

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., AND SAMSUNG  
ELECTRONICS AMERICA, INC.,  
Petitioner,

v.

RESONANT SYSTEMS, INC.,  
Patent Owner.

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IPR2023-00993  
Patent 9,941,830 B2

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Before JAMES J. MAYBERRY, STEVEN M. AMUNDSON, and  
MICHAEL T. CYGAN, *Administrative Patent Judges*.

CYGAN, *Administrative Patent Judge*.

DECISION  
Granting Institution of *Inter Partes* Review  
35 U.S.C. § 314

## I. INTRODUCTION

### A. *Background and Summary*

Samsung Electronics Co., Ltd, and Samsung Electronics America, Inc. (collectively, “Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–9, 11, 14–17, 19, and 20 of U.S. Patent No. 9,941,830 B2 (Ex. 1001, “the ’830 patent”). Paper 3 (“Pet.”). Resonant Systems, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 11 (“Prelim. Resp.”). The Petition is supported by a declaration from Dr. Andrew Wolfe. Ex. 1003 (“Wolfe Declaration”). With our authorization, Petitioner filed a Reply to the Preliminary Response and a *Sotera* stipulation. Paper 14 (“Reply”); Ex. 1044. Under that same authorization, Patent Owner filed a Sur-reply. Paper 15 (“Sur-reply”).

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2023). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” For the reasons given below, on this record Petitioner has established a reasonable likelihood that it would prevail in showing the unpatentability of claims 1–9, 11, 14–17, 19, and 20 of the ’830 patent. Accordingly, we institute an *inter partes* review as to claims 1–9, 11, 14–17, 19, and 20 of the ’830 patent on all asserted grounds of unpatentability.

### B. *Real Parties in Interest*

Petitioner identifies Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. as real parties-in-interest. Pet. 95. Patent Owner

identifies Resonant Systems, Inc. as a real party-in-interest. Paper 6, first unpaginated page.

*C. Related Matters*

The parties represent that the '830 patent is involved in *Resonant Systems, Inc. v. Samsung Electronics Co., Ltd., et al.*, EDTX, case number 2:22-cv-00423; *Resonant Systems, Inc. v. Sony Group Corporation, et al.*, case number EDTX 2:22-cv-00424; *Resonant Systems, Inc. d/b/a RevelHMI v. Apple, Inc.*, WDTX, case number 7:23-cv-00077. *Id.*; Pet. 96.

Petitioner represents that it has also challenged claims 1–20 of the '830 patent in IPR2023-01025. Paper 4, 2.

*D. The '830 Patent*

The '830 patent is titled “Linear Vibration Modules and Linear-Resonant Vibration Modules.” Ex. 1001, code (54). The '830 patent issued from Application No. 15/181,249, filed on June 13, 2016, and claims priority, via continuation applications and a continuation-in-part application, to Provisional Application No. 61/179,109, filed on May 18, 2009. *Id.* at codes (21), (22), (60), (63).

The '830 patent relates to linear-resonant vibration modules providing vibrational forces from the linear oscillation of a weight or member, produced by rapidly alternating the polarity of driving electromagnets. Ex. 1001, 3:11–19. Feedback control is used to maintain the module at or near its resonant frequency. *Id.* at 3:19–21. Vibrational amplitude and frequency combinations can be produced throughout a large region of amplitude/frequency space. *Id.* at 3:22–25.

*E. Illustrative Claim*

Claim 1 is illustrative, and recites as follows:<sup>1</sup>

[1pre] A vibration module comprising

[1a] a housing;

[1b] a moveable component;

[1c] a power supply;

[1d] user-input features;

[1e] a driving component that drives the moveable component to oscillate within the housing; and

[1f] a control component that controls supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by one or more stored values.

*F. Evidence*

Petitioner relies on the following patent document evidence.

| <b>Name</b> | <b>Patent Document</b> | <b>Exhibit</b> |
|-------------|------------------------|----------------|
| Fukumoto    | US 7,292,227 B2        | 1005           |
| Grant       | US 2006/0284849 A1     | 1006           |
| Barton      | US 2006/0248183 A1     | 1007           |
| Ueda        | US 2004/0169480 A1     | 1008           |
| Erixon      | US 2008/0174187 A1     | 1009           |
| Fuller      | US 2008/0001484 A1     | 1010           |
| Saiki       | US 7,006,641 B1        | 1013           |
| Masahiko    | US 8,917,486 B2        | 1014           |

Petitioner also relies upon Chinese patent application publication specification CN 101488697A to Dong, published July 22, 2009 (Ex. 1011) and Japanese patent application publication JP H8–196053 to Ogusu, published July 30, 1996 (Ex. 1015).

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<sup>1</sup> Bracketed numbering added as per the Petition.

*G. Prior Art and Asserted Grounds*

Petitioner asserts that claims 1–9, 11, 14–17, 19, and 20 would have been unpatentable on the following grounds:

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>         |
|----------------------------|--------------------|-----------------------------------|
| 1–3, 7–9, 15, 17, 20       | 103(a)             | Fukumoto                          |
| 1–3, 7–9, 15, 17, 20       | 103(a)             | Fukumoto, Grant                   |
| 1–3, 7–9, 15, 17, 20       | 103(a)             | Fukumoto, Barton                  |
| 3–6                        | 103(a)             | Fukumoto, Ueda                    |
| 3–6                        | 103(a)             | Fukumoto, Grant, Ueda             |
| 3–6                        | 103(a)             | Fukumoto, Barton, Ueda            |
| 7–8                        | 103(a)             | Fukumoto, Erixon                  |
| 7–8                        | 103(a)             | Fukumoto, Grant, Erixon           |
| 7–8                        | 103(a)             | Fukumoto, Barton, Erixon          |
| 8                          | 103(a)             | Fukumoto, Fuller                  |
| 8                          | 103(a)             | Fukumoto, Grant, Fuller           |
| 8                          | 103(a)             | Fukumoto, Barton, Fuller          |
| 14, 19                     | 103(a)             | Fukumoto, Dong, Ogusu             |
| 14, 19                     | 103(a)             | Fukumoto, Grant, Dong, Ogusu      |
| 14, 19                     | 103(a)             | Fukumoto, Barton, Dong, Ogusu     |
| 15, 20                     | 103(a)             | Fukumoto, Saiki                   |
| 15, 20                     | 103(a)             | Fukumoto, Grant, Saiki            |
| 15, 20                     | 103(a)             | Fukumoto, Barton, Saiki           |
| 16                         | 103(a)             | Fukumoto, Saiki, Masahiko         |
| 16                         | 103(a)             | Fukumoto, Grant, Saiki, Masahiko  |
| 16                         | 103(a)             | Fukumoto, Barton, Saiki, Masahiko |
| 1, 2, 7, 11, 15, 17, 20    | 103(a)             | Ogusu, Fukumoto                   |
| 1, 2, 7, 11, 15, 17, 20    | 103(a)             | Ogusu, Fukumoto, Grant            |
| 1, 2, 7, 11, 15, 17, 20    | 103(a)             | Ogusu, Fukumoto, Barton           |
| 3–6                        | 103(a)             | Ogusu, Fukumoto, Ueda             |
| 3–6                        | 103(a)             | Ogusu, Fukumoto, Grant, Ueda      |
| 3–6                        | 103(a)             | Ogusu, Fukumoto, Barton, Ueda     |
| 7–8                        | 103(a)             | Ogusu, Fukumoto, Erixon           |

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>       |
|----------------------------|--------------------|---------------------------------|
| 7–8                        | 103(a)             | Ogusu, Fukumoto, Grant, Erixon  |
| 7–8                        | 103(a)             | Ogusu, Fukumoto, Barton, Erixon |

Petitioner asserts that the pre-AIA patentability scheme applies to the '830 patent. *See* Pet. 2. We note that the '830 patent issued from an application that was examined under the first-inventor-to-file provisions of the AIA. Ex. 1002, 104. However, in a companion proceeding (IPR2023-01025), we determined there was insufficient evidence to support Petitioner's (contradictory) assertion that the '830 patent should be examined under those provisions, because Petitioner did not show that the application that matured into the '830 patent contained at any time a claim that had an effective date on or after March 16, 2013. Even were the '830 patent given an effective filing date of its actual filing date, each prior-art reference would still antedate the '830 patent under the AIA prior-art scheme. Therefore, our determination would not be affected by which statutory scheme is applied. Consequently, we accept Petitioner's assertion, for purposes of institution and on the present record, that the pre-AIA patentability scheme applies in this proceeding.

## II. ANALYSIS

### A. *Legal Standards*

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter 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 ordinary skill in the art; and (4) objective evidence of non-obviousness.<sup>2</sup> See *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

*B. Level of Ordinary Skill in the Art*

Petitioner asserts that a person of ordinary skill in the art [“POSITA”] at the critical time “would have had a bachelor’s degree in electrical engineering, mechanical engineering, computer science, or a similar field and two years of experience related to electronic consumer product design [and the] POSITA could have also obtained similar knowledge and experience through other means.” Pet. 6 (citing Ex. 1003 ¶ 31). Patent Owner states that its analysis has been made under this proposed definition and “would not change if minor variations were made to it.” Prelim. Resp. 3. For purposes of this Decision, we adopt Petitioner’s proposed level of ordinary skill, as it appears to be consistent with the specification of the ’830 patent and the prior art of record.

*C. Claim Construction*

In an *inter partes* review, we construe a patent claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b).” 37 C.F.R. § 42.100(b). Under this standard, the words of a claim generally are given their “ordinary and customary meaning,” which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire

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<sup>2</sup> Neither party presents evidence or arguments regarding objective evidence of non-obviousness at this stage.

patent including the specification. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

Here, Petitioner asserts that limitations [1b], [1e], and [1f] reciting “component” should be construed under 35 U.S.C. § 112, paragraph 6. Pet. 7–8. Patent Owner argues that such a construction is not relevant to its arguments. Prelim. Resp. 3–4.

Determining whether a limitation that does not use the term “means” invokes § 112, paragraph 6, involves a three-part inquiry: (1) there is a generic placeholder that substitutes for the term “means”; (2) the generic placeholder is modified by functional language; and (3) the limitation does not include the structure, material, or acts necessary to perform the function in question without need to resort to other portions of the specification or extrinsic evidence for an adequate understanding of the structure. *See Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1349 (Fed. Cir. 2015); *Tri-Med v. Stryker Corp.*, 514 F.3d 1256, 1259–60 (Fed. Cir. 2008); *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1303–04 (Fed. Cir. 2015) (the court must “determine whether the claim nevertheless recites sufficient structure for performing the . . . function to take it outside the bounds of” § 112, paragraph 6).

As an initial matter, Petitioner’s assertion that a “component” should be interpreted under 35 U.S.C. § 112, paragraph 6, falls short of the full, three-part inquiry. Petitioner relies solely on prior instances in which “component for” has been found to overcome the presumption that a claim term that lacks the word “means” should be construed as not invoking § 112 paragraph 6. Pet. 7 (citing the Manual of Patent Examining Procedure (“MPEP”) § 2181). Yet the same source relied upon by Petitioner clearly indicates that this term “may,” not “must,” invoke § 112 paragraph 6.

MPEP § 2181. That same source further warns that “there is no fixed list of generic placeholders that always result in 35 U.S.C. § 112 [sixth paragraph] interpretation” because “[e]very case will turn on its own unique set of facts.” *Id.*

Furthermore, Petitioner has not explained why any of the disputed limitations lack sufficient structure to perform the function. In *Williamson*, the Federal Circuit examined the entirety of the phrase at issue, not merely the putative “nonce word” that allegedly was described only by the description of its function that followed. *Williamson*, 792 F.3d at 1350–51. The Federal Circuit in *Williamson* reviewed the entirety of the alleged function to determine whether it “might inform the structural character of the limitation-in-question or otherwise impart structure to the” putative nonce word. *Id.* at 1351. The Petition does not undertake this analysis, and for that reason alone, insufficiently supports its assertions.

With respect to limitation [1b], a “moveable component,” Petitioner argues that it should be construed as a means (component) having a function (moveable) that corresponds to a structure (a moving weight). *Id.*

With respect to limitation [1e], a “driving component that drives the moveable component to oscillate within the housing,” Petitioner argues that it should be construed as a means (component) having a function (driving the moveable component to oscillate within the housing) that corresponds to a disclosed structure (one or more electromagnetic coils). Pet. 8. It is not necessary to determine whether such a construction is required because Petitioner’s assertions in each ground are based upon a teaching of electromagnetic coil oscillation of a moveable weight made of permanent magnet, whether or not the claim is construed as invoking means-plus-function. *Id.* at 14, 17 (citing Ex. 1005, 14:32–37, 14:57–60), 76 (citing Ex.

1015 ¶¶ 23–32). In our analysis of claim 1, we determine that such electromagnetic coil oscillation sufficiently teaches the claimed driving component. *Infra* at II(D)(2)(a). Because Petitioner’s assertions and our determination would be unaffected by its proposed construction, we need not construe this term for purposes of institution. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (noting that “we need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

With respect to limitation [1f], a “control component that controls supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by one or more stored values,” Petitioner argues that it should be construed as a means (component) having a function (to control supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by one or more stored values). In our analysis, we determine limitation [1f] to be taught by Petitioner’s assertions under its alternate non-means-plus-function construction. For this reason, and because Petitioner has not provided sufficient analysis under 35 U.S.C. 112, paragraph 6, we need not construe limitation [1f] for purposes of institution.

Petitioner also argues that dependent claim 4 contains the terms “the one or more operational control outputs of the control component,” “the sensors,” and “the one or more sensors,” that lack antecedent basis in claim 1 from which it depends, and therefore proposes two constructions. Pet. 9. However, Petitioner argues that these limitations are taught by its asserted combination of references under either construction. *Id.* at 51. We

determine that claim 4 is taught under either construction. *Infra* at II(D)(4). Therefore, construction is not required at this stage of the proceeding. Whether § 112's means-plus-function provision applies to those limitations is better resolved at trial on a more developed record.

*D. Obviousness over Fukumoto*

Petitioner asserts that claims 1–3, 7–9, 15, 17, and 20 are unpatentable under 35 U.S.C. § 103(a) as obvious over Fukumoto. Pet. 9. Patent Owner does not specifically argue against these assertions. *See, e.g.*, Prelim. Resp. 11–12 (arguing against Petitioner's "alternative arguments" based on combinations of other art with Fukumoto, but not against Fukumoto alone).

Upon consideration of Petitioner's explanations and the totality of evidence in this current record, we are persuaded that Petitioner has demonstrated a reasonable likelihood of prevailing in showing that claims 1–3, 7–9, 15, 17, and 20 are unpatentable under 35 U.S.C. § 103(a) as obvious over Fukumoto.

*1. Fukumoto*

Fukumoto is titled "Electronic Device, Vibration Generator, Vibration-Type Reporting Method, and Report Control Method." Ex. 1005, code (54). Fukumoto relates to an electronic device having a touch-based user interface having vibrational feedback. *Id.* at 1:51–63. Fukumoto addresses a concern that touch input interfaces may insufficiently indicate whether such input has been accepted due to drawbacks of audio and visual feedback. *Id.* at 1:13–41. Fukumoto uses a vibration generator imparting vibration to a housing of an electronic device. *Id.* at 4:31–47.

## 2. *Analysis of Claim 1*

We begin our analysis of Petitioner’s obviousness contentions with Petitioner’s assertions as to claim 1.

### *a) Limitations [1pre]–[1e]*

Claim 1 recites, “[1pre] A vibration module comprising [1a] a housing; [1b] a moveable component; [1c] a power supply; [1d] user-input features; [1e] a driving component that drives the moveable component to oscillate within the housing.”

Relying on Figure 3 of Fukumoto, Petitioner asserts that limitation [1pre] is taught by Fukumoto’s electronic device having generation of vibration. Pet. 12–13 (citing Ex. 1005, Abstr.).

Petitioner asserts that limitation [1a] is taught by Fukumoto’s case 115a. *Id.* at 13 (citing Ex. 1005, 15:56–59; Ex. 1003 ¶ 161).

Petitioner asserts that limitation [1b] is taught by Fukumoto’s movable magnetic weight 122. *Id.* at 14 (citing Ex. 1005, 14:32–37; Ex. 1003 ¶¶ 162–164).

Petitioner asserts that limitation [1c] is taught by Fukumoto’s AC current in the form of a drive signal, for which a person having ordinary skill in the art would recognize as being supplied by a power supply. *Id.* at 15–16 (citing Ex. 1005, 14:57–60, 16:44–50; Ex. 1003 ¶ 165).

Petitioner asserts that limitation [1d] is taught by Fukumoto’s touch panel, which permits a user to input operations instructions to its PDA (Personal Digital Assistant) device. *Id.* at 16–17 (citing Ex. 1005, Figs. 1–2, 13:40–14:13, 30:48–53, 31:27–29; Ex. 1003 ¶¶ 166–168).

Petitioner asserts that limitation [1e] is taught by Fukumoto’s drive signal applied to coil 121, which causes movable magnetic weight 122 to

reciprocate in the vertical direction. *Id.* at 17–18 (citing Ex. 1005, Fig. 3, 14:57–60; Ex. 1003 ¶¶ 169–171).

*b) Limitation [1f]*

Limitation [1f] recites, “a control component that controls supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by one or more stored values.” Petitioner asserts that this limitation is taught by Fukumoto’s CPU 113, which executes vibration control processing using drive signal generation circuit 114 to drive oscillatory actuator 115 according to waveform data. *Id.* at 18–20 (citing Ex. 1005, Figs. 2, 5, 13:54–14:26, 16:60–19:3; Ex. 1003 ¶¶ 172–185). Petitioner asserts that Fukumoto’s waveform data is stored as frequency and amplitude data in waveform data table 112a. *Id.* at 19–21 (citing Ex. 1005, Fig. 33, 48:42–47; Ex. 1003 ¶¶ 172–173).

Petitioner alternately asserts that, if limitation [1f] is construed as a means-plus-function claim, the corresponding structure for the function includes a processor and an H-bridge switch. *Id.* at 21–22. Petitioner asserts that Fukumoto teaches processor 113, and that an H-bridge switch would have been obvious to one having ordinary skill in the art at the critical time because an H-bridge switch was a well-known component for converting input power into the desired waveform. *Id.* at 22 (citing Ex. 1003 ¶¶ 175–183). Dr Wolfe testifies that Fukumoto’s circuitry is an equivalent to an H-bridge switch. Ex. 1003 ¶¶ 183–184. Petitioner further asserts that Fukumoto teaches an equivalent algorithm, in that Fukumoto’s CPU reads the waveform data from memory 112 to apply a drive signal to the

oscillatory actuator 115. *Id.* (citing Ex. 1005, 17:7–11, 17:20–26; Ex. 1003 ¶ 183).

*c) Determination*

On the current record, we determine that Petitioner has made a showing sufficient for institution that Fukumoto teaches each limitation of claim 1. We agree that the above-identified teachings of Fukumoto teach or suggest limitations [1pre]–[1e]. We further agree that under a non-means-plus-function interpretation, limitation [1f] is taught by the above-identified teachings of Fukumoto; accordingly, we do not reach Petitioner’s assertions on Petitioner’s means-plus-function construction. *Supra* at II(C).

*3. Claims 2–9, 11, 14–17, 19, and 20*

Petitioner provides a detailed analysis of the limitations of claims 2–9, 11, 14–17, 19, and 20, and points to teachings in Fukumoto as meeting each limitation. Pet. 23–35. Patent Owner does not provide any additional reasons why Petitioner’s assertions are unpersuasive. We have reviewed Petitioner’s assertions for these claims and determine, for purposes of institution, that Petitioner has sufficiently shown Fukumoto to teach each limitation. *Id.*

In view of the foregoing, we determine that Petitioner has sufficiently shown, for purposes of institution, that each element of claims 2–9, 11, 14–17, 19, and 20 has been taught or suggested by Fukumoto.

*4. Claims 3–6 over Fukumoto and Ueda*

Petitioner provides a detailed analysis of the limitations of claims 3–6 and points to teachings in Fukumoto and Ueda as meeting each limitation. Pet. 45–56. Patent Owner does not provide any additional reasons why Petitioner’s assertions are unpersuasive. We have reviewed Petitioner’s assertions for these claims and determine, for purposes of institution, that

Petitioner has sufficiently shown the combination of Fukumoto and Ueda to teach each limitation. *Id.* Further, Petitioner has provided a reason to combine Fukumoto and Ueda, and an explanation why a skilled person would reasonably expect success in such a combination, that are sufficient for institution. *Id.* at 46.

In view of the foregoing, we determine that Petitioner has sufficiently shown, for purposes of institution, that each element of claims 3–6 has been taught or suggested by Fukumoto in view of Ueda.

5. *Claims 7 and 8 over Fukumoto and Erixon*

Petitioner provides a detailed analysis of the limitations of claims 7 and 8 and points to teachings in Fukumoto and Erixon as meeting each limitation. Pet. 56–64. Patent Owner does not provide any additional reasons why Petitioner’s assertions are unpersuasive. We have reviewed Petitioner’s assertions for these claims and determine, for purposes of institution, that Petitioner has sufficiently shown the combination of Fukumoto and Erixon to teach each limitation. *Id.* Further, Petitioner has provided a reason to combine Fukumoto and Erixon, and an explanation why a skilled person would reasonably expect success in such a combination, that are sufficient for institution. *Id.* at 59–60, 63–64.

In view of the foregoing, we determine that Petitioner has sufficiently shown, for purposes of institution, that each element of claims 7 and 8 has been taught or suggested by Fukumoto in view of Erixon.

6. *Claim 8 over Fukumoto and Fuller*

Petitioner provides a detailed analysis of the limitations of claim 8 and points to teachings in Fukumoto and Fuller as meeting each limitation. Pet. 64–66. Patent Owner does not provide any additional reasons why Petitioner’s assertions are unpersuasive. We have reviewed Petitioner’s

assertions for claim 8 and determine, for purposes of institution, that Petitioner has sufficiently shown the combination of Fukumoto and Fuller to teach each limitation. *Id.* Further, Petitioner has provided a reason to combine Fukumoto and Fuller, and an explanation why a skilled person would reasonably expect success in such a combination, that are sufficient for institution. *Id.* at 66.

In view of the foregoing, we determine that Petitioner has sufficiently shown, for purposes of institution, that each element of claim 8 has been taught or suggested by Fukumoto in view of Fuller.

7. *Claims 14 and 19 over Fukumoto, Dong, and Ogusu*

Petitioner provides a detailed analysis of the limitations of claims 14 and 19 and points to teachings in Fukumoto, Dong, and Ogusu as meeting each limitation. Pet. 66–70. Patent Owner does not provide any additional reasons why Petitioner’s assertions are unpersuasive. We have reviewed Petitioner’s assertions for these claims and determine, for purposes of institution, that Petitioner has sufficiently shown the combination of Fukumoto, Dong, and Ogusu to teach each limitation. *Id.* Further, Petitioner has provided a reason to combine Fukumoto, Dong, and Ogusu, and an explanation why a skilled person would reasonably expect success in such a combination, that are sufficient for institution. *Id.* at 69.

Petitioner’s reliance on Dong is based upon an assertion that Dong, published on July 22, 2009, is prior art to claims 14 and 19 because those claims are entitled to a priority date no earlier than January 6, 2012. Petitioner asserts that the subject matter of claims 14 and 19 first appeared, in the priority chain of applications to which the ’830 patent claims the benefit, in the January 6, 2012, non-provisional application (Exhibit 1026), which was a continuation-in-part of a prior application. *Id.* at 67 (citing

Ex. 1003 ¶ 271 (“Figures 24A, 24B, and 25 as well as their associated description (’830 *Pat.* 14:3–14:58) appear to be the only potential written description support . . . these figures and associated description were not present in the May 18, 2009 provisional (Ex. 1029) or May 18, 2010 non-provisional (Ex. 1028).”). Patent Owner does not comment on this assertion. For purposes of institution, we acknowledge Dr. Wolfe’s testimony, and determine that Dong has been shown to be prior art to claims 14 and 19.

In view of the foregoing, we determine that Petitioner has sufficiently shown, for purposes of institution, that each element of claims 14 and 19 has been taught or suggested by Fukumoto in view of Dong and Ogusu.

8. *Claims 15 and 20 over Fukumoto and Saiki*

Petitioner provides a detailed analysis of the limitations of claims 15 and 20 and points to teachings in Fukumoto and Saiki as meeting each limitation. Pet. 70–72. Patent Owner does not provide any additional reasons why Petitioner’s assertions are unpersuasive. We have reviewed Petitioner’s assertions for these claims and determine, for purposes of institution, that Petitioner has sufficiently shown the combination of Fukumoto and Saiki to teach each limitation. *Id.* Further, Petitioner has provided a reason to combine Fukumoto and Saiki, and an explanation why a skilled person would reasonably expect success in such a combination, that are sufficient for institution. *Id.* at 71–72.

In view of the foregoing, we determine that Petitioner has sufficiently shown, for purposes of institution, that each element of claims 15 and 20 has been taught or suggested by Fukumoto in view of Saiki.

9. *Claim 16 over Fukumoto and Masahiko*

Petitioner provides a detailed analysis of the limitations of claim 16 and points to teachings in Fukumoto and Masahiko as meeting each

limitation. Pet. 72–75. Patent Owner does not provide any additional reasons why Petitioner’s assertions are unpersuasive. We have reviewed Petitioner’s assertions for claim 16 and determine, for purposes of institution, that Petitioner has sufficiently shown the combination of Fukumoto and Masahiko to teach each limitation. *Id.* Further, Petitioner has provided a reason to combine Fukumoto and Masahiko, and an explanation why a skilled person would reasonably expect success in such a combination, that are sufficient for institution. *Id.* at 73–74.

Petitioner’s reliance on Masahiko is based upon an assertion that Masahiko, filed on July 6, 2011, is prior art to claim 16 because it is entitled to a priority date no earlier than January 6, 2012. *Id.* at 72. Petitioner asserts that the subject matter of claim 16 first appeared, in the priority chain of applications to which the ’830 patent claims the benefit, in the January 6, 2012 non-provisional application (Exhibit 1026), which was a continuation-in-part of a prior application. *Id.* (citing Ex. 1003 ¶ 287 (“Figures 22B and 23 and the description at 13:34–59 appear to be the only possible written description support . . . th[ese] figures and associated description were not present in the May 18, 2009 provisional (Ex. 1029) or May 18, 2010 non-provisional (Ex. 1028).”). Patent Owner does not comment on this assertion. For purposes of institution, we acknowledge Dr. Wolfe’s testimony, and determine that Masahiko has been shown to be prior art to claim 16.

In view of the foregoing, we determine that Petitioner has sufficiently shown, for purposes of institution, that each element of claim 16 has been taught or suggested by Fukumoto in view of Masahiko.

*E. Obviousness over Ogusu-Fukumoto, Fukumoto-Grant, and Fukumoto-Barton*

Because we find Petitioner's assertions persuasive on the Fukumoto-based grounds for each asserted claim, and because Patent Owner has not raised any particular issue regarding those assertions, we need not determine or discuss whether the addition of teachings from Ogusu, Grant, or Barton also make obvious those same asserted claims.

However, with respect to the assertions based upon Ogusu, Fukumoto, and either Grant or Barton, we note that Petitioner does not present any explanation as to how the teachings of either Grant or Barton would be combined with Petitioner's Ogusu-Fukumoto combination. *See* Pet. 75–91. For the Fukumoto-based grounds, Grant and Barton are applied in combination with Fukumoto to teach limitation [1f]. However, the Ogusu-Fukumoto combination is based solely upon Ogusu for non-means-plus-function construction, and upon Ogusu in combination with Fukumoto for means-plus-function construction, to teach limitation [1f]. Pet. 82. Petitioner does not assert that either Grant or Barton would be combined with Ogusu or the Ogusu-Fukumoto combination to teach limitation [1f] for the same reasons Petitioner identifies for the Grant-Fukumoto or Barton-Fukumoto combinations, and due to the different teachings of Fukumoto relied upon in the Fukumoto-Ogusu combination, such an assertion would not be persuasive. As noted by Patent Owner, similar defects also occur for the reasons to combine in the Ogusu-Fukumoto-Ueda assertions for claims 3–6 and the Ogusu-Fukumoto-Erixon assertions for claims 7 and 8. Consequently, we determine that Petitioner has not met its burden for any assertions that are ultimately based on Ogusu, Fukumoto, and either Grant or Barton.

### III. DISCRETIONARY DENIAL

#### A. *Parallel Proceedings (Fintiv)*

Petitioner stipulates:

Unless the PTAB denies or later vacates institution of IPR2023-00993, Samsung will not pursue, with respect to the '830 patent in Case No. 2:22-cv-00423-JRG, invalidity of the challenged claims based on the grounds in IPR2023-00993, or based on any other ground that reasonably could have been raised in an IPR.

Ex. 1044; Pet. Reply 1.

We determine this stipulation closely corresponds to the stipulation in *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A). USPTO policy provides that, “[c]onsistent with *Sotera Wireless, Inc.*, the PTAB will not discretionarily deny institution in view of parallel district court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.” *Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation*, Memorandum, June 21, 2002, 3, 7–8 (available at [https://www.uspto.gov/sites/default/files/documents/interim\\_proc\\_discretionary\\_denials\\_aia\\_parallel\\_district\\_court\\_litigation\\_memo\\_20220621\\_.pdf](https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf)). Consequently, we do not exercise our discretion to deny institution due to the parallel proceeding.

#### B. *Voluminous or Excessive Grounds*

##### 1. *Parties’ Arguments*

Patent Owner argues that the Petition presents “voluminous and excessive grounds” such that the Office should deny the Petition under § 314(a). Prelim. Resp. 9. Patent Owner points to the Petition’s thirty

identified grounds of obviousness. *Id.* Patent Owner further points to Petitioner’s assertions for limitation [1d] in grounds 2A–2C, in which the Petition states that the limitation may be satisfied by either a teaching from Ogusu or a teaching from Fukumoto. *Id.* at 9–10 (citing Pet. 80). Patent Owner also points to Dr. Wolfe’s mention of two documents in support of Dr. Wolfe’s characterization of how a person having ordinary skill in the art would understand certain features of Fukumoto. *Id.* at 10 (citing Ex. 1003 ¶¶ 167, 173). Patent Owner argues that the mere number of grounds presented is as excessive and voluminous as those for which the PTAB denied institution in *Adaptics*. *Id.* at 11 (citing *Adaptics Ltd. v. Perfect Co.*, IPR2018-01596, Paper 20 at 17 (PTAB Mar. 6, 2019) (informative)).

Patent Owner further argues that for three of the twelve Fukumoto grounds addressing claim 7, “the Petition collectively offers only a single paragraph of analysis, consisting mostly of cross-references to the analyses of different proposed combinations.” *Id.* at 11 (citing Pet. 93). Patent Owner characterizes these grounds as an “invitation to the reader to mix and match references” to provide any combination of teachings subjectively desired by the reader. *Id.* Patent Owner further argues that Petitioner has asserted that Fukumoto alone renders all claims except claim 9 obvious, but then presents grounds in which Fukumoto is combined with other references for the same claims, “presumably assum[ing] that Fukumoto fails to ‘disclose or suggest’ one or more limitations” without analysis of what Fukumoto is missing. *Id.* at 11–12. Patent Owner further argues that, in grounds 2G–I, Petitioner has not provided a proper statement of motivation. *Id.* at 14. Patent Owner argues that the Petition presents a large number of grounds with brief discussion devoted to many of them, such that the

Petition fails to identify the grounds and supporting evidence “with particularity” as required by 35 U.S.C. § 312(a)(3). *Id.* at 12.

Patent Owner further asserts that there is no particular factual justification for the number of grounds presented in the Petition. *Id.* at 14–15. Patent Owner states that the claims are not lengthy, no priority date dispute is involved, and that fewer claims have been asserted in the parallel litigation than are asserted to be unpatentable in the Petition. *Id.* at 14–16.

In authorized briefing on the *Adaptics* issue, Petitioner argues that the facts in *Adaptics* are distinguishable from the facts in this proceeding. Petitioner argues that this proceeding does not share a primary concern of *Adaptics*, i.e., the use of “and/or” language to combine references, resulting in hundreds of combinations. Pet. Reply 1 (citing *Adaptics*, IPR2018-01696 Paper 20 at 18–19). Petitioner further argues that unlike *Adaptics*, the Petition clearly identifies which reference applies to which claim and claim limitation for each ground, and that the overlapping issues in the grounds using Grant or Barton as alternate added references to independent claims results in multiple yet particularly identified combinations against the dependent claims, further reducing any alleged burden. *Id.* at 2.

Addressing Patent Owner’s arguments, Petitioner argues that based purely on numerical terms, the presentation of thirty grounds, including twelve grounds against a single claim and nine grounds as to unasserted claims, or ten references is not *per se* excessive. *Id.* at 3–4. Petitioner points to the “hundreds” and “thousands” of asserted combinations that are the concern in *Adaptics* and its progeny. *Id.* at 1 (citing *Adaptics*, Paper 20 at 18–19; *Uber Tech., Inc. v. Surgetech LLC*, IPR2023-00735, Paper 13 at 13–16 (PTAB Oct. 12, 2023)). With regard to reliance on alternative combinations, Petitioner argues that the grounds are presented clearly and

with overlap. *Id.* With regard to Dr. Wolfe’s reliance on two references to explain Fukumoto, Petitioner argues that this is far from the “voluminous additional exhibits” used in *Adaptics* “to fill gaps.” *Id.* (citing *Adaptics*, Paper 20 at 22).

Patent Owner responds that “even a petition with dozens of combinations would have been ‘unduly burdensome’ in the circumstances of [*Adaptics*].” PO Sur-reply 2, 4. Patent Owner argues that despite the presence of overlap and patterns with the asserted grounds, the sheer number necessarily increases the burden and complexity. *Id.* Patent Owner argues that the burden on itself and the Board is necessarily increased in analyzing the merits of each combination, including factors that may be unique to each combination such as a motivation to combine. *Id.* Patent Owner repeats its arguments that the factual predicate of the case provides no justification for the number of references and grounds, and that the resulting brief discussion causes some issues to be insufficiently discussed. *Id.* at 3–4.

## 2. *Analysis*

The Board relies upon its word limit to manage the size of a petition, necessarily placing an upper limit on the number of grounds, references, or asserted claims presented in a petition. 37 C.F.R. § 42.24(a)(1)(i). The burden placed on a Petitioner to support its assertions further limits the number of issues that may be raised in a petition. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (“In an IPR, the petitioner has the burden from the onset to show with particularity why the patent it challenges is unpatentable.”). The substantive merits of a petition may well be affected where such a large number of assertions have been intemperately included such that it lacks an explanation of one or more assertions

sufficient to meet the petitioner’s burden. Generally, such substantive concerns are sufficient to limit the issues raised in a petition.

However, the Board recognizes the potential for a petition to be so ill-defined to negatively impact “the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete [*inter partes*] proceedings.” *Adaptics*, Paper 20 at 18. The Board’s concern in *Adaptics* was not the number of grounds, references, or asserted claims, but that “the Petition suffers from a lack of particularity that *results* in voluminous and excessive grounds.” *Id.* at 17. The high number of grounds was the symptom, not the cause, of the Board’s denial of institution in *Adaptics*.

In *Adaptics*, the Board found particularly troublesome a “catch-all” ground, which stated that if prior art references [A] and [B] are not anticipatory, the challenged claims are obvious over these references in combination with each other, and any combination of prior art references [C]–[J]. *Id.* at 9, 18–21. The *Adaptics* decision pointed out that such a statement fails to identify how the asserted references are being combined to teach the claim; i.e., what teachings the additional [C]–[J] references supply, and why one having ordinary skill in the art would find such a combination obvious. *Id.* at 19–20.

The Board in *Adaptics* also considered the presence of “voluminous additional exhibits” that were relied upon not merely in a supporting role, but to show the presence of claim elements in the prior art. *Id.* at 22. Other issues, including whether numerous documents were shown to be prior-art printed publications, were determined to have been presented in the petition with “virtually no analysis.” *Id.* at 23. The *Adaptics* decision characterized these defects as so severe that they “turn[ed] the Petition into an empty

invitation for the Board and Patent Owner to search the record for evidence that might support the full breadth of Petitioner’s contentions.” *Id.* at 22–23.

Accordingly, we review the parties’ arguments and the record evidence to determine whether the Petition lacks particularity in some or all of its assertions such that the Board, in seeking to address scattered and incoherent assertions, would be required to expend resources so great as to impact “the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete [*inter partes*] proceedings.” As discussed below, we determine that the Petition provides sufficient particularity that, despite the numerous grounds, undue resources need not be expended to determine and address the assertions therein.

The primary cause of the number of grounds in the Petition is the reliance on alternate grounds to address independent claims. Absent the alternate grounds based on additional teachings of Ogusu, Grant, or Barton, the Petition presents a straightforward set of assertions, with Fukumoto being applied to nine claims, with an additional reference being applied for each of six different sets of dependent claims. *See, e.g.*, Pet. Reply 2. Ueda is added to teach the additional limitations of claims 3–6, Erixon for claims 7–8, Fuller for claim 8, Dong-Ogusu for claims 14 and 19, Saiki for claims 15 and 20, and Saiki-Masahiko for claim 16. These additional grounds assert different combinations for the same claim only for claims 3 (either Fukumoto or Fukumoto and Ueda), 7 and 8 (either Fukumoto, Fukumoto and Erixon, or for claim 8, Fukumoto and Fuller), and 15 and 20 (either Fukumoto or Fukumoto and Saiki).

For each of these alternative grounds on dependent claims, Petitioner explains why one ground was not sufficient. For claim 3, Fukumoto is asserted to teach a non-means-plus-function claim interpretation, whereas a

Fukumoto-Ueda combination is asserted to also teach Petitioner's preferred means-plus-function interpretation. Pet. 24, 46–50. For claims 7 and 8, Petitioner asserts that Fukumoto teaches the added limitations, and adds a Fukumoto-Erixon combination, and for claim 8, also a Fukumoto-Fuller combination, “[i]f PO argues Fukumoto does not disclose or suggest this limitation.” *Id.* at 27–29, 56–66. For claims 15 and 20, Petitioner asserts that Fukumoto teaches the added limitations, and adds a Fukumoto-Saiki combination “[i]f PO argues Fukumoto does not disclose or suggest this limitation.” *Id.* at 71–72.

Each of the Petitioner's Fukumoto-based combinations for the dependent claims explains the specific features being relied upon in the added reference. *Id.* at 46 (“Fukumoto's mobile device utilizing an oscillatory actuator with Ueda's feedback control”), 59 (“Erixon's teachings of an electromagnetic vibrator for use in a mobile phone with Fukumoto's mobile device”), 66 (“Fuller's electromagnetic vibrator for use in a cell phone to Fukumoto's mobile device”), 68 (“[i]n the combination, paramagnetic materials would be incorporated into Fukumoto's vibration actuator to reduce the reluctance of one or more magnetic circuits based on the teachings of Dong and Ogusu”), 71 (“Saiki's complex vibration modes in Fukumoto's mobile device”), 74 (“Masahiko's beat vibration and aperiodic complex vibration modes in Fukumoto's mobile device”). Petitioner further provides a reason to combine for each combination. *See Id.*

Based on the foregoing, Petitioner's assertions based on Fukumoto (not combined with Grant, Barton, or Ogusu) are sufficiently specific. Turning to the combination of Fukumoto and Grant, Petitioner asserts that this combination is required to teach limitation [1f] “[i]f PO argues

Fukumoto does not disclose or teach this limitation.” *Id.* at 36. Petitioner provides a specific combination of teachings (“Grant’s user-programmed haptic codes in Fukumoto’s mobile device”), with a specific reason to combine (“to allow for user-driven customization of haptic effects”). *Id.* at 36–37. Similarly, Petitioner asserts that the combination of Fukumoto and Barton is required to teach limitation [1f] “[i]f PO argues Fukumoto does not disclose or teach this limitation.” *Id.* at 39. Petitioner provides a specific combination of teachings (Barton’s user-programming of saved vibration patterns with Fukumoto’s user-input features to create or update a mapping between a vibrate pattern and an event), with a specific reason to combine (“to allow for user-driven customization of vibration effects”). *Id.* at 43–44.

Petitioner’s assertions as to the combination of Fukumoto with either Grant or Barton are limited to limitation [1f] (and similar recitations in claim 17). Although the propagation of such alternatives for claim 1 results in separate combinations for each of the dependent claims, the additions of Grant and Barton are focused on limitation [1f], whereas the added references are focused on the limitations of the dependent claims. Although the trial may reveal inconsistencies in how the combined teachings of the asserted references are applied to the dependent claims, such as in the motivation to combine, for purposes of institution, Petitioner has provided sufficient particularity in its assertions for the combinations for Fukumoto with either Grant or Barton, as modified with the above-listed references for the dependent claims.

Turning to the Ogusu-based grounds, Ogusu is applied in a specified combination with Fukumoto to teach claims 1, 2, 7, 11, 15, 17, and 20. Pet. 77–91. Ueda is added to teach the additional limitations of claims 3–6, and Petitioner provides an explanation of how the teachings of Ogusu and

Fukumoto would be modified. *Id.* at 92. Erixon is added to teach the additional limitations of claims 7 and 8, and Petitioner provides an explanation of how the teachings of Ogusu and Fukumoto would be modified. *Id.* at 93.

The additions of Grant or Barton create six additional grounds, and here we agree that Petitioner insufficiently explains how the teachings would be combined due to the absence of any discussion on that combination. *See* Pet. 75–91. For the Fukumoto-based grounds, Grant and Barton are applied in combination with Fukumoto to teach limitation [1f]. However, the Ogusu-Fukumoto combination is based solely upon Ogusu for a non-means-plus-function construction, and upon Ogusu in combination with Fukumoto for a means-plus-function construction, to teach limitation [1f]. Pet. 82. Petitioner neglects to explain how the teachings of either Grant or Barton would be combined with Ogusu or the Ogusu-Fukumoto combination to teach limitation [1f]. As noted by Patent Owner, similar defects also occur for the reasons to combine in the Ogusu-Fukumoto-Ueda assertions for claims 3–6 and the Ogusu-Fukumoto-Erixon assertions for claims 7 and 8. We agree that the six Ogusu-Fukumoto-(Grant or Barton) assertions lack the particularity desired in a Petition. However, because these six assertions form but a small fraction of the total assertions, and the remainder are presented with particularity, we do not consider an exercise of our discretion not to institute to be an appropriate remedy. As we note *supra*, we do not find those grounds persuasive at this stage of the proceeding and on this record.

Although we are constrained to institute on all grounds, we consider that (1) Petitioner has not presented any explanation of the reliance of Grant or Barton in those assertions, and (2) Petitioner is bound to the theories of

unpatentability presented in the Petition. We determine that these considerations mitigate, to a sufficient extent, the resultant burden on “the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete [*inter partes*] proceedings.”

For the above-described reasons, we do not exercise our discretion not to institute *inter partes* review based on the principles set forth in *Adaptics*.

#### IV. CONCLUSION

For the reasons discussed above, we conclude Petitioner has shown a reasonable likelihood of prevailing with respect to at least one of claims 1–9, 11, 14–17, 19, and 20 of the ’830 patent. We determine that the record supports institution. Accordingly, we institute an *inter partes* review of all challenged claims under all grounds set forth in the Petition. 37 C.F.R. § 42.108(a) (“When instituting *inter partes* review, the Board will authorize the review to proceed on all of the challenged claims and on all grounds of unpatentability asserted for each claim.”); *see SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1355 (2018) (noting that the language of 35 U.S.C. § 314(b) “indicates a binary choice—either institute review or don’t”); *PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (interpreting the statute as requiring “a simple yes-or-no institution choice respecting a petition, embracing all challenges included in the petition”).

Our determination at this stage of the proceeding is based on the evidentiary record currently before us. This decision to institute trial is not a final decision as to patentability of any claim for which an *inter partes* review has been instituted. Our final decision will be based on the full record developed during trial.

V. ORDER

For the foregoing reasons, it is:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is hereby instituted for all asserted grounds on all asserted claims, i.e.:

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>         |
|----------------------------|--------------------|-----------------------------------|
| 1–3, 7–9, 15, 17, 20       | 103(a)             | Fukumoto                          |
| 1–3, 7–9, 15, 17, 20       | 103(a)             | Fukumoto, Grant                   |
| 1–3, 7–9, 15, 17, 20       | 103(a)             | Fukumoto, Barton                  |
| 3–6                        | 103(a)             | Fukumoto, Ueda                    |
| 3–6                        | 103(a)             | Fukumoto, Grant, Ueda             |
| 3–6                        | 103(a)             | Fukumoto, Barton, Ueda            |
| 7–8                        | 103(a)             | Fukumoto, Erixon                  |
| 7–8                        | 103(a)             | Fukumoto, Grant, Erixon           |
| 7–8                        | 103(a)             | Fukumoto, Barton, Erixon          |
| 8                          | 103(a)             | Fukumoto, Fuller                  |
| 8                          | 103(a)             | Fukumoto, Grant, Fuller           |
| 8                          | 103(a)             | Fukumoto, Barton, Fuller          |
| 14, 19                     | 103(a)             | Fukumoto, Dong, Ogusu             |
| 14, 19                     | 103(a)             | Fukumoto, Grant, Dong, Ogusu      |
| 14, 19                     | 103(a)             | Fukumoto, Barton, Dong, Ogusu     |
| 15, 20                     | 103(a)             | Fukumoto, Saiki                   |
| 15, 20                     | 103(a)             | Fukumoto, Grant, Saiki            |
| 15, 20                     | 103(a)             | Fukumoto, Barton, Saiki           |
| 16                         | 103(a)             | Fukumoto, Saiki, Masahiko         |
| 16                         | 103(a)             | Fukumoto, Grant, Saiki, Masahiko  |
| 16                         | 103(a)             | Fukumoto, Barton, Saiki, Masahiko |
| 1, 2, 7, 11, 15, 17, 20    | 103(a)             | Ogusu, Fukumoto                   |
| 1, 2, 7, 11, 15, 17, 20    | 103(a)             | Ogusu, Fukumoto, Grant            |
| 1, 2, 7, 11, 15, 17, 20    | 103(a)             | Ogusu, Fukumoto, Barton           |
| 3–6                        | 103(a)             | Ogusu, Fukumoto, Ueda             |
| 3–6                        | 103(a)             | Ogusu, Fukumoto, Grant, Ueda      |
| 3–6                        | 103(a)             | Ogusu, Fukumoto, Barton,          |

| <b>Claim(s) Challenged</b> | <b>35 U.S.C. §</b> | <b>Reference(s)/Basis</b>          |
|----------------------------|--------------------|------------------------------------|
|                            |                    | Ueda                               |
| 7–8                        | 103(a)             | Ogusu, Fukumoto, Erixon            |
| 7–8                        | 103(a)             | Ogusu, Fukumoto, Grant,<br>Erixon  |
| 7–8                        | 103(a)             | Ogusu, Fukumoto, Barton,<br>Erixon |

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial; the trial will commence on the entry date of this Decision.

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