

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INFINEON TECHNOLOGIES AG,
Petitioner,

v.

AMATECH GROUP LIMITED,
Patent Owner.

IPR2022-00951
Patent 9,165,240 B2

Before STACEY G. WHITE, BRIAN D. RANGE, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

WHITE, *Administrative Patent Judge*.

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

I. INTRODUCTION

Infineon Technologies AG (“Petitioner”) filed a Petition requesting an *inter partes* review of claims 1–11 of U.S. Patent No. 9,165,240 B2 (Ex. 1001, “the ’240 patent”). Paper 2 (“Pet.”). AmaTech Group Limited (“Patent Owner”) filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

Under 35 U.S.C. § 314(a), an *inter partes* review may not be instituted unless the information presented in the petition “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.” The following findings of fact and conclusions of law are not final, but are made for the sole purpose of determining whether Petitioner meets the threshold for initiating review. Any final decision shall be based on the full trial record, including any response timely filed by Patent Owner. Any arguments not raised by Patent Owner in a timely-filed response may be deemed waived.

For the reasons stated below, we determine that Petitioner has established a reasonable likelihood that it would prevail with respect to at least one claim. We hereby institute an *inter partes* review as to all of the challenged claims of the ’240 patent on all of the asserted grounds of unpatentability.

A. Related Matters

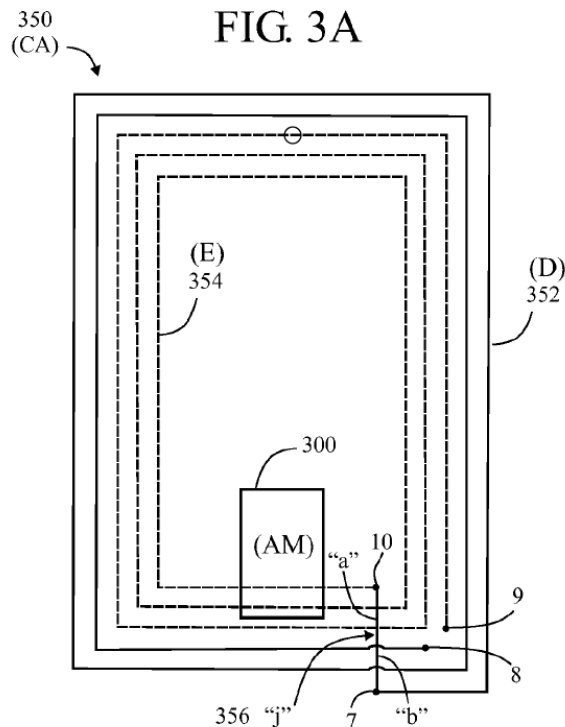
The parties identify the following related district court proceedings: *Smart Packaging Solutions SA v. CPI Card Group Inc.*, No. 1:21-cv-00556 (D. Del.); *Smart Packaging Solutions SA v. Perfect Plastic Printing Corp.*, No. 1:21-cv-00557 (D. Del.). Pet. xiii; Paper 4, 2. The parties further indicate that patents related to the ’240 patent are at issue in the following proceedings before the Board: IPR2022-00235 (U.S. Patent No. 9,195,932

B2); IPR2022-00417 (U.S. Patent No. 9,033,250 B2); IPR2022-00650 (U.S. Patent No. 9,633,304 B2). Pet. xiii; Paper 4, 3.

B. The '240 Patent

The '240 patent, titled “Coupling In and To RFID Smart Cards,” relates to “smart cards having RFID (radio frequency identification) chips or chip modules,” and “more particularly to improving coupling between components within the smart card, such as between a module antenna (MA) associated with the chip module (CM) and a card antenna (CA) on the card body (CB) of the smart card and consequent improvements in interacting with external RFID readers.” Ex. 1001, code (54), 1:24–34.

Figure 3A of the '240 patent, showing a diagram of a card antenna (CA) for a smart card, is reproduced below:



As shown in Figure 3A, card antenna (CA) 350 is a “substantially planar, generally rectangular spiral of wire embedded in a card body (CB, not shown).” *Id.* at 13:59–61. Card antenna (CA) 350 comprises outer

winding (D) 352 having outer end 7 and inner end 8 (shown as a solid line), and inner winding (E) 354 having outer end 9 and inner end 10 (shown as a dashed line). *Id.* at 13:61–14:3. Outer end 7 of outer winding (D) is connected with inner end 10 of inner winding (E), and “voltages induced in the inner and outer windings E,D have opposite phase from one another.” *Id.* at 14:16–26. “By connecting . . . inner end 10 of inner winding E to outer end 7 of outer winding D, or ‘reverse phase’[], the inner and outer windings are coupled in close proximity and the effect is additive since the induced voltage of the inner winding E has opposite phase (phase inversion) than the voltage induced in the outer winding D.” *Id.* at 15:11–18.

C. Illustrative Claims

Claims 1–11 are challenged, and claims 1 and 9 are independent. Claim 1 is illustrative and reproduced below.

1. A card body for a smart card, comprising:
a card antenna extending at least partially around a periphery of a surface of the card body;
wherein the card antenna comprises two windings, an inner winding and an outer winding, connected in reverse phase with one another.

Ex. 1001, 26:7–12.

D. Prior Art Relied Upon

Petitioner relies upon the references listed below:

Reference	Exhibit No.
Eray, WO 2010/066799 A2, published June 17, 2010 (“Eray-WO799”)	1006
Phillips, US 2008/0203171 A1, published Aug. 28, 2008 (“Phillips-171”)	1029
Caruana et al., US 2008/0198078 A1, published Aug. 21, 2008 (“Caruana”)	1026

E. Asserted Grounds of Unpatentability

Petitioner, supported by the Declaration of Dr. Daniel van der Weide (Ex. 1003), asserts the following grounds of unpatentability (Pet. 3, 9–76)¹:

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–3, 9–11	103	Eray-WO799
1 ² , 4–7	103	Eray-WO799, Phillips-171
1, 4 ³ , 8	103	Eray-WO799, Phillips-171, Caruana

Patent Owner opposes Petitioner’s contentions and relies upon the Declaration of Dr. William Eisenstadt. Ex. 2001.

II. ANALYSIS⁴

A. Level of Ordinary Skill in the Art

In order to determine whether an invention would have been obvious, we consider the level of ordinary skill in the pertinent art at the critical time. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The resolution of this question is important because it allows us to “maintain[] objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718

¹ We apply the pre-AIA version of 35 U.S.C. § 103 because the claims at issue have an effective filing date prior to March 16, 2013, the effective date of the Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”). *See* Ex. 1001, code (22).

² Petitioner does not list claim 1 in its table on page 3, but Petitioner provides argument as to claim 1 in its discussion of the ground. *See* Pet. 56–57.

³ Petitioner does not list claims 1 and 4 in its table on page 3, but Petitioner provides argument as to claims 1 and 4 in its discussion of the ground. *See* Pet. 73.

⁴ Petitioner argues that the *Fintiv* factors weigh against discretionary denial. Pet. 77–78; *see Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 5–6 (PTAB Mar. 20, 2020) (precedential). Because Patent Owner does not argue for discretionary denial, we see no need to consider the issue further.

(Fed. Cir. 1991). Generally, it is easier to establish obviousness under a higher level of ordinary skill in the art. *Innovation Toys, LLC v. MGA Entm't, Inc.*, 637 F.3d 1314, 1323 (Fed. Cir. 2011).

Petitioner contends that a person of ordinary skill in the art “would have had a Bachelor’s degree in electrical engineering or a similar field, and 1–2 years of experience researching and developing antennas used in RFID applications,” and that “[a]dditional educational background could substitute for professional experience and vice versa.” Pet. 8 (citing Ex. 1003 ¶¶ 22–26).

Patent Owner argues that Petitioner’s definition of the level of ordinary skill in the art is too broad because the field of RFID is wide, with important differentiation criteria including the operating frequency of the reader, the physical coupling method, and the range of the system. Prelim. Resp. 10 (citing Ex. 2001 ¶¶ 20–28; Ex. 2003, 11, 22). According to Patent Owner, the smart cards of the ’240 patent operate on relatively low frequencies and require antennas that perform inductive coupling, and are technologically distinct from antennas for microwave RFID devices. *Id.* at 10–11 (citing Ex. 2001 ¶¶ 24–26). Thus, Patent Owner asserts that a person having ordinary skill in the art “would have had a Bachelor’s degree in electrical engineering or a similar field, and 1–2 years of experience researching and developing antennas for RFID devices that are used for inductive coupling; additional educational background could substitute for professional experience and *vice versa*.” *Id.* (citing Ex. 2001 ¶ 26).

The Federal Circuit has identified a non-exhaustive list of factors to be considered in defining the level of skill in the art including: “(1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which

innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.” *Best Med. Int’l, Inc. v. Elekta Inc.*, 46 F.4th 1346, 1353 (Fed. Cir. 2022) (quotation omitted). The parties are in general agreement as to the level of education (undergraduate degree in electrical engineering or equivalent) and the number of years of experience working with RFID devices (1–2 years), but differ as to the exact nature of that experience (developing antennae used in RFID devices versus developing antennae used in RFID devices for inductive coupling). The specification of the ’240 patent describes its technical field as relating to “‘secure documents’ ...having RFID (radio frequency identification) chips ...operating in contactless mode (ISO 14443) including dual interface (‘DI’, or ‘DIF’) cards which can also operate in contact mode (ISO 7816-2), and more particularly to improving coupling between components within the smart card ...and consequent improvements in interacting with external RFID readers.” Ex. 1001, 1:24–34. The specification discusses both inductive and capacitive coupling. *See e.g., id.* at 6:55–58. Patent Owner submitted into the record a text titled RFID Handbook, which details different frequencies and types of coupling that may be at use by various RFID systems. *See* Ex. 2003⁵, 22–23. Although this text differentiates between “inductively or capacitively coupled system[s] and microwave system[s] or backscatter system[s]” (*id.* at 23 (emphasis omitted)), its description of each of these types of RFID devices indicates that an ordinary artisan would have had experience with RFID devices generally. Thus, on the record currently before us, we are not persuaded that the level of

⁵ Our citations are to the native page numbers in the document and not Patent Owner’s numbering.

ordinary skill should be narrowly confined to developing antenna for RFID devices that are used for inductive coupling. For the purposes of this Decision, we adopt Petitioner’s definition of the level of ordinary skill in the art as “a Bachelor’s degree in electrical engineering or a similar field, and 1–2 years of experience researching and developing antennas used in RFID applications.” *See* Pet. 8.

To the extent that the parties believe that further specificity is needed in the definition of the level of ordinary skill in the art, we invite the parties to provide further argument and evidence. As with all determinations made at this point in the proceeding, our preliminary determinations as to the level of ordinary skill in the art may be revisited based on the evidence and argument of record during the proceeding.

B. Dr. van der Weide’s Level of Experience

Patent Owner argues that we should not give substantial weight to the testimony of Petitioner’s declarant, Dr. van der Weide, because he “lacks relevant experience to provide opinions through the lens of a [person having ordinary skill in the art].” Prelim. Resp. 27–28 (citing Ex. 2001 ¶¶ 71–72. According to Patent Owner, Dr. van der Weide “has experience with RFID that operates at microwave frequencies,” but “identifies no experience with relevant inductive RFID systems at lower frequencies (*e.g.*, frequencies such as 13.56MHz and 8.2MHz).” *Id.* at 27. This argument is based on Patent Owner’s articulation of the level of ordinary skill in the art, which we have not adopted. Based on the current record, Dr. van der Weide’s education and experience are sufficient to allow us to grant his testimony our full consideration. *See* Ex. 1003 ¶¶ 2–7.

C. Claim Construction

In an *inter partes* review proceeding, a patent claim shall be construed 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) (as amended Oct. 11, 2018). Our rule adopts the same claim construction standard used by Article III federal courts, which follow *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc), and its progeny. Under this standard, the words of a claim are generally 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 patent including the specification. *See Phillips*, 415 F.3d at 1312–13.

Petitioner asserts that “[n]o claim term requires an exact outer boundary construction, because the prior art relied upon herein meets the claim terms under any reasonable interpretation.” Pet. 9. Patent Owner proposes constructions for the claim terms “card antenna” and “an inner winding and an outer winding, connected in reverse phase with one another.” Prelim. Resp. 11–27. According to Patent Owner, Petitioner also has proposed its own constructions for these terms, despite stating that no claim term requires construction. *Id.* at 12 (citing Pet. 1, 19).

1. “card antenna”

Patent Owner defines a “card antenna” as “an antenna tuned to a single resonance frequency that enables a chip to communicate with an external reader.” Prelim. Resp. 12. According to Patent Owner, Petitioner defines a “card antenna” as “a conductive structure formed in or on a card body that, e.g., may increase the effective operative distance between an antenna module AM comprising a chip and an external contactless reader with capacitive and inductive coupling.” *Id.* at 12 (citing Pet. 19).

Patent Owner asserts that its proposed construction would harmonize issues between this proceeding and IPR2022-00235. *Id.* at 13. We have not made a determination as to Patent Owner’s proposed construction in IPR2022-00235. That determination will be made in due course and be based on the arguments and evidence of record in that proceeding.

As to this proceeding, on the current record, we are not persuaded that Patent Owner’s proposed construction is correct. Patent Owner directs us to multiple citations in the ’240 patent specification that indicate a resonance frequency for the antenna. *See, e.g.*, Prelim Resp. 13 (citing Ex. 1001, 16:16–19 (“The card antenna CA ... resonant frequency 13.56 MHz”)). Patent Owner further argues that “[n]owhere does the ’240 patent disclose a card antenna tuned to multiple resonance frequencies.” *Id.* at 14. Patent Owner then contends that “Petitioner argues that a card antenna could be tuned to multiple, different frequencies” and thus, Petitioner’s implied construction is incorrect. *Id.*; *see also* Ex. 2001 ¶ 48.

As an initial matter, we note that none of the claims recite specific frequencies or frequency ranges. Further, the examples in the specification describe the frequency with permissive and approximate language. *See e.g.*, Ex. 1001, 13:14–15 (“**may** have a self-resonance frequency of **approximately** 75 MHz”) (emphasis added); 13:18–21 (capacitors “**may** reduce the resonance frequency to a more desirable range of **approximately** 13~17 MHz”) (emphasis added). The specification also notes that “[w]hile the invention(s) has/have been described with respect to a limited number of embodiments, these should not be construed as limitations on the scope of the invention(s), but rather as examples of some of the embodiments.” *Id.* at 25:65–26:1; *see also id* at 6:18–20 (embodiments “should be construed as illustrative rather than limiting”), 5:22–24 (“non-limiting example”). The

Federal Circuit has noted that “[e]mbodiments in the specification—even if there is only one embodiment—cannot limit the scope of the claims absent the patentee’s ‘words or expressions of manifest exclusion or restriction.’” *Apple Inc. v. Wi-LAN Inc.*, 25 F.4th 960, 967 (Fed. Cir. 2022) (citing *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014)). On the current record, we see no such manifest exclusion or restriction in the ’240 patent specification.

On this record, we decline Patent Owner’s request to limit the claims to the described single-frequency embodiments. *See Phillips*, 415 F.3d at 1323. We need not provide further express construction of this claim language for purposes of this Decision.

2. “*an inner winding and an outer winding,
connected in reverse phase with one another*”

Patent Owner defines “an inner winding and an outer winding, connected in reverse phase with one another” as “an inner winding and an outer winding are connected, such that during operation, the phase of the induced voltage in the inner winding is shifted by 180° from the phase of the induced voltage in the outer winding.” Prelim. Resp. 15. According to Patent Owner, Petitioner defines “an inner winding and an outer winding, connected in reverse phase with one another” as “the inner end of the inner winding is connected to the outer end of the outer winding.” *Id.* at 15, 22–23 (citing Pet. 1). Patent Owner asserts that “Petitioner’s proposal fails to ascribe any meaning to the claim language ‘reverse phase.’” *Id.* at 15.

As to the phrase “connected in reverse phase with one another,” Petitioner’s declarant, Dr. van der Weide opines that it “is a term that appears to have been coined in the ’240 patent.” Ex. 2001 ¶ 128. Dr. van der Weide goes on to testify that he is “not aware of any use of this or

similar terminology in the art, and the '240 patent repeatedly places the term 'reverse phase' in quotation marks.” *Id.* (citing Ex. 1001, 4:3, 4:31, 14:17, 15:13, 17:11, 18:27, 20:6–7, 20:10). According to Petitioner, “[t]he '240 patent says a 'reverse phase' connection is formed by connecting the inner end of an inner winding to the outer end of an outer winding. The '240 patent never describes or illustrates any other manner in which two windings are connected in 'reverse phase.” Pet. 30 (citing Ex. 1001, 15:11–18, 14:16–23, 18:7–29, Figs. 3A & 4A; Ex. 1003 ¶ 129) (internal citations omitted).

According to Patent Owner, “‘reverse phase’ refers to two signals that have phases shifted by 180° from each other. When the phase shift is 180° (i.e., $\theta = 0^\circ$ for the non-shifted wave, and $\theta = 180^\circ$ for the shifted wave), the waves are mirror images of each other.” Prelim. Resp. 18 (citing Ex. 2001 ¶ 57). Patent Owner contends that one of ordinary skill in the art would have referred to waves shifted by 180° as being in “phase opposition.” *Id.* at 19. Patent Owner asserts that “the '240 patent refers to such waves as having ‘opposite phase,’ which is disclosed as being synonymous with ‘phase inversion.’” *Id.* (citing Ex. 1001, 14:24–26, 15:15–17; Ex. 2001 ¶ 58).

Both parties direct us to the same language in the specification to support their views on the claim language. Specifically, they direct us to this explanation:

By connecting the outer winding D and inner winding E in this manner (inner end 10 of inner winding E to outer end 7 of outer winding D, or “reverse phase”), the inner and outer windings are coupled in close proximity and the effect is additive since the induced voltage of the inner winding E has opposite phase (phase inversion) than the voltage induced in the outer winding D.

Ex. 1001, 15:11–17, cited on Prelim. Resp. 20 *and* Pet. 30. On the current record, our reading of this language is that “reverse phase” means connecting the inner end of the inner winding to the outer end of the outer winding. The discussion of opposite phase or phase inversion is directed to an effect that could arise from this sort of connection and not to a description of what is required to be “connected in reverse phase.” Thus, for the purposes of this Decision, we construe “an inner winding and an outer winding, connected in reverse phase with one another” to mean “the inner end of the inner winding is connected to the outer end of the outer winding.”

D. Overview of the Asserted Prior Art

1. Eray-WO799 (Exhibit 1006)

Eray-WO799 relates to an RFID antenna circuit for use in, e.g., contactless cards and card readers. Ex. 1006, 1:1–10.

Figure 12 of Eray-WO799 shows an embodiment of the RFID antenna circuit and is reproduced below:

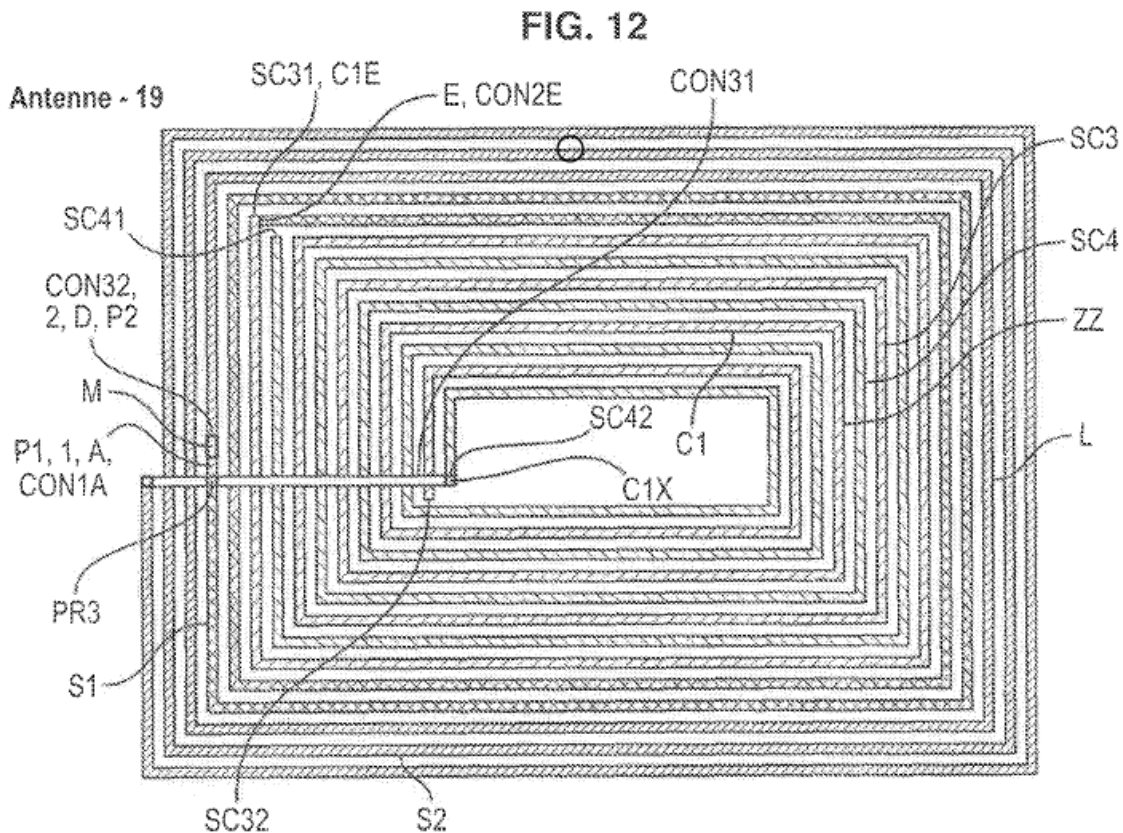


Figure 12 depicts antenna L formed by turns S1, S2 situated between first end terminal D and second end terminal E. *Id.* at 34:10–11. Tuning capacitor C1 is formed by turns SC3 (having first and second ends SC31, SC32) and turns SC4 (having first and second ends SC41, SC42). *Id.* at 35:3–5.

2. Phillips-171 (Ex. 1029)

Phillips describes antenna designs for contactless payment cards in which “reduced size antennas are geometrical[ly] disposed in areas removed from card areas designated for embossing.” Ex. 1029, code (57).

3. *Caruana (Ex. 1026)*

Caruana discloses adjusting frequency tuning of a resonant circuit in a non-contact smart card by varying the regular spacing of adjacent turns on at least one zone of the antenna. Ex. 1026, code (57), ¶ 3.

E. *Obviousness over Eray-WO799*

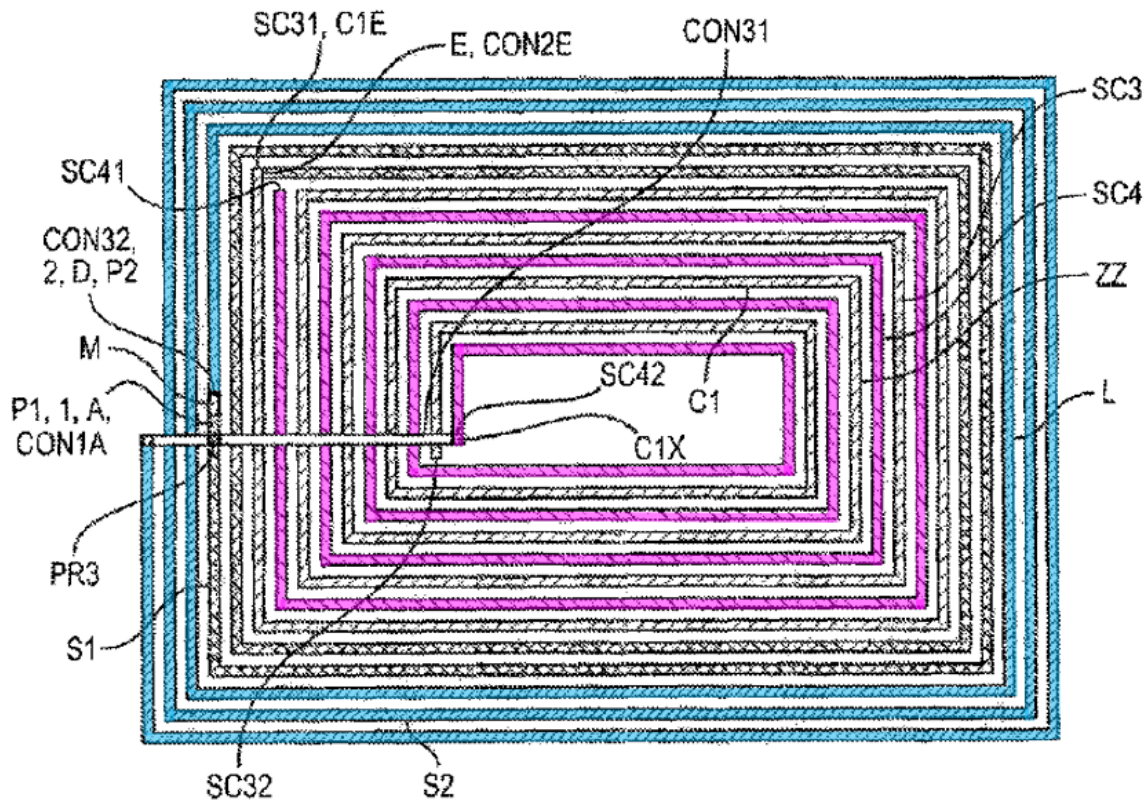
Petitioner asserts that claims 1–3 and 9–11 are unpatentable under 35 U.S.C. § 103 as obvious over Eray-WO799, citing the Declaration of Dr. Daniel van der Weide for support. Pet. 9–45 (citing Ex. 1003).

1. *Independent Claim 1*

Petitioner’s allegations may be summarized as follows: With respect to the preamble⁶ “[a] card body for a smart card,” Petitioner directs us to Eray-WO799’s card body for a smart card as depicted in Figure 12 of the reference. Pet. 16–18. As to the limitation “a card antenna extending at least partially around a periphery of a surface of the card body,” Petitioner directs us to Eray-WO799’s RFID antenna circuit as shown in Figure 12 of the reference. Pet. 18–28. Specifically, Petitioner asserts that “interconnected turns S1, S2, SC3, and SC4 are a ‘card antenna,’ as claimed.” *Id.* at 21. For the limitation “wherein the card antenna comprises two windings, an inner winding and an outer winding,” Petitioner here again directs us to Eray-WO799’s Figure 12. Pet. 28–33. Petitioner argues that “[e]ach of S1, S2, SC3 and SC4 is a ‘distinct portion’ of the card antenna, comprises multiple ‘turns of wire’ formed in a coil, and thus is a ‘winding’ as claimed.” *Id.* at 28. Petitioner’s annotated Figure 12 is reproduced below.

⁶ For the purposes of this Decision, we need not determine whether the preamble is limiting because Petitioner’s allegations are sufficient to show that Eray-WO799 would have taught the elements of the preamble.

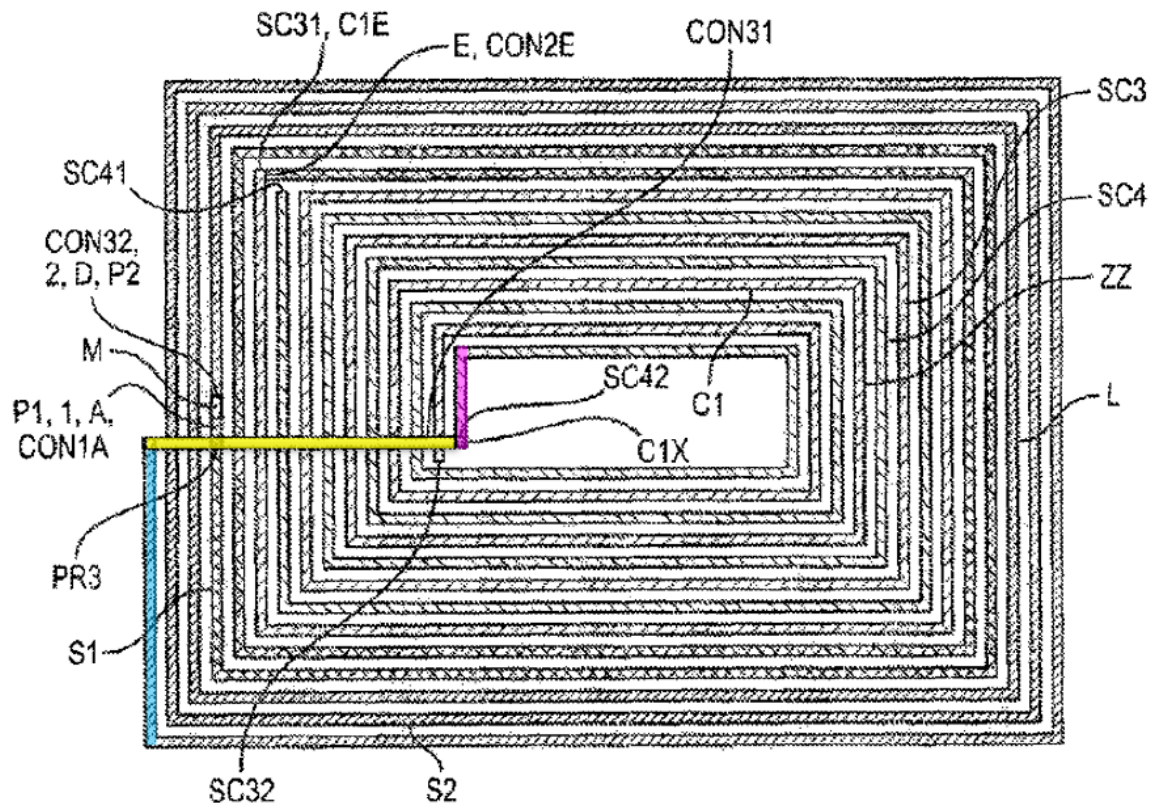
FIG. 12



Petitioner annotates Eray-WO799's Figure 12, shown above, to illustrate its allegations. *Id.* at 29. According to Petitioner, "Eray-WO799 describes SC4 (magenta ...) as being closest to the 'center' and S2 (blue ...) as being at the 'periphery.'" *Id.*

As to the limitation, "connected in reverse phase with one another," Petitioner asserts that this is also taught by Eray-WO799's Figure 12. *Id.* at 29–33. Petitioner's annotated Figure 12 is reproduced below.

FIG. 12



Petitioner annotates Eray-WO799’s Figure 12, shown above, to illustrate its allegations. *Id.* at 31. According to Petitioner, “the inner end (labeled SC42 and C1X) of turn SC4 (a portion thereof highlighted magenta...) is directly connected to the outer end of turn S2 (a portion thereof highlighted blue...).” *Id.* at 30.

Patent Owner disputes Petitioner allegations by arguing that Eray-WO799 does not disclose the recited card antenna and that Eray-WO799 does not disclose the recited inner and outer windings connected in reverse phase. Prelim. Resp. 31–33 (citing Ex. 2001 ¶¶ 76–78).

As to the “card antenna,” Patent Owner contends that Eray-WO799’s Figure 34 shows that turn S2 is part of Eray-WO799’s first circuit and turns S1, S3, and S4 are part of the second circuit. *Id.* at 31–32. Patent Owner asserts that Petitioner’s challenge fails because “Petitioner has not shown

that its collection of components from two circuits tuned to two different frequencies results in an antenna tuned to a single resonance frequency.” *Id.* at 32.

Patent Owner’s argument is premised on its proposed claim construction that would have limited the card antenna to be one that is “tuned to a single resonance frequency.” *Id.* at 31. For reasons discussed above, we do not adopt Patent Owner’s proposed construction. *See* § II.C.1. In addition, Petitioner addresses the frequency of the alleged antenna circuit in its allegations. Specifically, Petitioner contends that

Eray-WO799 describes ‘frequency tuning[]’ for each ‘antenna circuit[] (M, S2) and (ZZ, S1).’ [Ex. 1006,] 36:22-24. SC3 and SC4 ‘make it possible to equalize the tuning frequency of’ the circuit formed by chip module M and S2 with ‘the tuning frequency of the circuit formed by’ S1 and ZZ (SC3 and SC4) to ‘get the predetermined tuning frequency 13.56 MHz.’ [Ex. 1006], 36:10-14; [Ex. 1003] ¶¶ 66-67. By selecting ‘the value of the currents and intrinsic inductances of the turns,’ the two ‘antenna circuits (M, S2) and (ZZ, S1)’ can have ‘quasi-independent’ tuning frequencies or ‘frequency tunings combined in one and the same frequency range, making it possible to obtain a large bandwidth with respect to the RFID transmission channel.’ [Ex. 1006,] 36:22-37:2; [Ex. 1003] ¶ 68.

Pet. 15–16. Thus, Petitioner points out that Eray-WO799 expressly discloses that the circuits could have “2 frequency tunings combined in one and the same frequency range.” Ex. 1006, 36:22–28. Eray-WO799 teaches tuning the circuits in order to “to obtain a frequency tuning that is as close as possible to the useful frequency, for example 13.56 MHz.” *Id.* at 37:3–5. On this record, we are persuaded that Petitioner’s argument and evidence is sufficient to teach the recited card antenna.

Patent Owner further argues that Petitioner’s allegations and evidence are insufficient to disclose “an inner winding and an outer winding,

connected in reverse phase with one another.” Prelim. Resp. 33.

Specifically, Patent Owner asserts that “Petitioner has not shown that Eray-WO799’s alleged inner winding and outer winding see induced voltages with the phases shifted by 180°.” *Id.*

Here again, Patent Owner’s argument is premised on its proposed claim construction that would have required the phase of the induced voltage in the inner winding to be shifted by 180° from the phase of the induced voltage in the outer winding. *Id.* at 15, 33. For reasons discussed above, we do not adopt Patent Owner’s proposed construction. *See* § II.C.2. On the current record, we are persuaded by Petitioner’s argument and evidence that Eray-WO799 teaches connecting the inner and outer windings in the manner described in the ’240 patent.

We have reviewed Petitioner’s arguments and evidence regarding the remaining limitations of claim 1, and we find them to be sufficient to meet the threshold of § 314(a). Thus, we are persuaded that Petitioner has established a reasonable likelihood of prevailing on its assertion that claim 1 is unpatentable under § 103 as obvious over Eray-WO799.

2. Dependent Claims 2, 3, and 9–11

Petitioner accounts for the limitations recited in claims 2, 3, and 9–11. Pet. 33–45. Petitioner provides detailed explanations as to how the prior art teaches or suggests these remaining limitations and claims, citing Dr. van der Weide’s testimony for support. *Id.* (citing Ex. 1003). Patent Owner’s Preliminary Response does not separately address these dependent claims. *See* Prelim. Resp. 31–33.

Based on the evidence in this present record, we are persuaded that Petitioner has shown sufficiently for purposes of this Decision that Eray-

WO799 teaches or suggests all of the limitations recited in claims 2, 3, and 9–11.

Thus, we are persuaded that Petitioner has established a reasonable likelihood of prevailing on its assertion that claims 2, 3, and 9–11 are unpatentable under § 103 as obvious over Eray-WO799.

F. Obviousness over Eray-WO799 and Phillips-171

Petitioner asserts that claims 1 and 4–7 are unpatentable under 35 U.S.C. § 103 as obvious over Eray-WO799 and Phillips-171, citing the Declaration of Dr. van der Weide for support. Pet. 45–65 (citing Ex. 1003). Patent Owner’s Preliminary Response does not separately address these allegations. *See* Prelim. Resp. 34. Patent Owner’s contentions regarding the alleged insufficiency of Petitioner’s challenge to claim 1 as obvious over Eray-WO799 also would be applicable to this Petitioner’s allegations as to this ground, but they are unpersuasive for the reasons discussed above.

Based on the evidence in this present record, we are persuaded that Petitioner has shown sufficiently for purposes of this Decision that Eray-WO799 and Phillips-171 teach or suggest all of the limitations recited in claims 1 and 4–7.

G. Obviousness over Eray-WO799, Phillips-171, and Caruana

Petitioner asserts that claims 1, 4, and 8 are unpatentable under 35 U.S.C. § 103 as obvious over Eray-WO799, Phillips-171, and Caruana, citing the Declaration of Dr. van der Weide for support. Pet. 65–76 (citing Ex. 1003). Patent Owner’s Preliminary Response does not separately address these allegations. *See* Prelim. Resp. 34. Patent Owner’s contentions regarding the alleged insufficiency of Petitioner’s challenge to claim 1 as obvious over Eray-WO799 also would be applicable to this Petitioner’s

allegations as to this ground, but they are unpersuasive for the reasons discussed above.

Based on the evidence in this present record, we are persuaded that Petitioner has shown sufficiently for purposes of this Decision that Eray-WO799, Phillips-171, and Caruana teach or suggest all of the limitations recited in claims 1, 4, and 8.

III. CONCLUSION

For the foregoing reasons, we determine that the arguments and evidence presented in the Petition establish that there is a reasonable likelihood that Petitioner would prevail with respect to at least one of challenged claims 1–11 of the '240 patent. At this juncture in the proceeding, we have not made a final determination with respect to the patentability of the challenged claims, or with respect to claim construction.

IV. 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 the asserted grounds:

Claims Challenged	35 U.S.C. §	References
1–3, 9–11	103	Eray-WO799
1, 4–7	103	Eray-WO799, Phillips-171
1, 4, 8	103	Eray-WO799, Phillips-171, Caruana

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.

IPR2022-00951
Patent 9,165,240 B2

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