

based a threshold does not mean that any claim runs afoul of Clark or any of the cited art, or should be found to be non-infringing. They should be construed as Theta proposes.

B. Group B Terms (varying / causing to vary)

The “varying” and “causing to vary” limitations of claim 1 of the ’962 Patent and claims 1, 3, and 8 of the ’925 Patent should be afforded their plain and ordinary meaning. The meanings of these “terms” are clear from the plain language and the context in which they are recited. Theta Br. at 17-19. The words “vary,” “varying,” and “as the” are straightforward and readily understandable by laypersons and POSITAs alike. *See, e.g., Research in Motion Ltd.*, No. 3:11-CV-0706, 2012 WL 4928897, at *10 (N.D. Tex. Oct. 17, 2012). There is no reason to change one of the instances of “vary” to “adjusting” (while retaining the other instance of “vary” no less), thereby introducing complexity where none exists. *See, e.g., Skyhook Wireless, Inc. v. Google, Inc.*, No. 10-11571, 2012 WL 4076180, at *13, *18 (D. Mass. Sept. 14, 2012). Samsung’s own construction confirms that plain and ordinary meaning is appropriate as it includes every single word of the original claim language as illustrated below:

Claim Language (Exemplary Claim)	Samsung’s Proposed Construction
“ varying an impedance and a bias current...as the signal strength of the interferer signal and the signal strength of the desired signal vary ” (’962 Patent claim 1)	“adjusting without reliance on any signal strength crossing a threshold [an impedance and a bias current / a bias current]...as the signal strength of the interferer signal and the signal strength of the desired signal vary ”

Samsung’s proposed addition of “adjusting without reliance on any signal strength crossing a threshold” should be rejected for the same reasons discussed above with regard to the “dynamically adjusting” terms.⁸ It should also be rejected for additional reasons particular to the

⁸ The same varying limitations were at issue in *Theta I*, yet Samsung did not advocate for any negative limitation relating to signal strength thresholds. Ex. 23 at 7-10. Instead, Samsung asserted that the “varying” must be continuous because of a different alleged disclaimer, which Judge Payne rejected. Ex. 9 at 32-36.

file history of the '962 patent. The only claim of the '962 Patent at issue here (claim 1) was never even subject to a prior art rejection—the only rejection of claim 1 (originally claim 29) during prosecution was a double-patenting rejection. *See* Ex. 4 at 102-11 (prior art rejections of claims 1-28), at 112 (double-patenting rejection of claims 1-34). Thus, no amendments were made to claim 29 to overcome prior art.

Further, the portions of the prosecution history Samsung cites at the top of page 8 relate to the rejection of claims 1 and 2, which never issued. These claims contained the phrase “by variably adjusting” from the start; “varying” was not added to overcome the prior art. Ex. 4 at 259, 268-69. The quoted passages do not even include the words “vary” or “varying,” and, in any event, include multiple different distinctions over Clark reference: (1) a first circuit node is compared with a second circuit node and that (2) “one or more specific controlled parameters change” (3) “as the result of the comparison changes.” As to the final quote on page 8, pending claim 3 never issued and claim 3 already contained the word “varying” and “varied”; the concept of “varying” was not added to overcome Clark. Ex. 4 at 260, 270. Instead, the claim was simply clarified such that it was clear that the gain (a specific parameter) is “varied as the first signal strength varies.” *See id.*

Likewise, the addition of words “as the” and “vary” to claim 29 does not “directly and explicitly” tie the alleged (but nonexistent) disclaimer from claims 1-3 (which never issued) to claim 29 (which did).⁹ Samsung Br. at 8-9. This change to claim 29 was, at best, a clarifying amendment given that the claim itself already claimed a method that varied impedance as the signal strength of the desired signal and interferer varied:

wherein the bias current and the impedance of the circuit in the signal path of the wireless receiver are varied according to the following methods:

⁹ Although Samsung did not request construction of the phrase “as the . . . vary,” it now appears to suggest that “as the” requires constant and continual variation. But there is no support for this construction, and in any event, there is no reason to construe “as the” because the plain meaning is readily understood. *Research in Motion Ltd.*, No. 3:11-CV-0706, 2012 WL 4928897, at *10.

(i) **when** the signal strength of the *interferer signal is high* and *the signal strength of the desired signal is low*, the bias current of the circuit in the signal path of the wireless receiver is increased and the impedance of the circuit in the signal path of the wireless receiver is reduced, resulting in a maximum current drain;

(ii) **when** the signal strength of the interferer signal is high and the signal strength of the desired signal is high, the bias current of the circuit in the signal path of the wireless receiver is increased while the impedance of the circuit in the signal path of the wireless receiver is increased, resulting in a reduction in current drain over method (i); . . .

Ex. 4 at 265 (elements (iii) and (iv) are in accord).

There was no disclaimer as to the '962 patent. Because Samsung's argument regarding the '825 claims depends entirely on the success of its '962 arguments, it fails as well.

Finally, and most importantly, as with the '202 patent, the claims each already contain limitations that capture the distinctions over Clark (for example 29(i) and (ii) above). The claims affirmatively say when adjustments are made; there is no reason (and it is wrong and incomplete) to include the negative limitation Samsung proposes.

III. THE ASSERTED PATENT CLAIMS ARE DEFINITE.

It is well-established that “the certainty which the law requires in patents is not greater than is reasonable, having regard to their subject-matter.” *Minerals Separation, Ltd. v. Hyde*, 242 U.S. 261, 270 (1916); *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910–11 (2014). The use of qualitative terms does not render a claim indefinite. *Modine Mfg. Co. v. U.S. Int'l Trade Comm'n*, 75 F.3d 1545, 1557 (Fed. Cir. 1996), *abrogated on other grounds*, *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed. Cir. 2000). Instead, “a patentee has the right to claim the invention in terms that would be understood by persons of skill in the field of the invention.” *Modine*, 75 F.3d at 1557. This includes qualitative terms. *Mallinckrodt, Inc. v. Masimo Corp.*, 147 F. App'x 158, 179 (Fed. Cir. 2005) (affirming definiteness where terms were qualitative); *MED-EL Elektromedizinische Gerate GmbH v. Advanced Bionics, LLC*, No. 18-

1530-JDW, 2020 WL 5994181, at *3 (D. Del. Oct. 9, 2020) (qualitative terms not indefinite where inventions were directed at eliminating channel-by-channel measurement found in the prior art).

In order to prevail on indefiniteness, Samsung must show by clear and convincing evidence that the claims, when viewed in light of the intrinsic evidence, do not inform those skilled in the art about the scope of the invention with reasonable certainty. *Nautilus*, 572 U.S. at 911. Samsung cannot meet this standard with regard to the asserted claims, and certainly not on this record. Its cursory expert declaration is little more than a rehash of its misguided legal assertions. And in any event, Theta’s expert, Dr. Goldberg, disagrees with the Samsung’s expert on the merits, and even on the level of ordinary skill in the art. These disputes alone preclude a finding of indefiniteness. In addition, the prior art of record establishes that POSITAs understood and regularly used the same language at the time of the patent; even Samsung’s own patents and publications do the same. Samsung’s arguments should be rejected.

A. The asserted patents specify the metes and bounds of the claimed inventions to a POSITA.

Before Dr. Tsividis’ inventions, the conventional approach was to design transceiver circuits for the “worst case” operating condition—*i.e.*, a set of conditions in which the desired signal reception is low and interference is high, but where the transceiver could still operate. *E.g.*, Ex.1 at 1:34-40. This concept was well-known to a POSITA, and a POSITA would design a transceiver to achieve acceptable performance when faced with those conditions. *Id.* at 1:34-40, 6:4-14; Ex. 28 (Goldberg) ¶ 44. The configuration of components in that “worst case” consumed a certain amount of power, a value readily calculated or measured by a POSITA. Ex. 28 ¶ 44, 69.

Dr. Tsividis’ novel approach teaches that a transceiver should be designed so that certain of its components can be adjusted in response to changes in operating conditions (*i.e.*, as the strengths of the desired and interferer signals change) in order to reduce the circuit’s power

dissipation relative to the worst case. *E.g.*, Ex. 1 at 1:40-3:7. For example, the specification teaches how to adjust a receiver's signal components based on the received signal conditions (*id.* at 3:63-6:4); how to determine a minimum power dissipation for a given circuit (*id.* at 6:24-30); and how a transceiver's components should be adjusted when various representative operating conditions are encountered (*i.e.*, combinations of high and low interferers and desired signals) (*id.* at Figs. 8-12 and accompanying descriptions; *see also* 10:48-55, 11:24-32, 12:36-48).

The asserted patents use qualitative descriptions of the inventions because their teachings are not limited to a particular implementation but are instead relevant to a variety of wireless applications (“IEEE 802.11a, 802.11b, 802.11g, or other signaling standard or combination of standards” (Ex. 1 at 3:63-66, 7:21-25)):

It should be noted that not all possible signal conditions are listed here. For example, either the signal or interferer may be of a relatively medium strength, or the interferer may be absent. Also, these terms are for exemplary purposes and are not meant to convey specific signal conditions, but rather are only qualitative. The proper response to a specific condition depends on the embodiment of the present invention, the particular circuit topology, the requirements of the signaling standard used, as well as other constraints.

Ex. 1 at 11:26-33.

B. A POSITA would understand the claims.

Dr. Goldberg opines that a POSITA would have a B.S. in electrical or electronics engineering and approximately five years of experience in several specific areas. Ex. 28 ¶¶ 35-40. Samsung's expert, in contrast, claims that the level of ordinary skill in the art would be much lower. Kiaei Decl. (Ex. 13) ¶ 22. This dispute alone precludes a finding of indefiniteness.

But even if Samsung's standard were applied, a POSITA would understand that the inventions described in the asserted patents may be applied to a variety of wireless systems or applications, each of which would have its own “particularities” to be accounted for. *E.g.*, '962 at 11:24-33; Ex. 28 ¶¶ 38-39, 42-46. The use of qualitative descriptions would have been expected

since they applied to a variety of applications, and a POSITA would have understood how to implement the patents' teachings to account for the requirements of a particular implementation. *E.g.*, '962 Patent at 3:62-4:3, 11:24-33; Ex. 28 ¶¶ 24-29. A significant aspect of the claimed inventions is that they are **not** limited to specific decibel-level cutoffs. A POSITA would find the recited terms to be readily understandable given the breadth of the disclosures in the specification and the level of skill in the art. Ex. 28 ¶¶ 43-44. Indeed, the terms and phrases recited in the asserted patents—and qualitative descriptions of signal strength, power consumption, and operating parameters—were commonly used at the time of the inventions. Even Samsung admits that these terms were well-understood. *See* Samsung's Br. at 13.

The asserted patents describe a framework in which power dissipation may be decreased relative to a worst-case scenario. The specification (and many of the claims) define the worst-case operating conditions, and how to assess the power consumption of a receiver that is configured to operate in such worst-case conditions. A POSITA would readily understand that reference to the relevant specification or standard for a given wireless system would be expected, including to ascertain the range of operating conditions to be met by a given implementation. Ex. 28 ¶¶ 46-47. A POSITA would also know that wireless standards and specifications typically set forth required minimum operating conditions—*i.e.*, the worst-case conditions in which a compliant device is expected to operate. Ex. 28 ¶ 56. A POSITA reading the asserted patents and their claims would read them in the context of the standards and/or requirements documents applicable to a particular embodiment. Ex. 28 ¶¶ 28, 43, 59-61.

That a POSITA would understand the meaning of the claims with reasonable certainty is also confirmed by reference to the file histories and cited prior art. For example, in describing allowable subject matter for the '962 patent, for example, the patent examiner utilized phrases

identical to those recited in the claims to describe his reasons for allowance, *including how those terms and phrases differed from the prior art* of record, demonstrating their objective boundaries. Ex. 4 at 29-31. In addition, the prior art references cited during prosecution each used similar qualitative terms and phrases to describe and claims their prior-art approaches. *See, e.g.*, Ex. 7 (Dkt. 36-7), Clark at Abstract & Claim 1; Ex. 24, Leifso at Abstract, 2:6-28, 8:45-54 & Claims 1-8; Ex. 25, Loke at 1:30-33, 1:51-55, 2:16-20, 2:61-62 & Claims; Ex. 28 ¶ 54.

C. The sufficiency of the intrinsic disclosures is confirmed by reference to Samsung’s patents and publications.

Even *Samsung* routinely uses the same terms and phrases that it contends are indefinite in its own patent filings. In a 1997 patent entitled “Power Saving Device For Radio Communication Terminal,” the abstract cited several “terms of degree,” including “when the signal strength is high” and “when the signal strength is low” to explain when signals are switched. Ex. 26, U.S. Patent No. 6,397,090. This language appears throughout the specification (*e.g.*, 1:21-25, 3:31-49) and in the claims (*e.g.*, “high power” and “low power”). *Id.* A Samsung Patent Publication from 2004 for a “High Speed Digital Received Signal Strength Indicator Circuit, Ex. 27, U.S. Pat. Pub. No. 2004/0038657, likewise uses qualitative language and terms of degree throughout the specification and the then-pending claims to describe the use of a received signal strength indicator circuit to control the gain of a received signal.

D. The “Group D Terms” are definite.

As described in detail above, the claims recite terms and phrases that were readily understandable to a POSITA in the relevant art—such as whether a signal is weak or strong, high or low. Ex. 28 ¶¶ 55-62. And the specification and claims teach how the worst-case scenario may be defined, and its use as a reference point to assess improvements in power dissipation, including the Group D Terms. Ex. 28 ¶ 64. Samsung does not and cannot dispute these teachings;

its expert declaration does not even consider the claims or the specification as a whole.

Instead, Samsung excises four words (“high,” “low,” “weak,” and “worst-case”) but ignores how the terms and phrases are used within the claims. These terms and phrases would be readily understood by a POSITA and definitively stake out the metes and bounds of the claims in view of the relevant art. Ex. 28 ¶¶ 55-56.

The use of “low” and “worst case” in the ’825 patent claims is not indefinite, nor are the terms contradictory. Each of the ’825 independent claims define the “worst case” condition as a distinct element of the claim. Each claim goes on to describe how a circuit’s parameters may be adjusted based on particular operating conditions, and how power may be saved relative to the worst-case. Ex. 28 ¶¶ 63-64. Contrary to Samsung’s contention, underlined portion of claim does not contradict with the worst-case condition:

(i) when the signal strength of the interferer signal is high and the signal strength of the desired signal is low, and the desired signal is larger than in the worst-case power dissipation condition, causing the bias current of the one or more of the plurality of circuits in the receiver signal path of the wireless transceiver *to be reduced compared to the worst-case power dissipation condition*, thereby saving power;

Considered in context, however, the meaning is clear. To the extent that the desired signal is low, but still larger than it was in the worst-case, then there is still a possibility of reducing power consumption (relative to the worst case). Ex. 1 at 11:17-23 & FIGS. 11B-11D. This optimization is consistently described in the specification, i.e., if the received signal is above a minimum level necessary for proper operation, it may be acceptable to perform adjustments to reduce power consumption. Ex.1 at 10:11-59 & figs. 10B-11D, 11B-11D; Ex. 28 ¶¶ 29, 41, 49-53.

Samsung’s cases do not overcome this factual record. In *Power Integrations*, the Court noted that “the recited controller behaves one way when the load is above the moderate power level threshold value and behaves another way when it is below that value,” but did not provide guidance on how to determine that threshold. *Power Integrations, Inc. v. ON Semiconductor*

Corp., No. 16-CV-06371-BLF, 2018 WL 5603631, at *20 (N.D. Cal. Oct. 26, 2018). The asserted claims do not recite such a definitive turning point. Instead the claims recite conditions based on the relative signal strengths of the desired and interferer signals, as well as guidance for assessing those conditions in a manner that is reasonably ascertainable to a POSITA. Samsung’s citation to *Intellectual Ventures I LLC v. AT&T Mobility LLC*, No. CV 13-1668-LPS, 2016 WL 4363485, at *17 (D. Del. Aug. 12, 2016), *aff’d in part, vacated in part, remanded sub nom. Intellectual Ventures I LLC v. T-Mobile USA, Inc.*, 902 F.3d 1372 (Fed. Cir. 2018), where “[n]othing in the claim language, specification, or prosecution history provides any guidance as to the meaning of the phrase ‘a large number,’” is also misplaced. *See supra* Parts A-C. That the claims and the specification recite an explicit comparison stands in stark contrast to the court’s reasoning in *Intellectual Ventures*, which noted that the specification implied that a comparison was needed to determine the meaning of the “large number” recited in the claims without explaining what to compare against. 2016 WL 4363485, at *17.

E. The “Group E Terms” are not indefinite.

The intrinsic record teaches that the claimed inventions improved on the contemporary approach, wherein a receiver’s operating parameters were configured to operate for the worst-case condition. The worst-case conditions in which a receiver may operate depends on the network topology, standard, or a specific implementation, as a POSITA would readily comprehend. *See also* Ex. 28 ¶ 46. The patents teach how to adjust a receiver’s operating parameters based on the measured signal conditions to reduce power consumption relative to that baseline condition. Determination of a receiver’s power consumption (whether the baseline or for an adjusted state) would be straightforward to a POSITA, either by calculation or direct measurement, in view of the implementation details. *E.g.*, Ex. 28 ¶ 56. The identified claims are definite based on this intrinsic record and the full context of the claims in which the identified terms and phrases are recited.

Samsung’s assertion that a POSITA would not understand what comprises a baseline current drain is incorrect, and in any event contradicted. Ex. 28 ¶ 66. A POSITA would be well-versed in determining the current drain associated with a receiver’s configuration, including a receiver designed for the “worst case.” Ex. 28 ¶ 44. The claims recite how to adjust the receiver’s components based on the encountered signal conditions; a POSITA would also be well-versed in determining the current drain associated with the modified operating parameters, as well as the relevant improvement in current drain. Ex. 28 ¶¶ 68-69. Again, the patent’s repeated instruction that the inventions are applied in the context of a varied network topologies and with reference to applicable wireless standards and specifications would inform a POSITA how the worst-case conditions and baseline power consumption is determined—and determination of the relative improvement in current drain associated with the adjustments performed in accordance with the claims would be straightforward to a POSITA. Ex. 28 ¶¶ 68-69.

F. “impedance”

Theta proposes the same construction that the parties agreed upon in *Theta I*. “Impedance” is “a well-known and commonly used term in electrical engineering” (Samsung Br. at 22), but it is not (as Samsung insists) limited to describing a property of “a circuit.” Even Samsung’s extrinsic definitions make clear that the term can refer to “the ratio of the potential difference across a circuit *or the elements of a circuit* to the current through the circuit *or element*.” See Dkts. 40-3,40-5. Likewise, while the meaning of impedance can account for both “resistance and reactance,” it does not require that both “resistance and reactance” be present in every electrical component or circuit to be applicable. In particular, when dealing with individual elements or components (*e.g.*, resistors, inductors, capacitors), rather than complete circuits, the impedance includes only the resistance or reactance of the component. Thus, for a resistor with value R , the impedance equals the resistance, $Z_R=R$ (also known as “resistive impedance”); for

an inductor with value L , the impedance encompasses the inductive reactance, ωL , with ω the radian frequency (the impedance being $Z_L = j\omega L$, also known as “reactive impedance,” with j the imaginary unit to indicate a 90 degree phase shift); and for a capacitor with value C , the impedance encompasses the capacitive reactance $1/\omega C$, with $Z_C = 1/j\omega C$, also known as “reactive impedance.” *See* Ex. 28 ¶¶ 70-72 & Goldberg Exs. D-E.

Samsung’s construction is inconsistent with the usage of the term “impedance” by the asserted patents, which refer to plural impedances for a given circuit and use the term to encompass references to the resistance of a component without reference to any reactance of the component, and to the reactance of a component without reference to any resistance of the component. For example, the shared specification explicitly refers to “a circuit’s impedances” and indicates that one of those is the resistance of the resistor component (R 614) and that another is the capacitive reactance of the capacitor component (C 616).

FIG. 6 is an example of how *a circuit’s impedances* may be scaled to reduce drive currents, and, depending on the circuit configuration used, associated bias currents as well. A driver 612 has a load R 614 and C 616. The frequency response of this circuit is the same as that seen by driver 622, which drives an impedance of $2R$ 624 and $C/2$ 626.

’962 patent, 7:44-52 (emphasis added). Samsung attempts to reconcile this passage with its construction by noting that “Figure 6 and the related discussion addresses a circuit with a resistor (to provide resistance) *and a* capacitor (to provide reactance).” Samsung Br. at 23 (emphasis in original). But that is precisely the point: the discussion related to a circuit with a resistor *and a* capacitor, and referred to plural “impedances” in relation thereto: one with reference to the resistor and one with reference to the capacitor. Thus, the asserted patents refer to the resistance of the resistor, without reference to any reactance of the component, and likewise refer to the capacitive reactance of the capacitor without reference to any resistance of the component. The asserted patents provide further consistent examples of usage of the term “impedance.” *See e.g.*, ’962

patent, 7:36-40 (referring to the resistance of a resistor, without reference to any reactance, capacitive or inductive). Samsung’s construction, which would unduly limit “a circuit” to one “impedance” is inconsistent with these disclosures and should be rejected. *See e.g., Merck & Co. v. Teva Pharms. USA, Inc.*, 395 F. 3d 1364, 1372 (Fed. Cir. 2006), 347 F. 3d at 1371; *NeoMagic Corp. v. Trident Microsystems, Inc.*, 98 F. Supp. 2d 538, 553-54 (D. Del. 2000).

Samsung’s construction is also inconsistent with the usage of the term “impedance” in the claims. For example, claim 18 of the ’202 patent recites “adjusting ***an impedance*** of at least one of the plurality of circuits in the signal path.” ’202 patent, Cl. 18. The Federal Circuit “has repeatedly emphasized that an indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more.’” *Baldwin Graphic Sys., Inc. v. Siebert, Inc.*, 512 F. 3d 1338, 1342 (Fed. Cir. 2008) (internal citation omitted); *SanDisk Corp. v. Kingston Tech. Co.*, 695 F. 3d 1348, 1360 (Fed. Cir. 2012).¹⁰ Consistent therewith, the meaning of “impedance” must accommodate the possibility of being applied more than once to “a circuit.” In addition, dependent claims 2, 4, and 6 of the ’825 patent recite “a change in an impedance in the one or more of the plurality of circuits . . . wherein the ***impedance comprises at least a resistor and a capacitor***.” ’825 patent, Cls. 2, 4, 6 (emphasis added). Samsung’s construction, which requires impedance to include resistance ***and*** reactance would render that language superfluous. *Wasica Fin. GmbH v. Cont’l Auto. Sys., Inc.*, 853 F.3d 1272, 1288 n.10 (Fed. Cir. 2017).

IV. CONCLUSION

Plaintiff Theta respectfully requests that the Court adopt its proposed constructions for the terms discussed above.

¹⁰ Other claims also refer to “an impedance” with respect to “at least one of the plurality of circuits” or “at least one of the amplifier, filter or mixer.” *See e.g.,* ’962 patent, Cl. 1; ’202 patent, Cls. 1, 6, 7, 12, 14, 18, 19, 22.

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that the foregoing document was filed and received by all counsel of record using the Court's CM/ECF system on December 16, 2020.

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