

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
Petitioner,

v.

WIPQTUS INC.,
Patent Owner

Case No. IPR2024-00023

Patent No. 10,038,339

**PATENT OWNER WIPQTUS'S REVISED CONTINGENT MOTION TO
AMEND UNDER 37 C.F.R. § 42.121**

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I. INTRODUCTION

WiPQTUS, Inc. (“WiPQTUS” or “Patent Owner”) previously filed its Contingent [MTA] (Paper 11) (“MTA”). On September 20th, the Board provided its Preliminary Guidance Patent Owner’s [MTA], Paper 15 (“Guidance”). The Patent Owner exercises the option to file this revised MTA. Guidance, p. 28.

WiPQTUS submits this motion to amend contingent on the outcome of this trial. In the event the Board finds any of the Claims 1 and 2 to be unpatentable, WiPQTUS requests that the Board grant this motion and substitute Claims 21-22 as shown in Appendix A.

II. LEGAL STANDARD

A patent owner may propose a reasonable number of substitute claims for each challenged claim. 35 U.S.C. § 316(d)(1)(B). A patent owner must show that the substitute claims are non-broadening, supported by the application as filed, do not introduce new matter, and are responsive to the instituted grounds. If a patent owner meets these requirements, the Board will consider whether the substitute claims are unpatentable by a preponderance of the evidence. *L&P Property Mgt. Co. v. Remacro Machinery & Tech. Co., Ltd.*, 2019 WL 2521255, IPR2019-00255, Paper 15 at 6 (P.T.A.B. Jun. 18, 2019) (Paper No. 15). Petitioner has the burden to show that the amended claims are unpatentable over the prior art. 37 C.F.R. §

42.121(d)(2); *see also Aqua Products Inc. v. Matal*, 872 F.3d 1290, 1324 (Fed. Cir. 2017) (*en banc*). In a motion to amend, a patent owner need only satisfy its burden of production under 35 U.S.C. § 316(d) and 37 C.F.R. § 42.121(d)(1). The “entirety of the IPR record” is to be considered by the Board in deciding a motion to amend. *Matal*, 872 F.3d at 1326.

WiPQTUS satisfies the requirements for a motion to amend because: Claims 21 and 22 (1) correspond to the Challenged Claims 1 and 2, and therefore are a reasonable number of substitute claims; (2) respond to a ground of unpatentability in the trial; (3) do not impermissibly enlarge claim scope; (4) do not introduce new subject matter; and (5) are patentable over the original Ground 1 as well the two additional combinations raised by Petitioner in its Opposition. The following headings reflect the order of the headings in the Guidance under Section II(A).

III. WIPQTUS PROPOSES A REASONABLE NUMBER OF SUBSTITUTE CLAIMS

As set forth in Appendix A, WiPQTUS proposes only one substitute claim for each Challenged Claim 1 and 2. Accordingly, WiPQTUS presents a reasonable number of substitute claims. *See* Guidance, p. 4; 37 C.F.R. § 42.121(a)(3); 35 U.S.C. § 316(d)(1)(B).

IV. PROPOSED SUBSTITUTE CLAIMS RESPOND TO THE SINGLE GROUND RAISED IN THE PETITION

The Board has preliminarily found that the MTA presented “amendments in an attempt to add features to further distinguish the proposed substitute claims as patentable over the references [*i.e.*, Chatterjee and Corbridge] Petitioner relies on.. .” Guidance, p. 4. The amendments (App. A) are substantially similar to those originally proposed amended claims. The slight change to the “impedance network” limitation reflects WiPQTUS’ response to Petitioner’s Opposition stating that the limitation “an impedance network comprised of two or more electrical components from the list ...” is indefinite. Opposition, p. 5. WiPQTUS has rewritten this language to “an impedance network comprising a collection of two or more electrical components, one of which must be a passive component and one of which must be either an active component or switch.” *See* Appendix A.

As previously explained, neither Chatterjee nor Corbridge meet the limitations “impedance network” and limitation 1[e] as properly construed. Response, pp. 52 - 64; Ex. 2003, 134 – 171; 180 - 182. If anything, the revised proposed Claim 21 in Appendix A is narrower than Claim 1 and prior proposed claim 21 and, therefore, provides a further basis for distinction.

The limitation “while configured to receive said power” appears in Revised Proposed Claim 21 below as well as in the original Proposed Claim 21. Therefore, the Board’s finding applies equally here. Guidance, p. 4. Claim 22 is being

amended to change the dependency from Claim 1 to Claim 21. Thus, the requirement that the MTA be in response to a ground of unpatentability is met.

V. PROPOSED AMENDED CLAIMS 21 AND 22 DO NOT ENLARGE THE SCOPE OF THE ORIGINAL CLAIMS 1 AND 2

The proposed substitute claims do not enlarge the claim scope. Proposed substitute independent Claim 21 further limits its corresponding original independent claim 1 by adding two limitations. The Board has found that “[p]roposed substitute claims 21 ... add limitations vis-à-vis originally challenged claims 1 ... and, therefore, do not enlarge the scope of the originally challenged [claims].” Guidance, p. 5. The same holds true with respect to the revised proposed substitute Claims 21 and 22 (App. A). *Id.*

VI. SUBSTITUTE CLAIMS 21 AND 22 DO NOT ADD NEW MATTER AND DO HAVE ADEQUATE WRITTEN DESCRIPTION SUPPORT

“[T]he test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharma, Inc. v. Elli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed Cir. 2010) (*en banc*). Subject matter not supported by a written description is new matter. *See, e.g., In re Downing*, 754 Fed. Appx., 988, 994-995 (Fed. Cir. 2018).

The substitute Claims 21 and 22 add two limitations as compared to Claims 1 and 2 of the '339 Patent. These additions are well supported by the '312 Provisional Application (Ex. 2004) or, alternatively, the '310 Application (Ex. 1007). They are also supported by the later '070 Application (Ex. 1006). Ex. 2008, *Decl. of [Dr. Direen] in Support of Patent Owner's Revised Motion to Amend*, ¶ 94 (“Ex. 2008” or “Direen Supp. Decl.”).

The first added limitation is “a collection of two or more electrical components, one of which must be a passive component and one of which must be either an active component or switch” to explicitly limit “impedance network” to a particular configuration. In the Guidance, the similar limitation in was found not be indefinite. Guidance, pp. 15 – 16. Implicit in the Board's ruling is that the limitation is supported. The Board's finding referred to the description to the “impedance network at Ex. 1001, the '339 Patent, 9:4-14. This same description is found in the '312 Provisional and the '310 Application. Ex. 1007, '310 Application, p. 12, [0028]; Ex. 2004, '312 Provisional, p. 9, [0024]; *see also* Ex. 1006, '070 Application, p. 16, [0044]. The amendments shown in Appendix A are if anything narrower than those originally proposed in the MTA. Notably, Petitioner did not contend in its Opposition that the previously proposed “impedance network” limitation did not have support.

The second limitation “while configured to receive said power” is the same as that considered by the Board as to the originally proposed Claim 21. See Guidance, pp. 6 – 8. The Board found that this limitation was not supported. Guidance, pp. 6 – 8. WiPQTUS requests that the Board reconsider in light of the Sur-Reply, incorporated herein by reference, and the additional explanation and citations below.

The ‘310 Application provides written support for the limitation “while configured to receive said power” of Claim 21:

On receiving sufficient level of power from the wireless power transmitter, the dual mode wireless power receiver [“DMWPR”] powers up and starts communicating with the wireless power transmitter. ***The dual mode wireless power receiver adjusts the impedance of its impedance network.*** The dual mode wireless power receiver ***also adjusts the topology of the switch network, for example from the default non-synchronous rectifier to fully synchronous rectifier.***

Ex. 1007, [0010]; Ex. 1006 [0009]; Ex. 2008, ¶ 90. The first sentence sets the context in stating that the DMWPR is in the receiving power mode as shown by the phrase “[o]n receiving sufficient level of power.” After receiving the sufficient level of power, the DMWPR adjusts both “the impedance” and “topology of the switch network.” That the topology is adjusted from a non-synchronous rectifier to a fully synchronous rectifier makes clear that the changes to impedance and

topology are performed by the DMWPR in the receiving power mode, which is the mode in which a rectifier is used (an inverter is used to transmit power). *Id.*

From Figure 2B in the '312 Provisional, the '310 Application, and the '070 Application, it is clear that the impedance network of the DMWPR must be capable of being changed during the receiving power mode as required in limitation 1(e). Ex. 2004, Fig. 2B; Ex. 1007, Fig. 2B; Ex. 1006, Ex. 2B. For example, the following is Fig. 2B from the '310 Application:

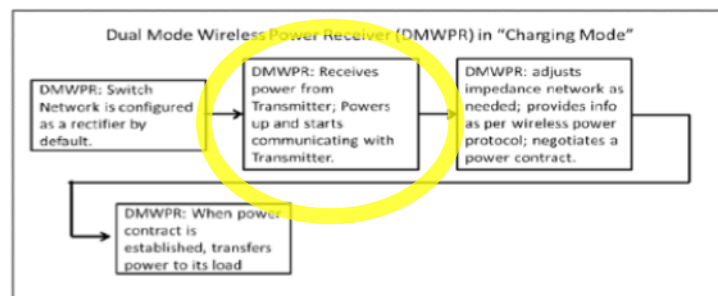


FIG. 2B

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Ex. 1007, *see also* Ex. 2002, '929 Patent; Ex. 2008, ¶ 91. The '312 Provisional describes Figure 2B. Ex. 2004, [0029]. It is also described in the '310 and '070 Applications. Ex. 1007, [0034]; Ex. 1006, [0050]; 2002. For example, the '310 Application describes Figure 2B in the "Detailed Description":

Fig. 2B exemplary illustrates a flow diagram showing the operation of the dual mode wireless power receiver 100 exemplary illustrated in

Fig. 2A, ***in the charging mode***. ... On receiving sufficient level of power from the wireless power transmitter 200, the dual mode wireless power receiver 100 powers up and starts communicating with the wireless power transmitter 200. Depending on the type of wireless power transmitter 200, ***the control logic circuit 105 adjusts the impedance*** of the impedance network 101 of the first circuitry.

Ex. 1007, [0034] (emphasis added); *also* Ex. 1006, [0050]; Ex. 2008, ¶ 92.

Additional support for each proposed limitation of the substitute claims as a whole is identified in the following table. Ex. 2008, ¶ 94.

	Limitation	Support
21.1	A dual mode wireless power receiver configured to selectively apply a received power to a load device and utilize at least a part of the stored power to power-up a secondary wireless power receiver and communicate with said secondary wireless power receiver to cause an action or transaction or charge said secondary wireless power receiver's load device, said dual mode wireless	A dual mode wireless power receiver (“DMWPR”) is described throughout the ‘312 Provisional and ‘310 and ‘070 Applications. Exs. 2004, 1006, 1007. An illustrative schematic for a DMWPR is depicted in Fig. 1 of the ‘070 Application, the ‘310 Application, and the ‘312 Provisional. Ex. 1006, ‘070 Application, p. 56; Ex. 1007, ‘310 Application, p. 34; Ex. 2004, ‘312 Provisional, p. 27. An illustrative schematic for a DMWPR in communication mode with secondary wireless power receiver is depicted in Fig. 3 of the ‘070 Application, ‘310 Application and the ‘312 Provisional. Ex. 1006, ‘070 Application, p. 59; Ex. 1007, ‘310 Application, p. 37; Ex. 2004, ‘312 Provisional, p. 29. The ‘070 Application discloses: “[a] [DMWPR] configured to selectively apply a received power to a load device and utilize at least a part of the stored power to power-up and communicate with a secondary wireless power receiver to cause an action or transaction or charge the secondary wireless power receiver’s load device”. Ex. 1006,

	Limitation	Support
	power receiver comprising:	'070 Application, p. 5, [0006]. The '310 Application discloses: “[a] [DMWPR] configured to selectively apply a received power to a load device and utilize at least a part of the stored power to power-up and communicate with a secondary wireless power receiver to cause an action or a transaction or charge a load device of the secondary wireless power receiver” Ex. 1007, '310 Application, p. 4, [0007]. The '312 Provisional discloses: “[a] dual mode wireless charging receiver configured to selectively apply a received power to a load device and utilize at least a part of the power to power-up, communicate and charge a secondary wireless power receiver”. Ex. 2004, '312 Provisional, p. 2, [0004].
21.2	one of coil and capacitor electrodes;	Fig. 2A of the '070 Application, the '310 Application, and the '312 Provisional discloses receiver coil 106 and capacitor electrodes 203. Ex. 1006, '070 Application, p. 57; Ex. 1007, '310 Application, p. 35; Ex. 2004, '312 Provisional, p. 28. In reference to Fig. 2A, receiver coil and capacitor electrodes are described. Ex. 1006, '070 Application, pp. 18-19, [0048]-[0049] (“receiver coil 106” and “capacitor electrodes 203”); Ex. 1007, '310 Application, pp. 13-14, [0033]-[0034] (“receiver coil 106” and “capacitor electrodes 203”); Ex. 2004, '312 Provisional, pp. 11-12, [0027]-[0028] (“receiver coil 106” and “capacitor” 203). Furthermore, the '070 Application and the '310 Application discloses “one of a coil and capacitor electrodes” and “coil or capacitor electrodes”. Ex. 1006, '070 Application, pp. 16, 20, [0043], [0051]; Ex. 1007, '310 Application, pp. 11, 15, [0027],

	Limitation	Support
		[0035]. The '312 Provisional discloses "a coil or a capacitor". Ex. 2004, '312 Provisional, 12, [0030].
21.3	a first circuitry comprising:	At least the Figs. 1, 3, 5A, 5B, of the '070 Application, the '310 Application, and the '312 Provisional depicts schematic of the first circuitry. Ex. 1006, '070 Application, pp. 56, 59, 62, 63; Ex. 1007, '310 Application, pp. 34, 37, 40, 41; Ex. 2004, '312 Provisional, pp. 27, 29, 32. Figs. 8A-C, 9A-D, 10A-H of the '070 Application also depicts schematic of the first circuitry and various embodiments of the first circuitry. Ex. 1006, '070 Application, pp. 66-76. Furthermore, first circuitry is described throughout the '070 Application, the '310 Application, and the '312 Provisional. <i>E.g.</i>, Ex. 1006, '070 Application, p. 5, [0006], Ex. 1007, '310 Application, p. 4, [0007]; Ex. 2004, '312 Provisional, p. 2, [0004] ("The first circuitry comprises an impedance network, a switch network, a filter capacitor, and one or more switches").
21.4	an impedance network <u>comprising two or more electrical components, one of which must be a passive component and one of which must be either an active component or a switch;</u>	At least the Figs. 1, 3, 5A, 5B, of the '070 Application, the '310 Application, and the '312 Provisional depicts an impedance network 101. Ex. 1006, '070 Application, pp. 56, 59, 62, 63; Ex. 1007, '310 Application, pp. 34, 37, 40, 41; Ex. 2004, '312 Provisional, pp. 27, 29, 32. Figs. 8A-C, 9A-D of the '070 Application also depicts an impedance network while Figs. 10A-H depicts various embodiments of the first circuitry with variations of the impedance network. Ex. 1006, '070 Application, pp. 66-76. Impedance network is described in the '070 Application, the '310 Application, and the '312 Provisional. <i>E.g.</i>, Ex. 1006, '070 Application, pp. 16, 36-43, [0044]. [0078]-[0093]; Ex. 1007, '310

	Limitation	Support
		Application, p. 12, [0028]; Ex. 2004, '312 Provisional, p. 9, [0024]. The additional limitation “comprising two or more electrical components, one of which must be a passive component and one of which must be either an active component or a switch” is supported by the '070 Application, the '310 Application, and the '312 Provisional which discloses the following: “The impedance network 101 comprises <i>one or more of passive electronic components</i>, for example, a resistor, a capacitor, a magnetic device, a transducer, transformer etc.; <i>active electronic components</i>, for example, a diode, a transistor such as a metal oxide semiconductor field effect transistor (MOSFET), a bipolar transistor, etc., operational amplifiers, an optoelectronic device, etc., and <i>electronic switches</i>. These electronic components in combination are utilized to vary impedance of the [DMWPR] 100 prior to transmitting power to a secondary wireless power receiver 300.” Ex. 1006, '070 Application, p. 16, [0044]; Ex. 1007, '310 Application, p. 12, [0028]; Ex. 2004, '312 Provisional, p. 9, [0024].
21.5	a switch network;	At least Figs. 1, 5A, 5B, of the '070 Application, the '310 Application, and the '312 Provisional depicts a switch network 102 as part of the first circuitry. Ex. 1006, '070 Application, pp. 56, 62, 63; Ex. 1007, '310 Application, pp. 34, 40, 41; Ex. 2004, '312 Provisional, pp. 27, 32. Figs. 8A-C, 9A-D, 10A-H of the '070 Application also depicts a switch network 102 as part of the first circuitry. Ex. 1006, '070 Application, pp. 66-76. Furthermore, Figs. 6A, 6B, 7A, 7B of the '070 Application, the '310 Application, and the '312 Provisional depicts

	Limitation	Support
		several embodiments of a switch network. Ex. 1006, '070 Application, pp. 64-65; Ex. 1007, pp. 42-45; Ex. 2004, '312 Provisional pp. 33-34. Switch network is described in the '070 Application, the '310 Application, and the '312 Provisional. <i>E.g.</i>, Ex. 1006, '070 Application, pp. 27-32, [0065]-[0073]; Ex. 1007, '310 Application, pp. 23-25, [0049]-[0055]; Ex. 2004, '312 Provisional, pp. 18-20, [0042]-[0048]. The first circuit is also described as comprising of a switch network 102 in the '070 Application, the '310 Application, and the '312 Provisional. <i>E.g.</i>, Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007, '310 Application, p. 4, [0007]; Ex. 2004, '312 Provisional, p. 2, [0004]. An example of a switch network is described as comprising switches S1a, S3, S4, S5, and S6, and configured as either an inverter or a rectifier depending on mode of operation. Ex. 1007, ¶ [0051]; Ex. 1006, ¶ [0068].
21.6	a filter capacitor;	At least Figs. 1, 5A, 5B, of the '070 Application, the '310 Application, and the '312 Provisional depicts a filter capacitor 107 as part of the first circuitry. Ex. 1006, '070 Application, pp. 56, 62, 63; Ex. 1007, '310 Application, pp. 34, 40, 41; Ex. 2004, '312 Provisional, pp. 27, 32. Figs. 8A-C, 9A-D, 10A-H of the '070 Application also depicts a filter capacitor as part of the first circuitry. Ex. 1006, '070 Application, pp. 66-76. Furthermore, the first circuit is described as including a filter capacitor 107 in both '070 Application and the '312 Provisional. <i>E.g.</i>, Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007, '310 Application, p. 4, [0007]; Ex. 2004, '312 Provisional, p. 2, [0004].
21.7	a second circuitry comprising:	At least the Figs. 1, 3, 5A, 5B, of the '070 Application, the '310 Application, and the '312 Provisional depicts schematic of a second circuitry.

	Limitation	Support
		Ex. 1006, '070 Application, pp. 56, 59, 62, 63; Ex. 1007, '310 Application, pp. 34, 37, 40, 41; Ex. 2004, '312 Provisional, pp. 27, 29, 32. Figs. 8A-C, 9A-D of the '070 Application also depicts schematic of a second circuitry and various embodiments of the first circuitry. Ex. 1006, '070 Application, pp. 66-72. Second circuitry is described throughout the '070 Application, the '310 Application, and the '312 Provisional. <i>E.g.</i>, Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007, '310 Application, p. 4, [0007]; Ex. 2004, '312 Provisional, p. 2, [0004]. ("The second circuitry comprises a security engine configured to authenticate, decrypt and encrypt a data transfer between the [DMWPR] and the secondary wireless power receiver, a control logic circuit, and a modulator/demodulator circuit.").
21.8	a control logic circuit; and	At least the Figs. 1, 3, 5A, 5B, of the '070 Application, the '310 Application, and the '312 Provisional depicts a control logic circuit 105 as part of the second circuitry. Ex. 1006, '070 Application, pp. 56, 59, 62, 63; Ex. 1007, '310 Application, pp. 34, 37, 40, 41; Ex. 2004, '312 Provisional, pp. 27, 29, 32. Figs. 8A-C, 9A-D of the '070 Application also depicts a control logic circuit 105 as part of the second circuitry. Ex. 1006, '070 Application, pp. 66-72. Furthermore, the secondary circuit is described as comprising of a control logic circuit 105 in the '070 Application, '310 Application, and the '312 Provisional. <i>E.g.</i>, Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007, '310 Application, p. 4, [0007]; Ex. 2004, '312 Provisional, p. 2, [0004].
21.9	a modulator/demodulator circuit;	At least the Figs. 1, 3, 5A, 5B, of the '070 Application, the '310 Application, and the '312 Provisional depict a modulator/demodulator circuit

	Limitation	Support
		103 as part of the second circuitry. Ex. 1006, '070 Application, pp. 56, 59, 62, 63; Ex. 1007, '310 Application, pp. 34, 37, 40, 41; Ex. 2004, '312 Provisional, pp. 27, 29, 32. Figs. 8A-C, 9A-D of the '070 Application also depicts a modulator/demodulator circuit 103 as part of the second circuitry. Ex. 1006, '070 Application, pp. 66-72. A modulator/demodulator 103 is also described in the '070 Application, '310 Application, and the '312 Provisional. <i>E.g.</i> , Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007, '310 Application, p. 4, [0007]; Ex. 2004, '312 Provisional, p. 2, [0004].
21.10	said first circuitry configured to receive said power from a wireless power transmitter;	As established above, the specification discloses and describes the first circuitry. Furthermore, the '070 Application, the '310 Application, and the '312 Provisional discloses a “[DMWPR] configures the first circuitry to receive the power from an external wireless power transmitter”. <i>E.g.</i> , Ex. 1006, '070 Application, p. 5, [0006]; Ex. '310 Application, p. 3, [0007]; Ex. 2004, '312 Provisional, p. 2, [0004].
21.11	said first circuitry, based on an input from said control logic circuit, configured to change, <u>while said first circuitry is configured to receive said power from a wireless power transmitter, the impedance of said impedance network and topology of said</u>	The '070 Application and the '310 Application discloses at least: “The first circuitry, based on an input from the control logic circuit is configured to change the impedance of the impedance network and topology of the switch network to obtain a modified form of the received power, and apply the modified form of the power to the load device, for example, a Charge Management Integrated Circuit (CMIC), a Power Management Integrated Circuit (PMIC), a simple battery charger, a battery, a capacitor, etc., that consumes or stores or enables the storage of the modified power.”

	Limitation	Support
	switch network to obtain a modified form of said received power, and apply said modified form of said power to said load device;	Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007. '310 Application, p. 4, [0007]. The '312 Provisional discloses at least: “The first circuitry, based on an input from the control logic circuit is configured to change the impedance of the impedance network and topology of the switch network to obtain a modified form of the received power, and apply the modified form of the power to the load device, for example, a battery.” Ex. 2004, '312 Provisional, p. 2, [0004]. This limitation is further disclosed and described in the '070 Application, the '310 Application, and the '312 Provisional. <i>E.g.</i>, Ex. 1006, '070 Application, p. 6, 21, 36-43, [0010], [0054], [0078]-[0093]; Ex. 1007, '310 Application, p. 5, 16, [0008], [0037]; Ex. 2004, '312 Provisional, p. 4, 12-13, [0007], [0032]. The additional limitation “while said first circuitry is configured to receive said power from a wireless power transmitter, the” is supported by the '070 Application, the '310 Application, and the '312 Provisional which discloses the following: “In the charging mode, dual mode wireless charging receiver configures the first circuitry to receive the power from an external wireless power transmitter. The first circuitry, based on an input from the control logic circuit is configured to change the impedance of the impedance network and topology of the switch network to obtain a modified form of the received power, and apply the modified form of the power to the load device”

	Limitation	Support
		Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007, '310 Application, p. 4, [0007]; <i>see also</i> Ex. 2004, '312 Provisional, p. 2, [0004]. Furthermore, the '070 Application and the '310 Application further supports the amendment: On receiving sufficient level of power from the wireless power transmitter, the [DMWPR] powers up and starts communicating with the wireless power transmitter. The [DMWPR] adjusts the impedance of its impedance network. The [DMWPR] also adjusts the topology of the switch network, for example from the default non-synchronous rectifier to fully synchronous rectifier. Ex. 1006, '070 Application, p. 7, [0009]; Ex. 1007, '310 Application, p. 6, [0010].
21.12	said first circuitry, based on an input from said control logic circuit, configured to change said topology of said switch network and said impedance of said impedance network to transmit at least part of said stored power to said secondary wireless power receiver to power-up said secondary wireless power receiver;	The '070 Application and the '310 Application discloses at least: “In the communication mode, the [DMWPR] configures the first circuitry, based on an input from the control logic circuit, to change the topology of the switch network and the impedance of the impedance network to transmit a part of the stored power to the secondary wireless power receiver to power-up the secondary wireless power receiver.” Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007, '310 Application, p. 4, [0007]. The '312 Provisional discloses at least: “In a communication mode, the dual mode wireless charging receiver configures the first circuitry, based on an input from the control logic circuit, to change the topology of the switch network and the impedance of the impedance network to transmit at least part of the modified power to the secondary

	Limitation	Support
		wireless power receiver to power-up the secondary wireless power receiver.” Ex. 2004, '312 Provisional, p. 2, [0004].
21.13	said second circuitry, on power-up of said secondary wireless power receiver, configured to identify a type of said secondary wireless power receiver and identify a wireless power protocol of said secondary wireless power receiver;	The '070 Application, the '310 Application, and the '312 Provisional discloses at least: “The second circuitry is configured to identify a type of the secondary wireless power receiver and identify a wireless power protocol of the secondary wireless power receiver.” Ex. 1006, '070 Application, p. 5, [0006]; Ex. 1007, '310 Application, p. 4-5, [0007]; Ex. 2004, '312 Provisional, p. 2-3, [0004].
21.14	said second circuitry, configured to receive and interpret data from said secondary wireless power receiver in said identified wireless power protocol;	The '070 Application, the '310 Application, and the '312 Provisional discloses “the second circuitry of the [DMWPR] receives and interprets the data from the non-authenticating secondary wireless power receiver”, “receives, decrypts and interprets the data from the one-way authenticating secondary wireless power receiver”, and “receives, decrypts and interprets data from the two-way authenticating secondary wireless power receiver”. Ex. 1006, '070 Application, p. 6-7, [0007]-[0008]; Ex. 1007, '310 Application, p. 5-6, [0008]-[0009]; Ex. 2004, '312 Provisional, p. 3-4, [0005]-[0006] The '070 Application, the '310 Application, and the '312 Provisional further discloses and describes interpreting data from a secondary wireless power receiver. <i>E.g.</i> , Ex. 1006, '070 Application, p. 17-18, [0047]; Ex. 1007, '310 Application, p. 13, [0031]; Ex. 2004, '312 Provisional, p. 10, [0026].

	Limitation	Support
21.15	said second circuitry, based on said interpretation, configured to perform a function associated with said transmitted power in conjunction with said first circuitry.	The '070 Application, the '310 Application, and the '312 Provisional discloses "The second circuitry interprets the received request and performs a function associated with the transmitted power in conjunction with the first circuitry. For example, the [DMWPR] interprets the request from the power sinking secondary wireless power receiver to perform a function such as increase the transmitted power, decrease the transmitted power, maintain the transmitted power, turn off the transmitted power, etc. and takes action as per the wireless power protocol for such a type of secondary wireless power receiver." Ex. 1006, '070 Application, p. 6-7, [0007]-[0008]; Ex. 1007, '310 Application, p. 5-6, [0008]-[0009]; Ex. 2004, '312 Provisional, p. 3-4, [0005]-[0006]. The '070 Application, the '310 Application, and the '312 Provisional further discloses and describes performing a function based on said interpretation. <i>E.g.</i>, Ex. 1006, '070 Application, p. 17-18, [0047]; Ex. 1007, '310 Application, p. 13, [0031]; Ex. 2004, '312 Provisional, p. 10, [0026].
22	The dual mode wireless power receiver of claim [1] <u>21</u> , wherein said switch network of said first circuitry is configured as one of an inverter and rectifier.	The written description support for [DMWPR] is shown above in 21.1. The written description support for switch network of said first circuitry is shown above in 21.5. At least the Figs. 6A, 6B, 7A, and 7B of the '070 Application, the '310 Application, and the '312 Provisional depicts switch network 102 configured as one of inverter and rectifier. Ex. 1006, '070 Application, pp. 64-65; Ex. 1007, pp. 42-45; Ex. 2004, '312 Provisional pp. 33-34. The switch network of said first circuitry configured as one of an inverter and rectifier is at least described in the context of Figs. 6A, 6B, 7A,

	Limitation	Support
		and 7B. Ex. 1006, '070 Application, pp. 28-29, [0067]-[0070]; Ex. 1007, '310 Application, pp. 23-25, [0051]-[0054]; Ex. 2004, '312 Provisional, pp.19-20, [0044]-[0047].

By at least the above disclosures, each limitation as well as the claims as a whole is well supported by the '312 Provisional and/or the '310 Application and the '070 Application, and, therefore, do not constitute new matter. Ex. 2008, ¶ 95. A POSA would understand that the inventors possessed the inventions of Claims 21 and 22 as of Aug. 13, 2012 as shown in the '312 Provisional, or, alternatively, no later than Aug. 12, 2013. *Id.* The '070 Application also supports Claims 21 and 22. *Id.*

VII. PROPOSED SUBSTITUTE CLAIMS 21 AND 22 ARE PATENTABLE OVER THE ORIGINAL GROUND AND NEW COMBINATIONS

For the present purposes, WiPQTUS relies on the definition of the POSA provided by Dr. Phinney and as stated by the Board. Inst. Dec., pp. 19–20.

A. Additional Claim Construction

As explained by Dr. Direen, “topology” would be understood by a POSA to mean “a collection of circuit components that perform a type of rectification or a type of power inversion.” Ex. 2008, ¶ 22. Further, as explained by Dr. Direen, “change topology ... of switch network” would be understood by a POSA to mean

“configured to change the topology in a way that changes the type of rectifier or the type of inverter or a rectifier to an inverter or an inverter to a rectifier of the switch network circuit.” Ex. 2008, ¶ 42.

The ‘929 and ‘399 Patent specifications also supports this understanding of the term “topology.” Specifically, the specifications describes at least five switch network “topologies”: (1) a non-synchronous full-bridge rectifier; (2) a half-synchronous full-bridge rectifier; (3) a fully-synchronous full-bridge rectifier; (4) a half-bridge inverter; and (5) a full-bridge inverter. *See, e.g.*, Ex. 2002, ‘929 Patent, 3:67-4:3, 4:9-18, 14:41-58, Figs. 6A-B, Figs. 7A-B; *see also* Ex. 1001, 4:4-7; 4:14-23; 16:49-61; Ex. 2008, ¶ 23 - 25. The specifications discusses changing the topology during receiving power mode, for example, when it explains that “[t]he dual mode wireless power receiver also adjusts the topology of the switch network, for example from the default non-synchronous rectifier to fully-synchronous rectifier.” ‘929 Patent, 3:67-4:3; Ex. 2008, ¶¶ 26 - 55. Further, the specification explains that “[d]epending on the level of wireless power being received, the control logic circuit 105 adjusts the topology of the switch network 102 of the first circuitry.” Ex. 2002, ‘929 Patent, 8:58-60. Ex. 2008, ¶ 26.

Looking at Figs. 6B, 7A, and 7B, note that there are switches identified as being “always ON,” “always OFF,” and switches with attendant wave forms

cycling on and off. Ex. 2008, ¶¶ 38 – 39, 53. The switches that change the topology between rectification and inversion are marked as “always ON” or “always OFF.” *Id.* By changing these switches, the switch network can be configured as, for example, a non-synchronous full-bridge rectifier, a half-synchronous full-bridge rectifier, or a fully-synchronous full-bridge rectifier. *Id.* Each of these “topologies” differs in functionality based on factors such as the direction of power transfer, the efficiency of power transfer, and the amount of power transferred. Ex. 2008, ¶¶ 53.

B. Substitute Claims are Patentable Over the Cited Art.

Neither the Chatterjee, Corbridge, and Cook combination, nor the Chatterjee, Corbridge, and Lee combination teach or suggest first circuitry that is “configured to change, while configured to receive said power, the impedance of said impedance network and topology of said switch network to obtain a modified form of said received power” as required by Substitute Claim 21. Ex. 2008, ¶ 59.

1. Ground 1 – Chatterjee and Corbridge

Chatterjee merely discusses using a synchronous bridge rectifier, but never teaches or suggests the possibility of using other types of rectifiers or switching between rectifier types during operation. *See* Ex. 1003, Chatterjee, [0007], [0038], [0061], Claim 4; Ex. 2008, ¶ 61.

Corbridge explains that “[t]he power component of the received AC signal is converted to a DC power signal using a synchronous bridge *or* rectifier formed by diodes.” Ex. 1004, Corbridge, [0085] (emphasis added). Corbridge also explains that “[a] half-synchronous bridge may *alternatively* be used. Ex. 1004, [0085] (emphasis added). However, Corbridge never teaches or suggests the possibility of switching between the use of these rectifier topologies while in operation. Ex. 2008, ¶ 62.

Neither Chatterjee nor Corbridge disclose an “impedance network” as further recited in Claim 21. Response, p. 52-54; Ex. 2003, ¶ 150; Ex. 2008, ¶ 63. For example, as explained in the Patent Owner’s Response, Chatterjee’s bi-directional coil assembly with a single capacitor and wire (as alleged by Dr. Phinney, Ex. 1002, ¶ 115 (in the configuration shown in Ex. 1003, Fig. 6B (see Ex. 1002, ¶ 113))) does not disclose the limitation of an “impedance network” which requires two or more electrical components as further recited in Claim 21. *Id.*

Further, Samsung and Dr. Phinney admit that “neither Chatterjee nor Corbridge expressly disclose changing impedance of the impedance network while the inductive signal interface is configured to receive power.” *Response to MTA*, p. 10; Ex. 1015, ¶ 52 (identical statement). Therefore, proposed substitute Claims 21 and 22 are patentable (novel and non-obvious) over Ground 1. Ex. 2008, ¶ 65.

2. Combination of Chatterjee, Corbridge, and Cook

In Cook, rectifier 250 is either a non-synchronous rectifier or a synchronous rectifier. *See* Ex. 1017, Cook, [0112]; Ex. 2008, ¶ 67. Cook does discuss the possible advantage of using a synchronous rectifier despite its added complexity, but Cook does not teach the possibility of changing network topology between the two based on received power. *See* Cook [0114], [0272]; Ex. 2008, ¶ 67. Because Cook does not teach this limitation, its combination with Chatterjee and Corbridge still fails to render Substitute Claims 21 and 22 obvious. Ex. 2008, ¶ 68.

As previously explained, there is no need to discuss motivation to combine the references of the combination when together they do not meet all claim limitations. *See, generally, Rhine v. Casio, Inc.*, 183 F.3d 1342, 1346 (Fed. Cir. 1999); *see* Response, pp. 28 – 29. Nevertheless, Dr. Phinney's conclusory statements (Ex. 1015, ¶ 54) are inadequate. Ex. 2008, ¶ 74 – 77.

3. Combination of Chatterjee, Corbridge, and Lee

Like Cook, while Lee explains that “various RF-to-DC converters may be used,” specifically identifying “partial and full rectifiers, regulators, bridges, doublers, as well as linear and switching converters,” Lee does not teach the possibility of changing network topology between the two based on received power. Ex. 1018, Lee, [0055]; Ex. 2008, ¶ 70. Because Lee does not teach this

limitation, its combination with Chatterjee and Corbridge still fails to render substitute Claims 21 and 22 obvious. Ex. 2008, ¶ 71. Again, there is no need to discuss motivation to combine the references of the combination since the combination is missing limitations. Nevertheless, Dr. Phinney's conclusory statements (Ex. 1015, ¶ 101) are inadequate. Ex. 2008, ¶ 74.

4. Regarding Knowledge of POSA

As previously explained (Response, n. 2; Preliminary Response, p. 28 – 31), using “knowledge of a POSA” in an attempt to account for an otherwise missing limitation requires additional showings beyond a conclusory allegation. *Arendi v. Apple, Inc.*, 832 F. 3d 1355, 1363 (Fed. Cir. 2016); *DSS Technology Mngt., Inc. v. Apple Inc.*, 885 F.3d 1367, 1374 (Fed. Cir. 2018).

As discussed above, changing topology during receive mode is not disclosed by Chatterjee, Corbridge, Cook, or Lee. Ex. 2008, ¶¶ 61-71. Furthermore, reference to some ill-defined “knowledge of a POSA” does not make up for this missing limitation. Ex. 1015, *e.g.*, ¶ 54; 101; Ex. 2008, ¶¶ 72-77.

For example, Claim 21 requires at least additional control logic that is able to monitor the power delivered to a “load device” such as the battery in order to manage the “change in topology of the switch network to obtain a modified form of” received power. Ex. 2008, ¶¶ 57, 72 – 77, 94. None of Chatterjee, Corbridge,

Cook, or Lee disclose such logic, much less disclose such logic connected to a switch network capable of changing topology. Ex. 2008, ¶¶ 72 – 77. Further, Dr. Phinney does not offer any detailed explanation of how these references could be modified to implement this requisite control logic. Ex. 2008, ¶¶ 60, 72 - 77. In conclusion, Claims 21 and 22 are novel and non-obvious. Ex. 2008, ¶ 78-79.

VIII. PROPOSED SUBSTITUTE CLAIMS ARE SUBSTANTIALLY IDENTICAL TO THE ORIGINAL CLAIMS

The substitute claims limit the claims to the claim constructions proposed by the WiPQTUS in its Response. The proposed substitute claims are substantially identical to the original patent claims or, if anything, are narrower, so WiPQTUS requests a determination that the substitute claims 21 and 22 and original claims 1 and 2 are substantially identical within the meaning of 35 U.S.C. § 252. PTAB Consol. Tr. Pract. Guide, 70; 84 Fed. Reg. 64,280 (Nov. 21, 2019). WiPQTUS acknowledges its duty of candor. WiPQTUS has fully complied with its duty.

IX. CONCLUSION

WiPQTUS respectfully requests that, should the Challenged Claims 1 and 2 be found unpatentable, the Board grant this contingent motion to amend.

IPR2024-00023
U.S. Patent No. 10,038,339
Patent Owner's Revised Contingent Motion to Amend

Date: October 9, 2024

Respectfully Submitted,

/s/ Brian A. Carpenter
Brian A. Carpenter
USPTO Reg. No. 37,109

CERTIFICATE UNDER 37 C.F.R. § 42.24(d)

This Patent Owner's Contingent Motion to Amend Under 37 C.F.R. § 42.121 complies with the page limitation of 25 pages pursuant to 37 C.F.R. §§ 42.24(a)(1)(vi). As calculated by Microsoft Word, it contains 25 pages, excluding the parts exempted by 37 C.F.R. §§ 42.24(a).

/s/ Brian A. Carpenter
Brian A. Carpenter
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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(b), the undersigned certifies that on October 9, 2024 a copy of this REVISED CONTINGENT MOTION TO AMEND UNDER 37 C.F.R. § 42.121 was served on the following via electronic mail:

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LIST OF EXHIBITS

Exhibit Number	Exhibit
2008	Declaration of Dr. Randal H. Direen in Support of Patent Owner's Revised Motion to Amend (the “Direen Supp. Decl.”)

APPENDIX A
CLAIM LISTING

Below are claim listing of proposed substitute claims 21-22 for claims 1-2. Parentheses are used to indicate which claim is proposed to be substituted by the proposed substitute claims. Brackets are used to indicate deleted text. Underlines are used to indicate inserted text.

PROPOSED SUBSTITUTE CLAIMS

21. (proposed substitute for claim [1]) A dual mode wireless power receiver configured to selectively apply a received power to a load device and utilize at least a part of the stored power to power-up a secondary wireless power receiver and communicate with said secondary wireless power receiver to cause an action or transaction or charge said secondary wireless power receiver's load device, said dual mode wireless power receiver comprising:

one of coil and capacitor electrodes;

a first circuitry comprising:

an impedance network comprising a collection of two or more electrical components, one of which must be a passive component and one of which must be either an active component or switch;

a switch network;

a filter capacitor;

a second circuitry comprising:

a control logic circuit; and

a modulator/demodulator circuit;

said first circuitry configured to receive said power from a wireless power transmitter;

said first circuitry, based on an input from said control logic circuit, configured to change, while configured to receive said power, the impedance of said impedance network and topology of said switch network to obtain a modified form of said received power, and apply said modified form of said power to said load device;

said first circuitry, based on an input from said control logic circuit, configured to change said topology of said switch network and said impedance of said impedance network to transmit at least part of said stored power to said secondary wireless power receiver to power-up said secondary wireless power receiver;

said second circuitry, on power-up of said secondary wireless power receiver, configured to identify a type of said secondary wireless power receiver and identify a wireless power protocol of said secondary wireless power receiver;

said second circuitry, configured to receive and interpret data from said secondary wireless power receiver in said identified wireless power protocol;

said second circuitry, based on said interpretation, configured to perform a function associated with said transmitted power in conjunction with said first circuitry.

22. (proposed substitute for claim [2]) The dual mode wireless power receiver of claim [1] 21, wherein said switch network of said first circuitry is configured as one of an inverter and a rectifier.