defendants' reliance on statements by Plaintiff's expert in IPR proceedings are also unpersuasive, as no disclaimer is

apparent therein. *See* IPR2024-00599, Paper 6, June 28, 2024 Paper Owner's Preliminary Response at 6 ("dealing with voltage fluctuation rapidly enough to prevent malfunctions while still using the highest possible operating frequency at all times is the reason d'etre of the patent"); *see also id.*, Ex. 2001, June 28, 2024 Mangione-Smith Decl. at ¶ 44 ("An 'appropriate frequency' is one that is adjusted in response to fluctuations in a voltage delivered to a portion of the integrated circuit in order to support higher average frequencies while still avoiding timing failures in that portion of the integrated circuit.").

Turning to the claims, the disputed term "appropriate frequency" appears in all three asserted claims of the '563 Patent, namely Claims 23, 24, and 33. Claim 23 is an independent claim, and each of Claims 24 and 33 depends from Claim 23. Claims 23, 24, and 33 recite (emphasis added):

> 23. A system for circuit control comprising:
> at least one voltage sensor to sense a delivered voltage to a portion of an integrated circuit;
> at least one logic block to determine an *appropriate frequency* from the delivered voltage for the portion of the integrated circuit; and
> at least one circuitry arrangement to provide the *appropriate frequency* to the portion of the integrated circuit.
>
> 24. The system of claim 23 wherein the logic block determines as the *appropriate frequency*, the maximum frequency possible for the portion of the integrated circuit at the delivered voltage.
>
> . . .
>
> 33. The system of claim 23 further comprising:
> a table of possible values for the delivered voltage associated with possible values for the *appropriate frequency*.

Defendants urge that "appropriate" is a term of degree, but the Court disagrees. The claims at issue do not recite, for example, the "most appropriate" frequency. Rather, a particular frequency is either "appropriate" or not "appropriate." Neither the absence of mathematical

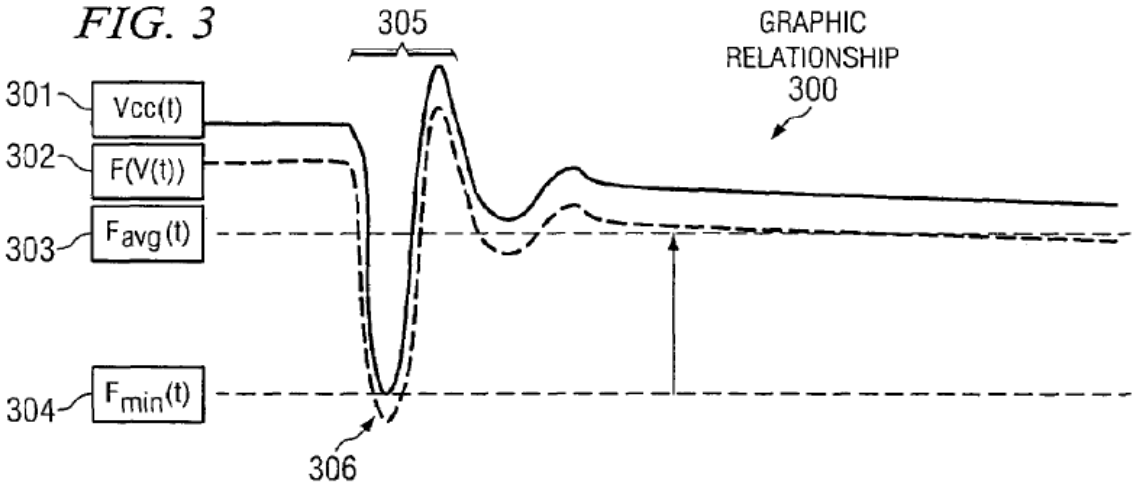
precision nor the variation based on the delivered voltage renders this a term of degree. Moreover, even if "appropriate" were deemed to be a term of degree, such terms are not necessarily indefinite. *See Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1347 (Fed. Cir. 2022) (a claim "may inherently result in broader claim scope than a claim defined with mathematical precision," but "a claim is not indefinite just because it is broad"); *see also Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014) ("Claim language employing terms of degree has long been found definite where it provided enough certainty to one of skill in the art when read in the context of the invention.").

The specification discloses (formatting modified):

> For power consumption, two relationships become important when the voltage varies. One is the relationship of the device speed to voltage; a relationship that is approximately linear. If the voltage applied to a transistor is lowered by 10%, the switching speed of that transistor is reduced by approximately 10%. * * *
>
> The second relationship is between power and frequency. Power (the total wattage dissipated by an integrated circuit) is equal to the switching capacitance of a device (. . . labeled C), multiplied by the voltage across the device squared (labeled V), and multiplied by the frequency at which the device is switching . . . . This relationship is thus: $P = C \times V^2 \times F$

'563 Patent at 1:50–67.

Figure 3 of the '563 Patent is reproduced here:



The specification discloses, with reference to Figure 3:

> As described above, the delivered voltage 301 will likely vary, as seen by voltage deviation 305. Prior art solutions required that the provided frequency 304 be low enough to still be viable even at the minimum voltage 306. Some embodiments of the present invention are able to continuously sense the delivered voltage 301 and provide a frequency 302 that tracks the delivered voltage 301. Thus the average frequency 303, provided by these embodiments of the present invention is significantly higher than the frequency 304 allowed by prior art solutions.
>
> * * *
>
> Certain embodiments of the present invention utilize the concept of average frequency. As voltage is varying, these embodiments of the present invention push the frequency very close to maximum for the voltage. As a result, the frequency varies with respect to location and with respect to time. Thus, the performance of the integrated circuit (usually well correlated with operating frequency) is sustained at an average frequency substantially higher than the minimum frequency that is the maximum at which a prior art integrated circuit can safely operate. The difference between these two values and the benefit gained is illustrated in FIG. 3.

Id. at 4:63–5:5 & 7:8–19; *see id.* at 6:26–31 ("With sudden changes in power consumption, steep voltage drops are seen. The faster the frequency changes in response to the voltage, the more efficient the system becomes. Ideally, frequency will remain very close to the maximum supported by the voltage.").

Figure 3 thus illustrates that the claimed invention purports to raise the average frequency ("$F_{avg}(t)$", 303) to a higher level than the prior art ("$F_{min}(t)$", 304) by varying the frequency of the transistor at a given point in time ("F(V(t)", 302) depending on the voltage level that is being delivered at that time ("Vcc(t)", 301). *Id.* at 4:61–5:5. Thus, the frequency varies depending on the voltage rather than being limited to what is operable at the lowest voltage. *See id.* at 1:29–32 ("the design of the device has to be such that the voltage seen at the integrated circuit is never below the level that enables the full [specified frequency of] operation"); *see also id.* at Fig. 3 (reference numeral 306).

Plaintiff's expert, Dr. Marc Levitt, opines:

> 42. A POSITA would have understood based on the '563 Patent how to determine the maximum frequency at a delivered voltage. * * *
>
> * * *
>
> 44. * * * [A] POSITA would understand based on the '563 specification that the frequency limits of a relevant portion of a VLSI [(Very Large Scale Integrated)] circuit could be determined based on the longest propagation time delay of logic gates in the relevant portion of the circuit.

Dkt. No. 74, Ex. H, May 10, 2024 Levitt Decl. at ¶¶ 39–46.

Defendants have not submitted any expert opinions to support Defendants' assertion of indefiniteness or to rebut these opinions of Plaintiff's expert. These opinions of Plaintiff's expert weigh against Defendants' assertion of indefiniteness. *See, e.g., Presidio Components, Inc. v. Am. Tech. Ceramics Corp.*, 875 F.3d 1369, 1376 (Fed. Cir. 2017) ("a claim is not indefinite if a person of skill in the art would know how to utilize a standard measurement method . . . to make the necessary measurement").

Some further consideration is appropriate, however, because a court can find indefiniteness without relying on an expert or any other extrinsic evidence. *Interval Licensing*, 766 F.3d at 1370 n.6.

Defendants cite testimony of Plaintiff's expert that the scope of "appropriate frequency" encompasses everything from the maximum possible frequency all the way down to a frequency at which the circuit ceases to operate. *Id.*, Ex. I, June 5, 2024 Levitt dep. at 55:19–56:2. Defendants argue that Plaintiff's interpretation thereby vitiates the word "appropriate." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004) ("If, as Safari proposes, the claim refers in the abstract to the creation of a filter assembly

structure, without any grounding to an intended use, the term 'operatively' is unnecessary and superfluous as the patentee could have as easily used the term 'connected' alone.").

This does not vitiate the word "appropriate," as Defendants argue it does, because "appropriate" limits the range of frequencies to being below the maximum that Plaintiff's expert identifies, which is supported by the above-cited disclosures in the specification. An appropriate frequency within the meaning of these claims is a frequency, determined in the manner that persons of skill in the art are familiar with, but appropriate for the changing voltage levels delivered to the circuit.

The unrebutted opinions of Plaintiff's expert are thus persuasive that "appropriate frequency" is not indefinite because a person of ordinary skill in the art would understand "appropriate frequency" as referring to a frequency at or below the upper boundary of what is "possible" at a particular voltage level, as proposed by Plaintiff. Although this is potentially a broad range of frequencies, "breadth is not indefiniteness." *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1367 (Fed. Cir. 2017); *see also Nautilus*, 134 S. Ct. at 2128 n.5 (citing *Eibel Process Co. v. Minn. & Ontario Paper Co.*, 261 U.S. 45, 58, 65–66 (1923) (Taft, J.), as "upholding as definite a patent for an improvement to a paper-making machine, which provided that a wire be placed at a 'high' or 'substantial elevation,' where 'readers . . . skilled in the art of paper making and versed in the use of the . . . machine' would have 'no difficulty . . . in determining . . . the substantial [elevation] needed' for the machine to operate as specified") (ellipses and square bracketed text are the Court's in *Nautilus*); *id.* at 2129 ("The definiteness requirement . . . mandates clarity, while recognizing that absolute precision is unattainable.").

Defendants thus do not meet their burden to show indefiniteness by clear and convincing evidence, *Sonix*, 844 F.3d at 1377, and the Court rejects Defendants' alternative proposal (at the July 30, 2024 hearing) of using the phrase "at or near" instead of "at or below."

The Court therefore hereby construes **"appropriate frequency"** to mean **"frequency adapted to be at or below a maximum frequency possible at the delivered voltage."**

B. "power islands"

"power islands" ('306 Patent, Claims 16, 18–20, 22, 26, 27, 31, 33, 37, 39–41, 43, 48; '885 Patent, Claims 23, 26, 39, 42; '811 Patent, Claim 30; '438 Patent, Claims 1, 3, 4; '077 Patent, Claims 1, 9; '349 Patent, Claims 1, 3, 4)	
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**
"a section of an integrated circuit where power consumption is controlled by independently varying its operating voltage *and* its frequency of operation"	"a section of an integrated circuit where power consumption is controlled by independently varying its operating voltage *or* its frequency of operation (or both)"

Dkt. No. 64 at 3 (emphasis added); Dkt. No. 74 at 13; Dkt. No. 81 at 14; Dkt. No. 84 at 5; Dkt. No. 85-1 at 1.

Shortly before the start of the July 30, 2024 hearing, the Court provided the parties with the following preliminary construction: "a section of an integrated circuit where power consumption is capable of being controlled by independently varying its operating voltage and its frequency of operation."

(1) The Parties' Positions

Plaintiff argues that "[t]he specification and prosecution history make clear that power islands, as opposed to prior art voltage islands, are capable of varying *both* voltage *and*

frequency," and "MediaTek's disjunctive version [of the construction] renders varying frequency merely optional, contradicting statements the patentee made to distinguish the prior art." Dkt. No. 74 at 13. Plaintiff submits that "while both voltage and frequency need not vary during any given operation, power islands must be *able to* independently vary both." *Id.* at 14.

Defendants respond that they are proposing the Court's prior construction, which Defendants argue "flows directly from the '306 and '438 patent family specifications . . . ." Dkt. No. 81 at 15. Defendants argue that "changing the frequency and changing the operating voltage at a power island are disclosed as two separate examples in the patent specifications." *Id.* Defendants urge that "MOSAID's construction should be rejected because it is not supported by and is, in fact, contradicted by the intrinsic record" and further because it "renders certain dependent claims redundant." *Id.* at 16.

Plaintiff replies that "MediaTek's proposal ensnares the prior art and directly conflicts with the applicants' arguments during prosecution." Dkt. No. 84 at 5. "In short," Plaintiff argues, "the prior art (e.g., Lackey) taught 'voltage islands,' islands configured to alter voltage and voltage alone, whereas the claimed 'power islands' must be able to control power consumption by independently varying voltage *and* frequency of operation." *Id.* at 6. Plaintiff submits:

> The crucible of Markman briefing in this case has laid bare the latent dispute: must the claimed "power islands" be *capable* of having their power consumptions controlled by independently varying their operating voltage *and* their frequency of operation, even if, *during operation*, power consumption is actually controlled by varying operating voltage, *or* frequency of operation, *or* both? In view of the file history, the answer is yes.

Id. Plaintiff argues that although Defendants propose the construction that the Court reached in *Xilinx*, that construction adopted the finding in the earlier *Freescale* case that "voltage islands" must be capable of *both* voltage control *and* frequency control. *See id.* at 6–8. Plaintiff further

argues that this is consistent with the claim language requiring, for example, "the system being configured to perform, during operation, an action on the at least one of the power islands, the action including changing a frequency of operation or changing a supply voltage." *Id.* at 9 (quoting '811 Patent, Cl. 1). Plaintiff urges that "[a]ll of the claims make sense if a 'power island' is a structure that must be capable of power control by voltage *and* frequency but, during operation, may use one capability at a time or both together." *Id.* at 9.

At the July 30, 2024 hearing, Plaintiff argued that Defendants are attempting to recast a statement in *Xilinx* of how a power island can be *used* as a statement of what a power island *is*. Defendants responded that its proposed construction indeed states what a power island is, not merely what it does. The parties also reiterated the arguments set forth in their briefing.

(2) Analysis

Claim 1 of the '306 Patent, for example, recites (emphasis added):

> 1. A method of managing power on an integrated circuit including a plurality of *power islands*, the method comprising:
>
> determining a target power level for one of the *power islands* based on needs and operation of the integrated circuit where power consumption is independently controlled within each of the *power islands*;
>
> determining at least one of actions to change a power consumption level of the one of the *power islands* to the target power level; and
>
> performing the at least one of the actions to change the power consumption level of the one of the *power islands* to the target power level where one of the actions comprises selecting a frequency for the one of the *power islands*.

As another example, Claim 1 of the '885 Patent recites (emphasis added):

> 1. An integrated circuit comprising:
>
> an integrated circuit chip;
>
> a plurality of *power islands* disposed on the integrated circuit chip having associated power consumptions, each of the power consumptions being independently controllable by changing a supply voltage and operating frequency;
>
> one or more power consumption signals indicating one or more of the power consumptions;

> a power management processor disposed on the integrated circuit chip and coupled to each of the *power islands* configured to monitor the one or more power consumption signals, the power management processor being dedicated to execute power management software to individually control each of the power consumptions, and the power management processor being configured to change power consumption in at least one of the *power islands* in response to a power consumption change request.

As further examples, Claims 1 and 3 of the '811 Patent recite (emphasis added):

> 1. A system comprising:
>
> an integrated circuit;
>
> a plurality of *power islands* of the integrated circuit having associated power consumptions, each of the power consumptions adapted to be independently controlled; and
>
> a power manager to control the power consumptions;
>
> at least one of the *power islands* adapted to have the power manager control its associated power consumption by a) the at least one of the *power islands* being configured to have one of plural threshold voltages of variable threshold transistors selected, and b) the system being *configured to perform, during operation, an action on the at least one of the power islands, the action including changing a frequency of operation or changing a supply voltage.*
>
> * * *
>
> 3. The system as claimed in claim 1 wherein the integrated circuit is configured to perform, during operation, both changing the frequency of operation and changing the supply voltage.

Freescale construed "power islands" to mean "a section of an integrated circuit where power consumption is controlled by independently varying its operating voltage and its frequency of operation." *Freescale* at 43–44.

Xilinx discussed the *Freescale* construction and construed "power islands" to mean "a section of an integrated circuit where power consumption is controlled by independently varying its operating voltage or its frequency of operation (or both)." *Xilinx*, 2015 WL 138157, at *14.

As demonstrated by briefing on objections to the claim construction in *Xilinx* (*see Xilinx*, Dkt. Nos. 142, 145 & 147), the parties in *Xilinx* did not dispute the *capability* of "power islands" to control both voltage and frequency, and, contrary to Defendants' argument, the *Freescale*

construction is consistent with Claims 1 and 3 of the '811 Patent (reproduced above). Whereas Claim 1 requires capability to change voltage, frequency, or both, dependent Claim 3 is limited to being configured to do both.

Defendants also cite, for example, dependent Claim 7 of the '306 Patent, which recites "wherein another one of the actions comprises modifying a first voltage for the one of the power islands." But Plaintiff's proposal requires that "power islands" must be *capable* of controlling voltage and frequency, not necessarily that all actions during operation necessarily modify voltage and frequency. Dependent Claim 7 of the '306 Patent thus recites that, for a recited power island that is capable of modifying voltage and frequency, a particular action includes modifying voltage.

Defendants further cite testimony of Plaintiff's expert that controlling frequency alone or controlling voltage alone would change power consumption (Dkt. No. 81, Ex. 1, June 5, 2024 Levitt dep. at 27:2–16 & 29:18–23), but this technical point is not in dispute and is not inconsistent with Plaintiff's interpretation of "power islands."

Turning to the prosecution history, during prosecution of the '306 Patent the patentee distinguished the "Lackey" reference:

> Applicants have further amended claim 1 to distinguish the differences between voltage islands and power islands. Amended claim 1 recites performing the action to change the power consumption level of the one of the power islands to the target power level where one of the actions comprises selecting a frequency for one of the power islands. *Lackey* teaches voltage islands where power consumption is controlled by voltage (Voltage Islands Overview section on page 195-196). However, *Lackey* does not teach or suggest power islands that control power consumption by frequency. While a power island may control power consumption by voltage, a power island of claim 1 may also advantageously control power consumption by selecting frequency. Power consumption in a power island can be reduced by reducing the frequency used in the power island.

Dkt. No. 74, Ex. K, May 24, 2005 Amendment at 11–12; *see id.* at 11 (describing "Lackey" as "an IEEE paper entitled 'Managing Power and Performance for System-on-Chip Designs using Voltage Islands' by Lackey et. al.").

Although Defendants point out that, when making this argument, the patentee had amended to add a claim limitation that "one of the actions comprises selecting a frequency for one of the power islands," the patentee expressly argued (as reproduced above) that Lackey disclosed controlling only voltage, not frequency. Defendants' proposal that "power islands" could be merely capable of controlling only voltage, as in Lackey, is therefore disfavored when the claims are read in light of this prosecution history.

Although this prosecution history for the '306 Patent does not necessarily apply to unrelated patents, such as the '438 Patent Family, these patents have the same assignee, some of the same named inventors, and similar subject matter. Based on these circumstances, the manner in which the patentee used the term "power islands" during prosecution of the '306 Patent is informative as to how the patentee understood the term, and how a person of ordinary skill in the art would understand the term, as to both the '306 Patent Family and the '438 Patent Family. *Cf. GE Lighting Sols., LLC v. Lights of Am., Inc.*, No. 1:12-CV-3131, 2015 WL 4660975, at *15 (N.D. Ohio Aug. 5, 2015) ("[T]he '864 Patent's prosecution history is informative to the indefinite[ness] analysis. As Defendants point out, both the '864 and '999 Patents relate to similar technology, have the same applicant, have overlapping inventors, and were prosecuted at the PTO during overlapping timeframes by the same prosecuting attorney.") (footnote omitted), *rev'd on other grounds*, 663 F. App'x 938, 941 (Fed. Cir. 2016).

Also, as highlighted during the July 30, 2024 hearing, the '438 Patent incorporates-by-reference the application that issued as the '306 Patent ('438 Patent at 4:3–7), Defendants

propose that "power islands" should be construed consistently across all of the patents-in-suit, and Defendants affirmatively rely on *Xilinx* as to all of the patents-in-suit even though *Xilinx* did not involve all of these patents. These circumstances weigh even further in favor of taking the prosecution history of the '306 Patent into account when construing "power islands" as to all of the patents-in-suit.

Further, requiring an ability to control frequency as well as voltage is also consistent with the Court's finding in *Freescale* that "both voltage control and frequency control are contemplated by the term when read in view of the intrinsic evidence." *Freescale* at 44.

Finally, Defendants cite disclosure of examples of controlling power consumption, including by modifying voltage:

> The action is any instruction, message, process, function, signal, *or* variable that controls power consumption in the power island 112, 114, 116, and 118. Some examples of actions are clock gating and dynamic clock selection. *Another example* of an action is modifying a clock *frequency* of one of the power islands 112, 114, 116, and 118. *Another example* of an action is to modify *voltage* of one of the power islands 112, 114, 116, and 118 such as dynamic voltage source, Vdd, selection. Another example of an action is to control dynamic leakage by controlling variable Vt transistors.

'306 Patent at 4:45–55 (emphasis added); *see also id.* at 2:32–37, 5:31–36 & 7:62–66; '438 Patent at 4:14–17 ("The power island managers 220, 222, 224 may select a clock, change clock frequency, *or* modify the *voltage* within the power island to control the power consumption of the power island.") (emphasis added). These disclosures, however, refer to "action," not configuration.

In sum, the Court construes "power islands" with an explicit reference to capability so as to best resolve the particular dispute in the present case, and the Court sees no inconsistency between the present construction and the constructions set forth in *Freescale* and *Xilinx*.

The Court therefore hereby construes **"power islands"** to mean **"a section of an integrated circuit where power consumption is capable of being controlled by independently varying its operating voltage and its frequency of operation."**

C. "power manager"

"power manager" ('306 Patent, Claims 16, 31–33; '885 Patent, Claims 23, 24, 39, 40; '811 Patent, Claims 30, 31, 42, 44; '077 Patent, Claims 1, 3)		
Plaintiff's Proposed Construction	**Defendants' Proposed Construction**	
Plain and ordinary meaning, which in the context of the '306, '885, '811, and '077 patents, is "any system, circuitry, or device configured to control power" in accordance with the remainder of the respective claim in which the term appears.	"any system, circuitry, or device configured to control power"	

Dkt. No. 64 at 3; Dkt. No. 74 at 15; Dkt. No. 81 at 18; Dkt. No. 84 at 10; Dkt. No. 85-1 at 2.

Plaintiff argued that "the term 'power manager' appears in multiple different contexts throughout the current asserted claims," and "the infringement and validity analyses must account for the entirety of the asserted claims." Dkt. No. 74 at 16 & 17. Plaintiff also argued that "MediaTek's proposal, on the other hand, does not explicitly recognize the role of the balance of each claim that includes 'power manager.'" *Id.* at 17.

Defendants responded that "MediaTek proposes that the Court simply adopt its prior construction which is supported by the intrinsic evidence." Dkt. No. 81 at 19 (citing '306 Patent

at 4:18–19 & ’438 Patent at 4:8–9). Defendants also argued that Plaintiff’s proposal of “in accordance with the remainder of the respective claim in which the term appears” should be rejected because it “only introduces confusion and creates redundancy.” (*Id.* at 19.) Defendants submitted that “it is unclear from MOSAID’s proposal which portions of the other limitations should be part of the ‘power manager.’” (*Id.* at 21.) “Additionally,” Defendants argued, “the Court should bar MOSAID’s argument under the doctrine of judicial estoppel because MOSAID now directly argues against the exact construction that it proposed and won in the 2015 case.” (*Id.* at 19.)

Plaintiff replied, in full, as follows:

> The parties agree that “power manager” means “any system, circuitry, or device configured to control power.” The parties also appear to agree that “power manager” should be read in accordance with the remainder of the respective claim in which the term appears, but dispute whether this legal concept should be part of the Court’s affirmative construction. While MOSAID continues to believe this concept should be part of the Court’s construction given the use of “power manager” across multiple patents-in-suit, in the end, this dispute is one of form and not substance. If not included in the Court’s claim construction, MOSAID will re-raise this issue in proposed jury instructions, or to the extent that MediaTek argues a contrary position.

Dkt. No. 84 at 10.

Plaintiff’s reply brief thus confirmed that the parties agree upon the proper construction for the term “power manager” itself, and any remaining dispute pertains to whether other language of the claims is satisfied for purposes of, for example, an infringement analysis. Shortly before the start of the July 30, 2024 hearing, the Court provided the parties with the following preliminary construction: “any system, circuitry, or device configured to control power.” At the hearing, the parties agreed with this construction and expressed no desire for any further construction of this term.

The Court therefore hereby construes **"power manager"** to mean **"any system, circuitry, or device configured to control power."**

V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patent-in-suit. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

SIGNED this 31st day of July, 2024.

ROY S. PAYNE
UNITED STATES MAGISTRATE JUDGE

APPENDIX A

Term	Parties' Agreement
"selecting a frequency" ('306 Patent, Claims 1, 16, 37)	Plain and ordinary meaning
"the action including changing a frequency of operation or changing a supply voltage" ('811 Patent, Claims 1, 45)	Plain and ordinary meaning
"power manager processor" ('811 Patent, Claims 24, 29)	Plain and ordinary meaning in view of "power manager"
"power manager to control the power consumptions" ('811 Patent, Claims 1, 17, 30, 45, 61)	Plain and ordinary meaning in view of "power manager"
"back biasing" ('811 Patent, Claims 14, 28, 58)	"biasing of the body of a device independently of the source by applying a voltage"
"[determine/determining] a target power level" ('306 Patent, Claims 1, 16, 37)	"[determine/determining] a desired, calculated, or specified power consumption for a power island"
"based on needs and operation of the integrated circuit" ('306 Patent, Claims 1, 16, 37) ('438 Patent, Claims 1, 15)	"based on future operational needs and current operating status of the integrated circuit"
"power consumption signals indicating one or more of the power consumptions" ('855 Patent, Claims 1, 8, 31, 39)	Plain and ordinary meaning
"synchronously" ('855 Patent, Claims 4, 11, 19, 26, 34, 42, 51, 59) ('811 Patent, Claims 30, 61)	Plain and ordinary meaning
"asynchronously" ('855 Patent, Claims 4, 11, 19, 26, 34, 42, 51, 59) ('811 Patent, Claims 30, 61)	Plain and ordinary meaning