

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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NEVRO CORP.,  
Petitioner,

v.

BOSTON SCIENTIFIC NEUROMODULATION CORP.,  
Patent Owner.

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Case IPR2018-00141  
Patent 8,644,933 B2

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Before HUBERT C. LORIN, MICHAEL W. KIM, and AMANDA F. WIEKER,  
*Administrative Patent Judges.*

WIEKER, *Administrative Patent Judge.*

DECISION  
Denying Institution of *Inter Partes* Review  
*37 C.F.R. § 42.108*

## I. INTRODUCTION

### A. *Background*

Nevro Corp. (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1, 4, 34, 35, 40, and 48 (“the challenged claims”) of U.S. Patent No. 8,644,933 B2 (Ex. 1001, “the ’933 patent”). Paper 1 (“Pet.”). Boston Scientific Neuromodulation Corp. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted unless the information presented in the Petition and the Preliminary Response shows that “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314; *see also* 37 C.F.R § 42.4(a) (“The Board institutes the trial on behalf of the Director.”). Taking into account the arguments presented in the Preliminary Response, we conclude that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail with respect to the challenged claims.

Accordingly, we decline to institute an *inter partes* review.

### B. *Related Proceedings*

The parties identify the following matter related to the ’933 patent (Pet. 57; Paper 3, 2):

*Boston Scientific Corp. et al. v. Nevro Corp.*, Case No. 1:16-cv-01163 (D. Del.).

### C. *The ’933 Patent*

The ’933 patent is titled “Techniques for Controlling Charging of Batteries in an External Charger and an Implantable Medical Device,” and issued on February 4, 2014, from U.S. Application No. 13/482,504, filed on May 29, 2012. Ex. 1001, (21), (22), (54).

According to the '933 patent, prior art techniques for charging an implanted battery in an implanted medical device suffered from problems of excess heat generation. *Id.* at 1:61–63. For example, when prior art implanted batteries were charged by induction from an external charger, and where the battery of the external charger was also being charged, the simultaneous full-power charging of both batteries caused excess heat to develop in the external charger. *Id.* at (57), 1:54–57, 1:64–2:8. To avoid this problem, the '933 patent discloses charging algorithms “for controlling the charging of both an external battery in the external charger and an implant battery in an implantable medical device . . . [wherein] the various charging algorithms are designed to ensure that both batteries are ultimately charged, but in a manner considerate of heat generation.” *Id.* at 2:42–49.

Figures 2 and 3A are reproduced below.

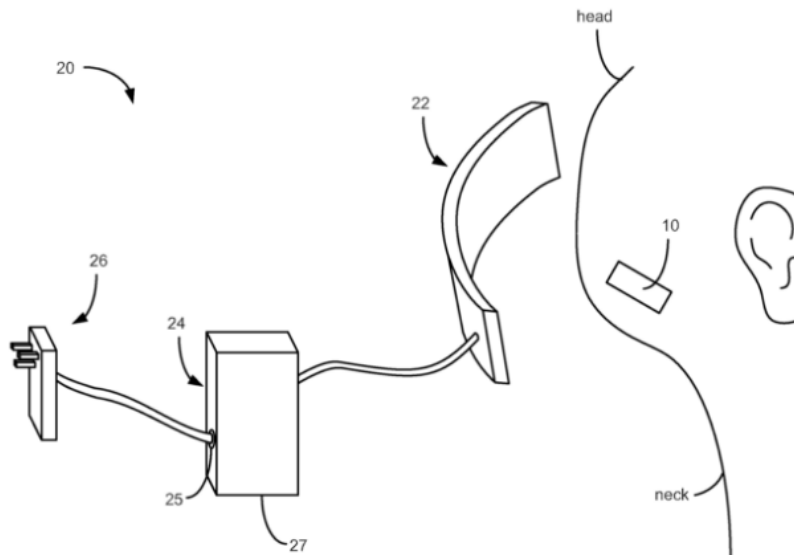


Figure 2

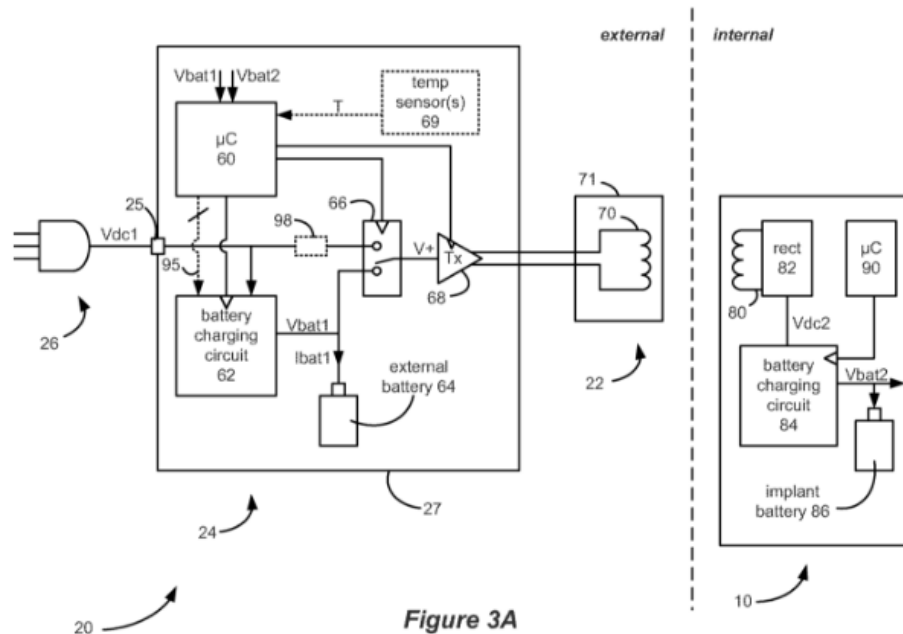


Figure 3A

Figure 2 depicts an implanted microstimulator and an external charger, and Figure 3A depicts the circuitry associated with those components. *Id.* at 2:13–21.

“The basic function of the external charging components 20 is to wirelessly recharge an implant battery 86 in the microstimulator 10.” *Id.* at 3:6–8. As shown in Figure 3A, external charger 20 includes external battery 64, battery charging circuit 62, and coil 70, where coil 70 produces a magnetic charging field that is transmitted to implanted microstimulator 10 through transmitter 68. *Id.* at 3:31–34, 3:61–65. As also shown in Figure 3A, implanted microstimulator 10 includes implant battery 86, battery charging circuit 84, and coil 80, where coil 80 receives the transmitted charging field from external charger 20. *Id.* at 3:21–27.

The '933 patent discloses various algorithms for charging implant battery 86 and external battery 64. *Id.* at 4:59–61. Figure 4, reproduced below, provides one such example.

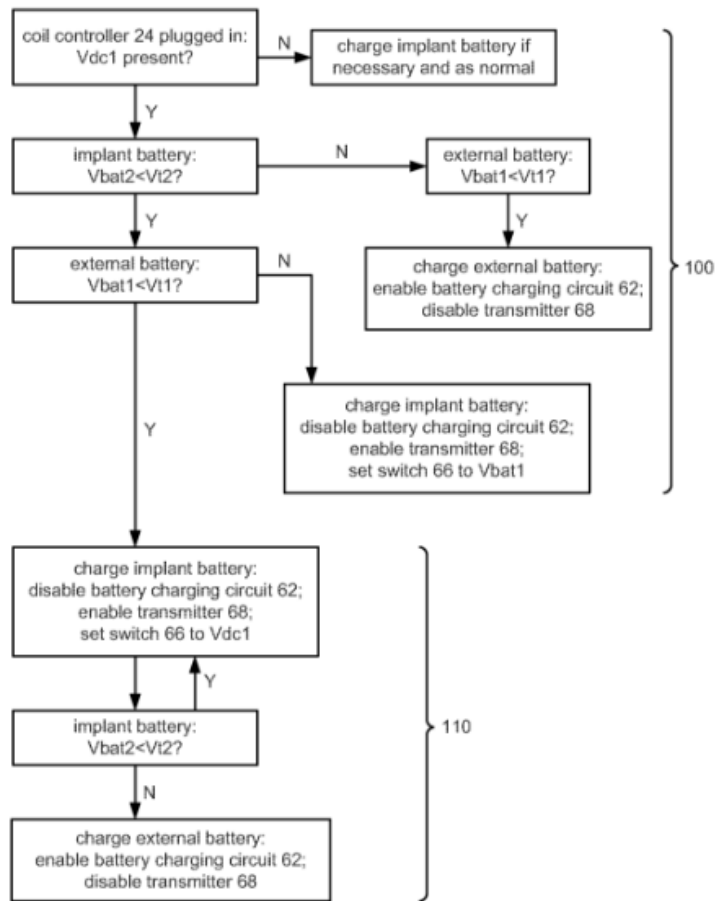


Figure 4

Figure 4 illustrates a charging algorithm. Ex. 1001, 2:21–23.

As shown in Figure 4, the algorithm begins with initial steps 100. *Id.* at 5:6–11. First, “microcontroller 60 in the coil controller 24 determines if it is coupled via plug 26 to an external power source such as a wall socket.” *Id.* at 17–20. If so, the “initial steps 100 ask whether either or both of the external battery 64 or the implant battery 86 require charging. This can comprise assessing whether the voltage of those batteries 64 and 86, i.e.,  $V_{bat1}$  and  $V_{bat2}$  respectively, is below some capacity threshold voltage, i.e.,  $V_{t1}$  and  $V_{t2}$  respectively.” *Id.* at 5:29–37. If both batteries require charging, “the algorithm exits initial steps 100 and begins steps designed to eventually charge both batteries in a manner considerate of heat

generation.” *Id.* at 6:10–15. For example, in the embodiment of Figure 4, “charging of the implant battery 62 is given precedence, and charging of the external battery 64 does not commence until the implant battery 62 is fully charged.” *Id.* at 6:16–20. Thus, “transmitter 68 is enabled by the microcontroller 60 in the coil controller 24 to produce a magnetic charging field for charging the implant battery 86 . . . [and] battery charging circuit 62 for external battery 64 is automatically disabled by the microcontroller 60.” *Id.* at 6:20–34. “[W]hen the implant battery 86 becomes sufficiently charged ( $V_{bat2} > V_{t2}$ ), then charging of the implant battery 86 can cease, and charging of the external battery 64 can begin.” *Id.* at 6:40–43.

Figures 5–11 disclose alternative algorithms for charging the implant battery and external battery, in manners considerate of heat generation. *See id.* at Fig. 5 (prioritizing external battery), Fig. 6A (alternating charging of both batteries), Fig. 7A (providing full charging power to implanted battery; providing weak charging power to external battery), Fig. 8 (providing weak charging power to implanted battery; providing full charging power to external battery), Fig. 9 (providing weak charging power to both batteries), Figs. 10–11 (including temperature threshold control), 6:56–11:13.

#### *D. Illustrative Claim*

Of the challenged claims, claims 1 and 34 are independent. Claim 1 is illustrative and is reproduced below.

1. An external charger for interfacing with an implantable medical device, comprising:
  - a battery charging circuit for controlling the charging of an external battery in the external charger;
  - a transmitter for controlling a wireless transmission to the implantable medical device, wherein the wireless transmission

provides power to charge an implant battery in the implantable medical device;

control circuitry for implementing an algorithm to controllably enable the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery require charging.

Ex. 1001, 11:41–53.

### *E. Applied References*

Petitioner relies upon the following references:

Schommer et al., U.S. Patent No. 7,286,881 B2, filed April 30, 2004, issued October 23, 2007 (Ex. 1004, “Schommer”); and

Veselic et al., U.S. Patent Application Publication No. 2004/0164708 A1, filed February 21, 2003, published August 26, 2004 (Ex. 1005, “Veselic”).

Pet. 1–2. Petitioner also relies upon the Declaration of Dr. Mark Kroll (“the Kroll Declaration,” Ex. 1003).

### *F. Asserted Grounds of Unpatentability*

Petitioner challenges the patentability of claims 1, 4, 34, 35, 40, and 48 of the ’933 patent based on the following grounds. Pet. 1–2.

<b>Reference(s)</b>	<b>Basis</b>	<b>Claim(s) Challenged</b>
Schommer “in view of the knowledge of a person of ordinary skill in the art” ( <i>see</i> Pet. 1)	§ 103	1, 4, 34, 35, and 40
Schommer and Veselic	§ 103	48

## II. DISCUSSION

### *A. Claim Construction*

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable interpretation in light of the specification of the patent in

which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Tech., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under that standard, we generally give claim terms their ordinary and customary meaning, as understood by a person of ordinary skill in the art in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. “control circuitry for implementing . . .” (claims 1, 4)  
“control circuitry programmed to control . . .” (claims 34, 35, 40, 48)

Independent claim 1 recites “control circuitry for implementing an algorithm to controllably enable the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery require charging,” and independent claim 34 recites “control circuitry programmed to control the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery requires charging.” Ex. 1001, 11:49–53, 13:63–14:2.

In district court, Petitioner argued that these claim limitations are means-plus-function limitations, governed by 35 U.S.C. § 112 ¶ 6. Pet. 14. Petitioner states,

While the claims may not be limited to the narrower means-plus-function construction under the BRI standard applicable here, even if these elements were construed under the BRI to be “means-plus-function” elements limited to specifically disclosed algorithms within the ’933 patent’s specification, the prior art cited herein discloses structures or equivalents therefor that would invalidate the challenged claims.

*Id.* Petitioner identifies corresponding structure for these limitations, “to the extent” they are construed to be subject to 35 U.S.C. § 112 ¶ 6. *Id.* at 14–16.

Patent Owner contends that Petitioner has not rebutted adequately the presumption that these phrases, which do not recite the word “means,” are not



subject to 35 U.S.C. § 112 ¶ 6. Prelim. Resp. 17–18. Patent Owner also contends that “control circuitry” denotes sufficient structure, because the “claims themselves specify the inputs to the circuit, its operation and output,” wherein the “‘control circuitry’ performs a straightforward comparison and outputs a signal or signals consistent with that comparison.” *Id.* at 18–19 (citing *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1365 (Fed. Cir. 2013)).

On this record, Petitioner provides no reasoning to overcome the presumption that “control circuitry” is *not* subject to 35 U.S.C. § 112 ¶ 6. Specifically, Petitioner has not shown that these phrases fail to recite sufficiently definite structure. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015) (en banc) (“When a claim term lacks the word ‘means,’ the presumption [that § 112 ¶ 6 does not apply] can be overcome and § 112, para. 6 will apply if the challenger demonstrates that the claim term fails to ‘recite sufficiently definite structure’ or else recites ‘function without reciting sufficient structure for performing that function.’”) (citations omitted); *see also Power Integrations*, 711 F.3d at 1364–65 (discussing cases holding that the term “circuit” is not a means-plus-function-limitation, especially where the circuit’s operation is described sufficiently so as to denote sufficiently definite structure). Furthermore, the ’933 patent itself discloses that “the control circuitry, e.g., microcontroller 60 (e.g., FIG. 3A) can comprise any number of logic circuits, which circuits can be discrete and coupled together, or which can be integrated in a traditional discrete microcontroller circuit.” Ex. 1001, 11:20–24. While admittedly vague, on this record, we are unpersuaded that this disclosure is sufficient to take “control circuitry” into the realm of 35 U.S.C. § 112 ¶ 6, even under *Williamson*.

Accordingly, for purposes of this Decision, we do not consider the claimed “control circuitry” to be subject to 35 U.S.C. § 112 ¶ 6.

2. “implementing an algorithm to controllably enable . . .” (claims 1, 4)  
 “programmed to control . . .” (claims 34, 35, 40, 48)

Petitioner also proposes for construction the claim language appearing after the term “control circuitry,” discussed in the immediately preceding section. The parties’ respective proposals are shown below (Pet. 9; Prelim. Resp. 16–17):

Claim Language	Petitioner’s Proposal	Patent Owner’s Proposal
<p><u>Claim 1:</u>                      “implementing an algorithm to controllably enable the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery require charging”</p>	<p>“decide per an algorithm to enable the battery charging circuit and the transmitter based on the simultaneous, dual determination (and not independent determinations) that both the external battery and the implant battery require charging”</p>	<p>plain and ordinary meaning, <i>or</i>                      “implementing an algorithm to regulate the charging of both the external battery in the external charging components and an implant battery in the microstimulator through the transmitter when the control circuitry determines that both the external battery and the implant battery require charging”</p>
<p><u>Claim 34:</u>                      “programmed to control the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery requires charging”</p>	<p>“control per a program the battery charging circuit and the transmitter based on the simultaneous, dual determination (and not independent determinations) that both the external battery and the implant battery require charging”</p>	<p>plain and ordinary meaning; <i>or</i>                      “programmed to regulate the charging of both the external battery in the external charging components and an implant battery in the microstimulator through the transmitter when the control circuitry determines that both the external</p>

		battery and the implant battery require charging”
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Petitioner contends that its proposal is consistent with the intrinsic record. Pet. 9. Primarily, Petitioner contends that, during prosecution of the application that issued as the '933 patent, the applicant made narrowing statements to overcome prior art, which Petitioner contends amount to a prosecution disclaimer. *Id.* at 9, 11–13. Specifically, Petitioner contends that the applicant distinguished the Meadows reference (Ex. 1006) by arguing:

Meadows doesn't simultaneously determine whether both the external battery and the implant battery require charging, and then take[] steps based on that determination. . . . Nowhere does Meadows determine whether both batteries need charging and take an action based on this dual determination, let alone for the purpose of deciding per an algorithm which of the battery charging circuit and/or the transmitter to enable to charge the external battery and/or the internal battery.

*Id.* at 12 (quoting Ex. 1002, 109) (emphasis omitted).

In response, Patent Owner argues that the cited prosecution statements are not a “clear and unmistakable” disclaimer. Prelim. Resp. 10. According to Patent Owner, the full context of the prosecution history makes clear that Meadows allowed for charging of the external battery or the implant battery, but did not require that *both* batteries be checked prior to charging either battery. *Id.* at 11–13; *see also id.* at 12–13 (quoting Ex. 1002, 109 (“[T]his does not disclose or imply that it had been determined that both batteries 277 and 180 required charging.”)). Moreover, Patent Owner also contends that none of the embodiments disclosed in the '933 patent operate in accordance with Petitioner's construction. *Id.* at 13–14.

On the record before us, we are unpersuaded that Petitioner's proposed construction is supported by the intrinsic record. The specification of the '933

patent is the most instructive evidence before us. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) (“[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.”). Importantly, Petitioner does not direct us to a single embodiment in the ’933 patent in which the control circuitry *simultaneously* determines whether both batteries require charging, as required by Petitioner’s construction. Figure 4, for example, depicts initial steps 100 taken by the disclosed algorithm. As reflected in that figure, the voltages of the implant battery and external battery are checked *serially*, not simultaneously. Ex. 1001, Fig. 4 (first checking whether “implant battery:  $V_{bat2} < V_{t2}$ ,” and then checking whether “external battery:  $V_{bat1} < V_{t1}$ ”), 5:29–37. Every other algorithm disclosed in the ’933 patent also includes serial steps of checking the voltage in each battery. *Id.* at Figs. 5, 6A, 7A, 8A, 9, 10, and 11. No embodiment includes a simultaneous determination. *Id.*; *see also Johns Hopkins Univ. v. Cellpro Inc.*, 152 F.3d 1342, 1355 (Fed. Cir. 1998) (quoting *Vitronics Corp.*, 90 F.3d at 1583 (“A patent claim should be construed to encompass at least one disclosed embodiment in the written description portion of the patent specification. . . . A claim construction that does not encompass a disclosed embodiment is thus ‘rarely, if ever, correct and would require highly persuasive evidentiary support.’”)).

With respect to the prosecution history, both parties recognize that “the PTO is under no obligation to accept a claim construction proffered as a prosecution history disclaimer, which generally only binds the patent owner.” *Tempo Lighting, Inc. v. Tivoli, LLC*, 742 F.3d 973, 978 (Fed. Cir. 2014); *see also* Pet. 10–11, n.2; Prelim. Resp. 15. Nonetheless, we agree with Patent Owner that the prosecution history of the ’933 patent does not limit the construction of these phrases in the manner proposed by Petitioner. Specifically, we are unpersuaded that the cited

portions of the prosecution history rise to the level of a clear and unambiguous disclaimer. Although the applicant used the words “dual” and “simultaneously,” the applicant’s response, as a whole, suggests that the applicant was distinguishing Meadows’ disclosure of charging a battery, but without determining whether both batteries required charging. *See* Ex. 1002, 10 (“Nowhere does Meadows *determine whether both batteries need charging* and take an action based on this dual determination.” “But this does not disclose or imply that *it had been determined that both batteries 277 and 180 required charging.*”) (emphases added). At best, we find the prosecution history ambiguous on this point, which weighs in favor of Patent Owner’s position. For these reasons, we are unpersuaded that the applicant intended to disclaim *all* disclosed embodiments in favor of an arrangement, i.e., a simultaneous determination, that was not disclosed in the application. For these reasons, we are unpersuaded that Petitioner’s construction is supported by the intrinsic record.

Patent Owner proposes construing the terms “controllably enable” and “control” as “regulate.” Prelim. Resp. 16–17. According to Patent Owner, this construction gives effect to the claim language “‘*controllably enable*,’ *i.e.* regulate,” which is purportedly “read[] out” of Petitioner’s construction. *Id.* at 15; *see also* Pet. 9. To that end, Patent Owner cites Figures 4 and 5 of the ’933 patent, in which the algorithm “selectively controls the charging of external and internal batteries.” Prelim. Resp. 15–16 (citing Ex. 1001, 5:6–31).

On this record, we are persuaded by Patent Owner’s position that the broadest reasonable construction of “controllably enable” and “control” is “regulate.” Prelim. Resp. 15–16. In each embodiment disclosed in the ’933 patent, the algorithm regulates (e.g., controls; enables/disables; activates/deactivates) operation of both battery charging circuit 62 and transmitter

68, once it is determined that both batteries require charging. For example, in the embodiment shown in Figure 4, once the algorithm determines that both batteries require charging, battery charging circuit 62 is disabled, while transmitter 68 is enabled. Ex. 1001, Fig. 4; *see also id.* at Fig. 5 (vice versa), Fig. 6A (disable 62, enable 68, and then alternate), Fig. 7A (enable 62 but at reduced power level, enable 68), Fig. 8A (enable 62, duty cycle 68), Fig. 9 (enable 62 and 68 at reduced power levels), Fig. 10 (enable 62 and 68, but set a temperature threshold), Fig. 11 (all of the above). Furthermore, construing “controllably enable” and “control” as “regulate” is consistent with the plain and ordinary meaning of these terms. *See, e.g.,* Merriam-Webster Online Dictionary, *available at* <https://www.merriam-webster.com/dictionary/control> (control: “1b: to exercise restraining or directing influence over: regulate”) (last accessed Apr. 10, 2018); Merriam-Webster Online Dictionary, *available at* <https://www.merriam-webster.com/dictionary/enable> (enable: “1c: to cause to operate”) (last accessed Apr. 10, 2018); THE AUTHORITATIVE DICTIONARY OF IEEE STANDARD TERMS, 230 (7th ed., Standards Information Network, IEEE Press 2000) (“(3) . . . A device or group of devices that serves to govern in some predetermined manner the electric power delivered to the apparatus to which it is connected.”; (4) . . . Any device used for regulation of a system or component.”) (Ex. 3001).<sup>1</sup>

However, we find that the remainder of Patent Owner’s proposed construction is superfluous, in that it is already accounted for in the prior limitations, and does not meaningfully aid in interpreting the claim language,

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<sup>1</sup> Petitioner proposes to construe “controllably enable,” appearing in claim 1, as “enable,” and does not further construe “control,” appearing in claim 34. Pet. 9. Our conclusions regarding the teachings of the prior art would not change, even under this interpretation of the claim language. *See* Section II.D.2.

which is otherwise sufficiently clear on its face. Accordingly, we construe these claim limitations as follows:

Claim 1 – “implementing an algorithm to regulate the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery require charging”; and

Claim 34 – “programmed to regulate the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery requires charging.”

### 3. Other Terms

We determine that no additional claim term requires express construction for purposes of this Decision. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

#### B. Principles of Law

A claim is unpatentable under 35 U.S.C. § 103(a) if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). When evaluating a combination of teachings, we must also “determine whether there was an apparent reason to combine the known elements in the fashion claimed by the

patent at issue.” *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441, F.3d 977, 988 (Fed. Cir. 2006)). Whether a combination of elements produced a predictable result weighs in the ultimate determination of obviousness. *Id.* at 416–417.

“In an [*inter partes* review], the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.” *Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016). The burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015).

We analyze the challenges presented in the Petition in accordance with the above-stated principles.

#### *C. Level of Ordinary Skill in the Art*

Relying upon the Kroll Declaration, Petitioner contends that a person of ordinary skill in the art of the ’933 patent “would have had (1) at least a bachelor’s degree in electrical or biomedical engineering, or equivalent coursework, and (2) at least one year of experience researching or developing implantable medical devices.” Pet. 7–8 (citing Ex. 1003 ¶¶ 12–18). In the Preliminary Response, “Patent Owner has used Petitioner’s proposed definition.” Prelim. Resp. 8.

For purposes of this Decision, we apply the assessment agreed upon by the parties.

#### *D. Obviousness over Schommer*

Petitioner contends that claims 1, 4, 34, 35, and 40 of the ’933 patent are unpatentable over Schommer and the knowledge of a person of ordinary skill in the art. Pet. 16–48. For reasons that follow, we determine that Petitioner has not demonstrated a reasonable likelihood of prevailing as to the challenged claims.



1. Overview of Schommer (Ex. 1004)

Schommer is a U.S. Patent titled “External Power Source Having an Adjustable Magnetic Core and Method of Use.” Ex. 1004, (54). Schommer explains that when charging the battery of an implanted medical device through induction, “[t]he efficiency of transcutaneous inductive energy transfer is directly related to the accuracy of positioning of the external, primary coil, to the internal, secondary coil. The two coils should be as close to each other as possible.” *Id.* at 5:25–28. To achieve this goal, Schommer discloses “repositionable magnetic core 58 [that] can help to focus electromagnetic energy from [external] primary coil 46 to more closely be aligned with [implanted] secondary coil 34.” *Id.* at 10:29–22, Figs. 6, 10, 11.

Schommer also discloses a process for charging an implanted battery using an external antenna. Ex. 1004, 15:26–27. Figure 15 is reproduced below.

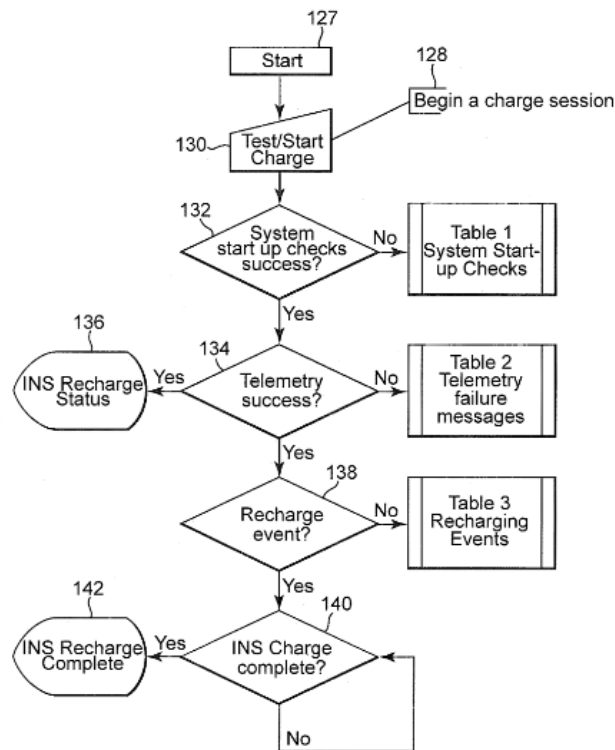


Fig. 15

Figure 15 is a flow chart depicting a charging process. *Id.* at 8:30–31. As depicted, the charging process begins by performing start-up checks (at block 132). *Id.* at 15:30–31. If this check is unsuccessful, “the actions taken in Table 1 are performed.” *Id.* at 15:31–32. Table 1 is reproduced below.

TABLE 1

Check	Screen/Message
System Errors: e.g., stuck key	System Error
External Charger Battery Status	Recharge Complete Battery Low Recharge External Charger
External Charger Connected to External Antenna	Recharge in Process Icon
Antenna Disconnect	Connect Antenna

Table 1 associates specific “Check[s],” e.g., “Antenna Disconnect,” with specific “Screen/Message[s],” e.g., “Connect Antenna.” *Id.* at 15:33–44.

If these checks succeed, telemetry checks are performed (at block 134). *Id.* at 15:45–46. “If telemetry is [un]successful, the error messages indicated in Table 2 are generated.”<sup>2</sup> *Id.* at 46–48. Table 2 is reproduced below.

TABLE 2

Failure	Screen/Message
Poor Communication	Reposition Antenna
External Charger Error Code Response	Call Manufacturer
Communication Error	Communication Error
External Charger Fault	Call Manufacturer
Antenna Disconnect	Connect Antenna
Antenna Failure	Antenna Failure Icon

Table 2 associates specific “Failure[s],” e.g., “Poor Communication,” with specific “Screen/Message[s],” e.g., “Reposition Antenna.” *Id.* at 15:49–59.

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<sup>2</sup> We have corrected an apparent typographical error in this sentence, which, as it appears in the patent, states “If telemetry is *successful*.” Ex. 1001, 15:46–48. We deem this to be a clear, inadvertent error, given that the context of the sentence, e.g., “error messages . . . are generated.” *Id.*

If the telemetry checks succeed, charging status is monitored (at block 136) and charge events are checked (at block 138). *Id.* at 15:60–65. “If no charge events are noted, the actions indicated in Table 3 are executed.” *Id.* at 15:65–67. Table 3 is reproduced below.

TABLE 3

Event	Screen/Message
Telemetry Failure	(See Messages From Table 2)
Implantable Medical Device Battery Low	Device Battery Low
External Charger Battery Low	Charger Battery Low
External Charger Battery Depleted	Recharge Charger
External Charger Recharge Complete	External Charger Recharge Complete
Implantable Medical Device Will Not Provide Therapeutic Result Until Recharged: Therapy Unavailable/Sleep Mode	Recharge Device
Antenna Disconnect	Connect Antenna

Table 3 associates specific “Event[s],” e.g., “Implantable Medical Device Battery Low,” with specific “Screen/Message[s],” e.g., “Device Battery Low.” *Id.* at 16:1–14. On the other hand, if a charge event is noted (at block 138), “then the process checks to determine if charging is complete [block 140]. Once charging is complete, the process terminates [block 142].” *Id.* at 16:16–18.

## 2. Analysis of Claim 1

As reflected by our claim construction, discussed in Section II.A.2 above, claim 1 requires, *inter alia*, “control circuitry for implementing an algorithm to regulate the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery require charging.” Ex. 1001, 11:49–53. Petitioner contends that “Schommer discloses this limitation and/or renders it obvious based on Schommer’s teachings and a POSA’s knowledge.” Pet. 26.

According to Petitioner, Schommer discloses that “‘charge events’ are checked and ‘[i]f no charge events are noted, the actions indicated in Table 3 are executed.’ As shown in Table 3, both the battery status of the external charger’s

battery and the battery status of the implantable medical device’s battery are checked.” *Id.* at 27–28 (quoting Ex. 1004, 15:65–67) (citations and Table 3 omitted). In light of this disclosure, Petitioner contends that “[i]t would have been obvious to a POSA that one way to implement Table 3 is to perform all of the checks in Table 3 *before* charging (or a “charge event”) begins . . . [to provide] full system context before any action is taken rather than taking actions based on partial information.” *Id.* at 28–29 (citing, e.g., Ex.1003 ¶ 65).<sup>3</sup>

Therefore, according to Petitioner, when Schommer’s external charger determines that both the implanted and external batteries require charging, “it will *execute the actions corresponding to those conditions in Table 3*, i.e., ‘Recharge Charger’ and ‘Recharge Device,’ respectively.” Pet. 33 (citing, e.g., Ex. 1003 ¶ 71), 33–34 (further discussing how the batteries would be recharged).

Patent Owner disputes Petitioner’s contentions. Prelim. Resp. 28–40. Patent Owner argues, *inter alia*, that Schommer does not disclose an algorithm that “*enable[s]* the battery charging circuit and the transmitter,” under either party’s proposed construction. *Id.* at 29–30, n.3. According to Patent Owner, “Petitioner is incorrect that the device automatically begins to recharge [a battery] upon detecting low battery levels. [Schommer’s] Table 3 has two columns and only lists ‘Event[s]’ and ‘Screen/Message.’ Thus, *all Table 3 discloses is the messages that will be displayed* if the device determines that certain conditions (events) exist.” *Id.* at 30 (emphasis added); *see also id.* at 31. Patent Owner contends that “it is illogical to understand Table 3 as disclosing that corresponding actions are necessarily taken when the device determines an ‘Event’ has occurred. Indeed, the

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<sup>3</sup> We need not address Petitioner’s contentions regarding simultaneous checks, given that we do not adopt Petitioner’s proposed construction of this limitation. Pet. 29–32; *see supra* Section II.A.2.

device could not take an action on its own for most, if not all, of the ‘Event[s]’ listed in Table 3.” *Id.* at 31. For example, Patent Owner notes that manual intervention is required to resolve issues such as “Telemetry Failure” or “Antenna Disconnect.” *Id.* at 31–32.

We agree with Patent Owner. After checking battery status, Schommer discloses only that “the actions indicated in Table 3 are executed.” Ex. 1004, 15:65–67. As discussed above in Section II.D.1, Schommer’s Table 3 depicts a series of “Screen/Message[s]” that are associated with “Event[s].” *Id.* at Table 3. Thus, we find that Schommer discloses displaying a screen or message when a specified event occurs. *Id.* For example, if the event titled “External Charger Battery Depleted” occurs, the corresponding message of “Recharge Charger” would be displayed. *Id.* Schommer does not disclose, however, that any action is then taken to controllably enable, i.e., regulate, the battery charging circuit to recharge the charger—Schommer simply discloses that a message is displayed.

The evidence cited by Petitioner does not support its contention that Schommer’s device “will execute the actions corresponding to those conditions in Table 3.” Pet. 33 (citing Ex. 1003 ¶ 71; Ex. 1004, 15:65–16:14). For example, the cited paragraph of the Kroll Declaration merely repeats what is stated in the Petition, and also lacks further explanation or persuasive support. Ex. 1003 ¶ 71; 37 C.F.R. § 42.65(a) (“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.”). Likewise, the cited portion of Schommer merely reproduces Table 3 and states that “Charge events are checked [block 138]. If no charge events are noted, the actions indicated in Table 3 are executed.” Ex. 1004, 15:65–16:14. Petitioner provides no persuasive evidence to establish that Schommer’s device actually regulates, i.e.,

controllably enables or controls, the battery charging circuit and the transmitter, if it is determined that both batteries require charging.

Indeed, the remainder of Schommer’s disclosure supports our finding that Schommer discloses displaying messages, but does not disclose executing actions corresponding to those messages. For example, Schommer discloses that “the error *messages* indicated in Table 2 *are generated*,” wherein Table 2 (like Table 3) depicts a series of “Screen/Message[s]” associated with certain “Failure[s].” *Id.* at 15:46–48. Moreover, as Patent Owner correctly notes, many “Screen/Message[s]” shown in Tables 1–3 reflect conditions that cannot be executed without manual intervention, such that Schommer’s device could not “execute the actions *corresponding to those conditions* in Table 3,” for most events. Pet. 33 (emphasis added); Prelim. Resp. 31–32. For example, Petitioner fails to explain how the action corresponding to the “Antenna Disconnect” event could be executed by the device. *See* Ex. 1004, Table 3 (associating “Antenna Disconnect” with “Connect Antenna”—a manual action).

For these reasons, Petitioner has not demonstrated a reasonable likelihood it would prevail in establishing the unpatentability of challenged claim 1.

### 3. *Additional Claims and Grounds*

Claim 4 depends from claim 1, and incorporates the same deficiency as discussed above regarding claim 1. As such, for the same reasons as discussed with respect to claim 1, Petitioner has not demonstrated a reasonable likelihood it would prevail in establishing the unpatentability of challenged claim 4.

Independent claim 34, and its dependent claims 35 and 40, similarly recite “control circuitry programmed to control [i.e., regulate] the battery charging circuit and the transmitter in the event that the control circuitry determines that both the external battery and the implant battery requires charging.” Petitioner relies on the

same contentions discussed above with respect to claim 1. Pet. 46. As such, for the same reasons as discussed with respect to claim 1, Petitioner has not demonstrated a reasonable likelihood it would prevail in establishing the unpatentability of challenged claims 34, 35, and 40.

Claim 48 depends from claim 34, and incorporates the same deficiency as discussed above regarding claim 34. Petitioner does not rely on Veselic in a manner that would cure this deficiency. Pet. 48–55. As such, for the same reasons as discussed with respect to claim 34, Petitioner has not demonstrated a reasonable likelihood it would prevail in establishing the unpatentability of challenged claim 4.

### III. CONCLUSION

For the foregoing reasons, we determine Petitioner has not demonstrated a reasonable likelihood it would prevail in establishing the unpatentability of challenged claims 1, 4, 34, 35, 40, and 48 of the '933 patent.

### IV. ORDER

Upon consideration of the record before us, it is:

ORDERED that the Petition is *denied* as to all challenged claims, and no trial is instituted.

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