

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NXP USA, INC.,
Petitioner,

v.

BELL SEMICONDUCTOR, LLC,
Patent Owner.

IPR2024-00142
Patent 7,535,330 B2

Before JEFFREY W. ABRAHAM, JOHN D. HAMANN, and
BRIAN D. RANGE, *Administrative Patent Judges*.

HAMANN, Administrative Patent Judge.

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

I. INTRODUCTION

NXP USA, Inc. (“Petitioner”) filed a petition for *inter partes* review of claims 1–20 of U.S. Patent No. 7,535,330 B2 (Ex. 1001, “the ’330 patent”). Paper 2 (“Pet.”). Bell Semiconductor, LLC (“Patent Owner”) subsequently filed a statutory disclaimer for claims 17–20 of the ’330 patent. Ex. 2002. Thus, claims 1–16 (the “challenged claims”) are the claims challenged in this proceeding.¹ Patent Owner also filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

We have authority to determine whether to institute an *inter partes* review under 35 U.S.C. § 314 (2018) and 37 C.F.R. § 42.4(a). An *inter partes* review may be instituted if “the information presented in the petition filed under section 311 and any response filed under section 313 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(a).

Upon consideration of the papers, we determine that the information presented in the Petition does not demonstrate a reasonable likelihood that Petitioner would prevail in establishing that at least one challenged claim is unpatentable. Accordingly, we deny the Petition and do not institute *inter partes* review.

A. Real Parties-In-Interest

Petitioner identifies itself, as well as NXP Semiconductors N.V.; NXP B.V.; and Freescale Semiconductor Holdings V, Inc. as real parties-in-

¹ A “patent owner may file a statutory disclaimer under 35 U.S.C. 253(a) in compliance with §1.321(a) of this chapter, disclaiming one or more claims in the patent. No *inter partes* review will be instituted based on disclaimed claims.” 37 C.F.R. § 42.107(e) (2023).

interest. Pet. 1. Patent Owner identifies itself as the real party-in-interest in this proceeding, and states that it “is a wholly owned subsidiary of Hilco Patent Acquisition 56, LLC, which is owned by Hilco IP Merchant Capital, LLC, Hilco, Inc., Vulcan Ventures Inc., CDPQ Investments (U.S.) Inc., and KLIM AIV, LP.” Paper 7, 1.

B. Related Matter

The parties identify *Bell Semiconductor, LLC v. NXP USA, Inc.*, No. 8:22-cv-02133-HDV-ADS (C.D. Cal.) as a matter that may affect, or be affected by, a decision in this proceeding. *Id.*; Pet. 1.

C. The '330 Patent

The '330 patent relates “to electro-magnetic induction and interference, and more particularly, to the design of inductor coil elements within a semiconductor device.” Ex. 1001, 1:7–9. As background, the '330 patent explains that “[t]echnological advancements in semiconductor manufacturing and electronic circuit design have resulted in a continual increase of component density within electrical circuits.” *Id.* at 1:11–14. “As the proximity of electrical components increases, [however,] the [e]ffects of electrical cross-coupling or crosstalk may significantly degrade the performance of the circuit.” *Id.* at 1:17–19. “For example, inductors that are sufficiently proximate to each other may reduce the electrical performance of each other through parasitic mutual inductance.” *Id.* at 1:28–30. According to the '330 patent, “[i]n order to reduce the amount of inductor cross-coupling, circuit designers have been forced to provide a sufficient distance between inductor coils so that electro-magnetic interference between the coils is reduced.” *Id.* at 1:33–37.

In response, the '330 patent discloses embodiments that “minimize[] the crosstalk between inductors placed in close proximity to each other, [and thus,] the overall chip geometry may be reduced and component density improved.” *Id.* at 2:43–46. Such an embodiment is illustrated in Figure 4, shown below.

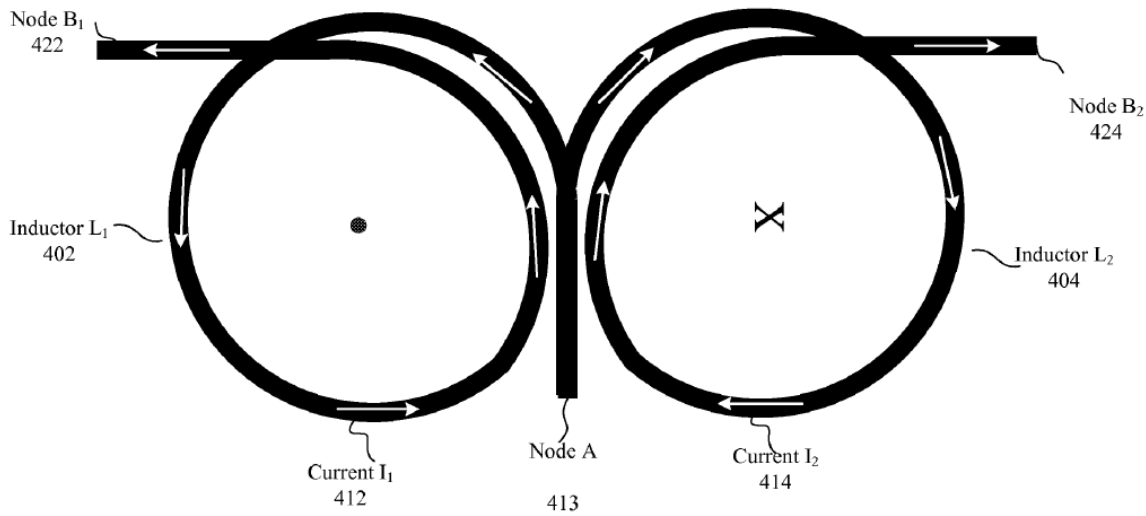


Figure 4

Figure 4 “illustrates a schematic spiral inductors design according to various embodiments of the” ’330 patent. *Id.* at 4:34–35. The “design comprises a first inductor L₁ 402 and a second inductor L₂ 404 that is counter wound relative to the first inductor L₁ 402.” *Id.* at 4:36–38. As illustrated, “[b]oth inductors 402, 404 have a common node A 406 with current flowing in each inductor as shown.” *Id.* at 4:38–40. “Specifically, the current flows in a first direction [(illustrated by arrows pointing counter-clockwise)] from node A 413 to node B₁ 422 and the current flows in a second direction [(illustrated by arrows pointing clockwise)], which is counter to the first direction, from node A 413 to node B₂ 424.” *Id.* at 4:40–43.

According to the '330 patent, “the currents in each inductor cause a magnetic field inside the coils of the inductors.” *Id.* at 4:43–45. More specifically, “[t]he current I_1 flowing in the first inductor L_1 402 creates a magnetic field oriented out of the paper,” and “[t]he magnetic field produced by the second inductor L_2 404 is oriented into the plane of the paper.” *Id.* at 4:46–49. The '330 patent discloses that “[i]nterference of the magnetic fields produced by the first inductor L_1 402 and the second inductor L_2 404 results in a cancellation effect at the points of interference.” *Id.* at 4:49–52. “This cancellation reduces mutual inductance between the two inductors and allows for placement of inductors in a relatively closer proximity to each other.” *Id.* at 4:52–54.

D. Illustrative Claims

Of the challenged claims, claims 1 and 11 are independent. Claims 1 and 11 are illustrative of the challenged claims and are reproduced below.

1. A multiple inductor array comprising:
 - a first node that receives a first current and a second current;
 - a first inductor coil, coupled to the first node and to a second node, that communicates the first current in a clockwise direction and generates a first magnetic field;
 - a second inductor coil, coupled to the first node and to a third node, that communicates the second current in a counter clockwise direction and generates a second magnetic field having an opposing orientation to the first magnetic field; and
 - wherein the first magnetic field and the second magnetic field at least partially cancel at an interference point.

Ex. 1001, 5:44–55.

11. A differential low noise amplifier comprising:
 - a voltage supply that generates a first current and a second current;

a first inductor coil, coupled to the voltage supply and to a first transistor, that communicates the first current in a first direction and generates a first magnetic field;

a second inductor coil, coupled to the voltage supply, a second transistor, and in parallel with the first inductor coil, that communicates the second current in a second direction that is opposite to the first direction and generates a second magnetic field having an opposing orientation to the first magnetic field;

a first RLC section that is coupled to the first inductor coil;

a second RLC section that is coupled to the second inductor coil; and

an output that is coupled to the first inductor coil, the second inductor coil, the first transistor, and the second transistor.

Id. at 6:13–31.

E. Asserted Grounds of Unpatentability

Petitioner asserts that the challenged claims of the '330 patent are unpatentable based on the following grounds:

Claim(s) Challenged	35 U.S.C. §²	Reference(s)
1, 2, 4–10	102	Marques ³
3	103	Marques
3, 11–16	103	Marques, Lee ⁴
1, 2, 4, 5, 7–10	102	Menegoli ⁵
3	103	Menegoli
3	103	Menegoli, Lee

² The Leahy-Smith America Invents Act (“AIA”) included revisions to 35 U.S.C. §§ 102 and 103 that became effective on March 16, 2013. Because the '330 patent issued from an application filed before March 16, 2013, we apply the pre-AIA version of these bases for unpatentability.

³ US 7,955,886 B2, issued June 7, 2011 (Ex. 1005, “Marques”).

⁴ THOMAS A. LEE, THE DESIGN OF CMOS RADIO-FREQUENCY INTEGRATED CIRCUITS (2d ed. 2004) (excerpts) (Ex. 1007, “Lee”).

⁵ US 7,221,251 B2, issued May 22, 2007 (Ex. 1008, “Menegoli”).

Pet. 2–3, 8–70. Petitioner submits in support of its arguments the Declaration of Dr. Sayfe Kiaei (Ex. 1002). Patent Owner submits in support of its arguments the Declaration of Dr. Joseph Bernstein (Ex. 2001).

II. LEVEL OF ORDINARY SKILL IN THE ART

To determine whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). In assessing the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962–63 (Fed. Cir. 1986)). “[O]ne or more factors may predominate.” *Id.*

Petitioner argues that one of ordinary skill in the art at the time of the invention of the ’330 patent “would have had at least the equivalent of a bachelor’s degree in electrical engineering and one to two years of experience in the field of circuit design, particularly the design of circuits operating at high frequencies.” Pet. 4 (citing Ex. 1002 ¶ 29). Patent Owner does not identify a level of skill in the art that one would have had at the time of the invention of the ’330 patent or identify any specific shortcoming in Petitioner’s definition. *See* Prelim. Resp. 7.

For purposes of this Decision on Institution, we adopt Petitioner’s definition of the level of skill for one of ordinary skill in the art. Pet. 4. This definition is consistent with the ’330 patent and the asserted prior art, and we apply it in our analysis below.

III. CLAIM CONSTRUCTION

Because the Petition was filed after November 13, 2018, we apply the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b), following the standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.100(b) (2019); 83 Fed. Reg. 51,340, 51,340–41, 51,343 (Oct. 11, 2018). In applying such standard, claim terms are generally given their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art, at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

Petitioner argues that “no express constructions of the claims are necessary to assess whether the prior art reads on the challenged claims.” Pet. 8. However, Petitioner also cites to a Special Master Report and Recommendation on Claim Construction where “node” was construed to mean “a point of connection or intersection in an electrical circuit.” *Id.* at 9 (quoting Ex. 1015, 29). Patent Owner adopts this construction for purposes of this Decision on Institution. Prelim. Resp. 8.

We find that this construction is consistent with the plain and ordinary meaning of the term “node.” We thus apply the construction as such to our analysis below, and we determine that we need not provide an express construction of any other claim term for purposes of this institution decision.

See, e.g., Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co., 868 F.3d 1013, 1017 (Fed. Cir. 2017) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’”).

IV. PRINCIPLES OF LAW

A claim is unpatentable under 35 U.S.C. § 102 “if each and every [claim] limitation is found either expressly or inherently in a single prior art reference.” *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 851 F.3d 1270, 1273 (Fed. Cir. 2017). “A claim limitation is inherent in the prior art if it is necessarily present in the prior art, not merely probably or possibly present.” *Akamai Techs., Inc. v. Cable & Wireless Internet Servs., Inc.*, 344 F.3d 1186, 1192 (Fed. Cir. 2003) (citing *Rosco, Inc. v. Mirror Lite, Co.*, 304 F.3d 1373, 1380 (Fed. Cir. 2002)).

Moreover, “[t]o anticipate, the reference must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements arranged as in the claim.” *Sanofi-Synthelabo v. Apotex, Inc.*, 550 F. 3d 1075, 1083 (Fed. Cir. 2008) (internal quotation marks omitted). In other words, it is not enough to be able to find all of the pieces of the claimed invention somewhere in a prior art reference; rather, those elements must be set out in the prior art reference in the same way they are in the claimed invention. *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (“Because the hallmark of anticipation is prior invention, the prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as

in the claim.’’)) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

A claim is unpatentable under 35 U.S.C. § 103 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 of the invention to a person having ordinary skill in the art. *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, if present.⁶ *See Graham*, 383 U.S. at 17–18. When evaluating a claim for obviousness, we also must “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)).

V. ALLEGED ANTICIPATION BY MARQUES

Petitioner argues that Marques anticipates claims 1, 2, and 4–10. Pet. 8–24. For the reasons below, we determine that Petitioner does not show that Marques anticipates any of these challenged claims.

A. *Summary of Marques*

Marques “relates generally to techniques for reducing interference in a circuit, and more particularly to techniques using magnetically differential inductors to reduce interference in a circuit.” Ex. 1005, 1:6–9. More specifically, Marques states that “[a]n inductance is formed using two or

⁶ Patent Owner does not present arguments or evidence of such objective evidence of non-obviousness. *See generally* Prelim. Resp.

more inductors coupled together and configured such that current flows through the inductors in different directions, thus at least partially canceling magnetic fields.” *Id.* at code (57). “When designing a circuit, the configuration of the inductors, as well as the relative positions of portions of the circuit, can be tweaked to provide optimal interference or noise control,” according to Marques. *Id.*

B. First Node Receives First and Second Currents

Petitioner argues that Marques discloses “a first node that receives a first current and a second current,” as recited in claim 1. Pet. 9–11. More specifically, Petitioner argues that “Marques discloses a series connection between inductors 10E and 10F,” as illustrated in Figure 5. *Id.* at 9 (citing Ex. 1005, 5:11–12, Fig. 5). Figure 5, as annotated by Petitioner, is shown below.

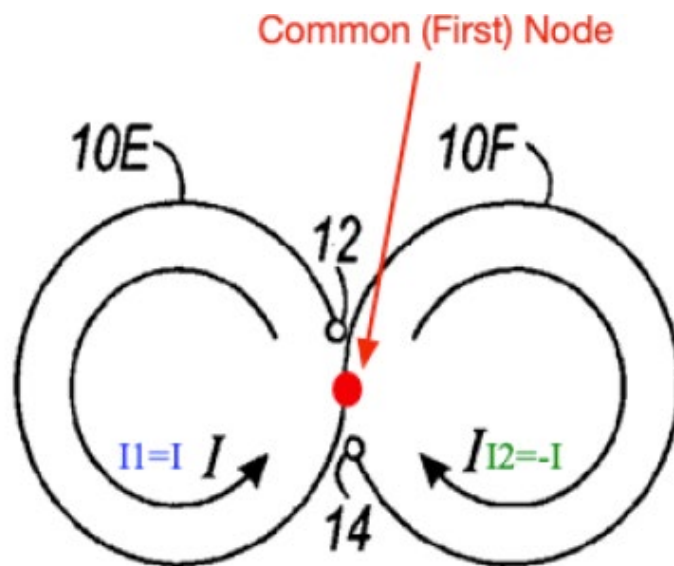


FIG. 5

Figure 5 “shows an[] example of series coupled magnetically differential inductors.” Ex. 1005, 2:11–12. As illustrated, “first and second inductors

10[E] and 10[F are] coupled in series between terminals 12 and 14.” *Id.* at 5:12–14. Petitioner annotates the figure by adding a label (i) for inductor 10E, which states “I1=I” in blue and (ii) for inductor 10F, which states “I2=I” in green. Pet. 10. Petitioner also adds a red dot at a point between inductors 10E and 10F, and labels the dot “Common (First) Node.” *Id.*

We agree with Petitioner that Marques discloses that inductors 10E and 10F are connected in series. Ex. 1005, 5:11–12, Fig. 5. We also agree that a node exists between these series connected inductors. *Id.* In other words, a point of connection or intersection exists between the inductors, such as annotated by Petitioner as a red dot in Figure 5. *Id.* Petitioner identifies this node as the claimed “first node.”⁷ Pet. 9–10. To this point, we agree with Petitioner.

Next, Petitioner argues that this node between the series connected inductors can “be viewed as the intersection of where I1 and I2 meet (i.e., the first node receives a first and second current).” Pet. 10 (citing Ex. 1002 ¶ 58). We disagree.

Rather, we agree with Patent Owner that Marques discloses that only a single current flows through the series connected inductors 10E and 10F from terminal 12 to 14. Ex. 1005, 5:11–12, Fig. 5; Ex. 2001 ¶ 70; Prelim. Resp. 16. Marques’s Figure 3, shown below, is helpful in illustrating this finding.

⁷ Petitioner also refers to this node between the series connected inductors as a “common” node. Pet. 9–10; Ex. 1002 ¶¶ 57–58. We find that such a description of the node is duplicative in this context of having series connected inductors.

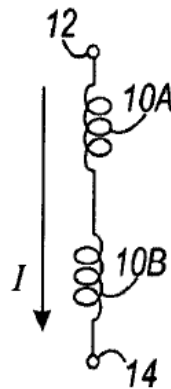


FIG. 3

Figure 3 is an equivalent circuit diagram of two magnetically differential inductors coupled in series. Ex. 1005, 2:3–6; *see also id.* at 5:15–17 (“An equivalent circuit diagram of the example shown in FIG. 5 would be similar to the diagram shown in FIG. 3.”). Figure 3 clearly illustrates that only a single current (i.e., I) flows through both inductors, as well as the node between them (i.e., the identified first node). Hence, Marques does not disclose “a first node that receives a first current *and a second current*.”

Moreover, this finding is supported by claim 1’s requirement of “a second inductor coil, coupled to the first node and to a third node, that communicates the second current in a counter clockwise direction and generates a second magnetic field.” Ex. 1001, 5:48–52. In other words, the claimed second current (which is “receive[d]” at the first node) is communicated through the second inductor coil to the third node. *Id.*

In Marques’s series connected inductors, however, the current I received at the first node (i.e., between the inductors) flows to terminal 14 (which Petitioner identifies as the second node), not terminal 12 (which Petitioner identifies as the third node). Ex. 1005, 5:11–14, Figs. 3, 5; Pet.

12, 14. Hence, the current (I) received at the first node (i.e., between the series connected inductors) cannot comprise the claimed second current because it is not communicated through the second inductor coil 10E to terminal 12 (i.e., the identified third node). Ex. 1005, 5:11–14, Figs. 3, 5.

In addition, we find unavailing Petitioner’s arguments concerning Marques’s embodiment that instead connects the inductors in parallel. *See* Pet. 10–11 (citing Ex. 1005, 5:49–53, Figs. 7–8; Ex. 1002 ¶¶ 59–60). Petitioner does not explain how Marques’s different embodiments disclose the limitations arranged as in the claim, which is required for anticipation. *Id.*; *Sanofi-Synthelabo*, 550 F. 3d at 1083. Nor does Petitioner address whether Marques’s parallel connection embodiment discloses any other limitations of claim 1. *See* Pet. 8–17. For example, Petitioner does not identify what constitutes the second and third nodes for the parallel connection embodiment. Hence, Petitioner’s arguments concerning Marques’s parallel connected embodiment are inapposite.

In sum, we find that Petitioner does not show that Marques discloses “a first node that receives a first current and a second current.”

C. Summary

Petitioner does not show a reasonable likelihood of success in challenging independent claim 1. In addition, claims 2 and 4–10 depend from claim 1, and Petitioner’s arguments for these dependent claims do not cure the above deficiencies. Pet. 17–24. Thus, Petitioner also does not show a reasonable likelihood of success in challenging these dependent claims.

VI. ALLEGED OBVIOUSNESS OVER MARQUES

Petitioner argues that Marques renders claim 3 obvious. Pet. 29–32. Claim 3 depends from claim 1, and Petitioner’s arguments for claim 3 for

this ground do not cure the above deficiencies. *Id.* Nor does Petitioner address how Marques’s series connected and parallel connected embodiments would have been combined to render claim 3 obvious, or provide a motivation to do so. Thus, Petitioner does not show a reasonable likelihood of success in challenging claim 3 as being rendered obvious by Marques.

VII. ALLEGED OBVIOUSNESS OVER MARQUES AND LEE

Petitioner argues that the combination of Marques and Lee renders claims 3 and 11–16 obvious. Pet. 33–50. For the reasons below, we determine that Petitioner does not show that these challenged claims are unpatentable.

A. *Summary of Lee*

Lee is a text book titled “The Design of CMOS Radio-Frequency Integrated Circuits.” Ex. 1007, 1. In relevant part, Lee discloses a design for a low noise amplifier. *Id.* at 388.

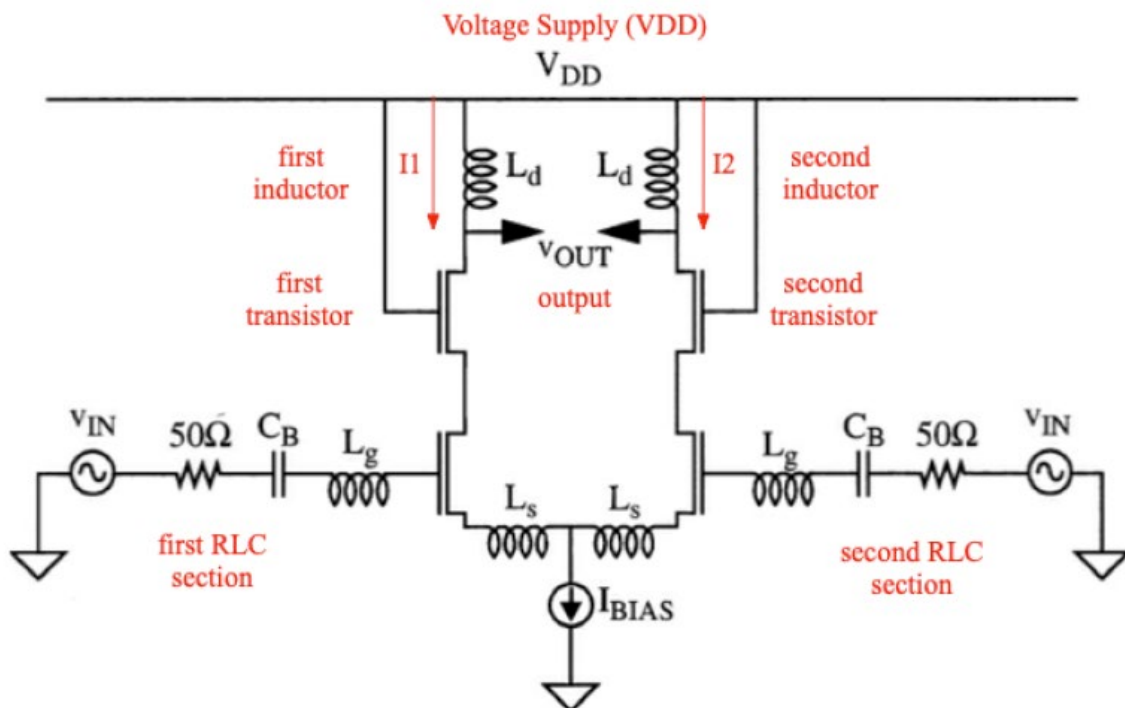
B. *Challenged Claims 3 and 16*

Petitioner argues that the combination of Marques and Lee renders claims 3 and 16 obvious. Pet. 33–38, 50. Claims 3 and 16 depend from claim 1, and Petitioner’s arguments for these claims for this ground do not cure the above deficiencies for independent claim 1. *Id.* Nor does Petitioner address how Marques’s series connected and parallel connected embodiments would have been combined to render these claims obvious, or provide a motivation to do so. Thus, Petitioner does not show a reasonable likelihood of success in challenging claims 3 and 16 as being rendered obvious by Marques and Lee.

C. Challenged Claims 11–15

Independent claim 11 is directed to “[a] differential low noise amplifier.” Ex. 1001, 6:13. Claims 12–15 depend therefrom. The parties dispute whether one of ordinary skill in the art would have combined Marques and Lee, as Petitioner does to render claims 11–15 obvious. For the reasons that follow, we agree with Patent Owner that Petitioner does not show that one of ordinary skill in the art would have made the combination.

Petitioner argues that “[w]hile Marques discusses the use of inductors in various circuitry, Marques does not explicitly disclose using its inductor structure in a differential low noise amplifier.” Pet. 39 (citing Ex. 1005, 1:20–32). “However, Lee discloses . . . a differential low noise amplifier (DLNA) schematic,” according to Petitioner. *Id.* (citing Ex. 1007, 388 (showing Fig. 12.10)). Lee’s Figure 12.10, as annotated by Petitioner, is shown below.



Lee's Figure 12.10 illustrates a simplified design of a DLNA. Ex. 1007, 388. In relevant part, Petitioner annotates the figure by labeling in red (i) the left inductor L_d as "first inductor" and (ii) the right inductor L_d as "second inductor." Pet. 39. Petitioner also adds in red the label "I1" for the left inductor L_d and "I2" for the right inductor L_d . *Id.* Petitioner draws a downward arrow from the voltage supply (V_{DD}) for each of these currents flowing through the L_d s. *Id.*

Petitioner argues that "[t]he technical problem addressed by Marques is interference between components in an" integrated circuit, and that "[t]his technical problem is specifically mentioned in Lee as an issue regarding high frequency amplifiers (i.e., 'ever-present' parasitic inductance)." Pet. 34 (citing Ex. 1005, 1:29–33; Ex. 1007, 270). According to Petitioner, one of ordinary skill in the art "would have been motivated to combine the inductor structure of Marques into the DLNA disclosed by Lee in order to reduce parasitic interference between inductors (i.e., a known issue)." *Id.* at 35 (citing Ex. 1002 ¶ 95); *see also id.* at 40 (making same arguments). In other words, one of ordinary skill in the art would have been motivated to have L_d s with opposite orientation in Lee's DLNA, according to Petitioner. Pet. 41–44.

We disagree. Rather, we agree with Patent Owner that Lee teaches away from making such a combination. Prelim. Resp. 28–29. In particular, Lee teaches that "[a]nother important attribute of the differential connection is, of course, its ability to reject common-mode disturbances," and "[t]o ensure the truth of this statement, *the spiral inductors of both half-circuits should be laid out with the same orientation, not mirrored*; otherwise, inductively coupled noise will not appear as a common-mode signal."

Ex. 1007, 388 & n.21 (emphasis added). Lee adds that “[t]o maximize common-mode rejection at high frequencies, *it is critically important for the layout to be absolutely as symmetrical as possible.*” *Id.* at 388 (emphasis added). We find that Lee criticizes, discredits, and otherwise discourages, and thus teaches away from, combining Marques and Lee in the manner Petitioner does. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (teaching away requires that a reference “criticize, discredit, or otherwise discourage” investigation into the claimed solution); Pet. 41–44.

We also find unavailing Petitioner’s arguments concerning the ’330 patent teaching that inductors with opposite orientation may be used in DLNA designs for magnetic field cancellation. Pet. 34, 40. Such arguments rely impermissibly on the ’330 patent itself as a roadmap. *See Grain Processing Corp. v. Am.-Maize Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988) (quoting *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1012 (Fed. Cir. 1983) (“Care must be taken to avoid hindsight reconstruction by using ‘the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.’”)).

In sum, we find that Petitioner does not show that one of ordinary skill in the art would have combined Marques and Lee in the manner Petitioner does to render claims 11–15 obvious. Thus, Petitioner does not show a reasonable likelihood of success in challenging claim 11–15 as being rendered obvious by Marques and Lee.

VIII. GROUNDS ASSERTING MENEGOLI

Petitioner argues that Menegoli (i) anticipates claims 1, 2, 4, 5, and 7–10; (ii) renders claim 3 obvious; and (iii) renders claim 3 obvious in

combination with Lee. Pet. 51–70. For the reasons below, we determine that Petitioner does not show that these challenged claims are unpatentable for these grounds.

A. Summary of Menegoli

Menegoli “relates to the manufacture of magnetic structures and electric reactive components, and more specifically to an inductor formed on a printed circuit board.” Ex. 1008, 1:9–11. Menegoli “further relates to passive components structures embedded on a printed circuit board for use in power conversion circuits and techniques.” *Id.* at 1:18–21.

B. First Node Receives First and Second Currents

Petitioner argues that Menegoli discloses “a first node that receives a first current and a second current,” as recited in claim 1. Pet. 52–53. More specifically, Petitioner argues that Menegoli discloses “a common node between series coupled inductors La and Lb where current (I1) is flowing clockwise in inductor La, and current (I2) is flowing counterclockwise in inductor Lb,” as illustrated in Figure 2A. *Id.* at 52. (citing Ex. 1008, 8:16–24, Fig. 2A; Ex. 1002 ¶ 123). Figure 2A, as annotated by Petitioner, is shown below.

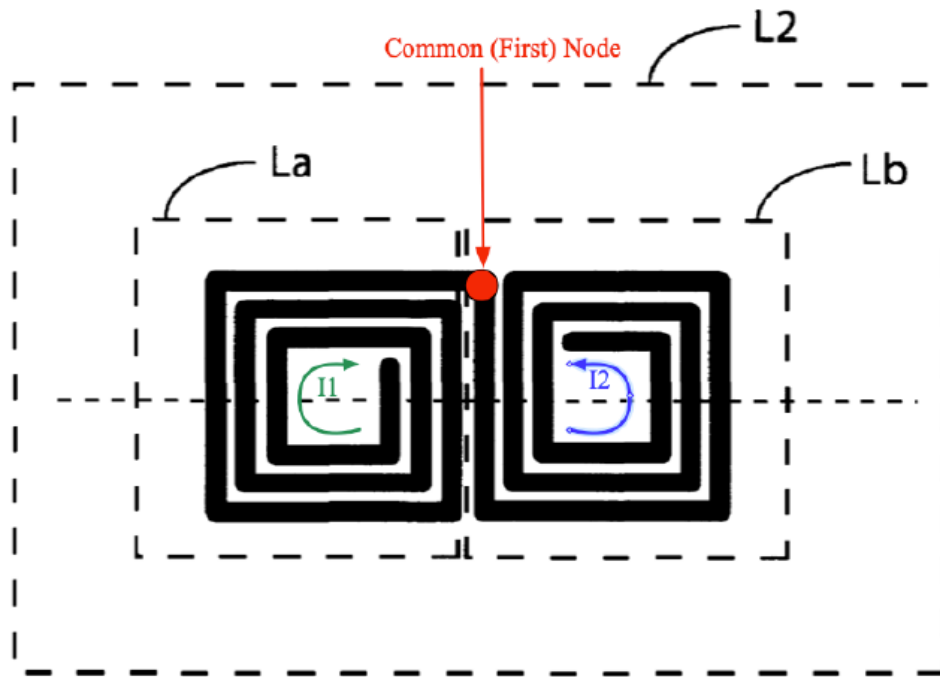


FIG.2A

Figure 2A “is a plan view of an inductor formed by two square spiral conductors in anti-phase” in accordance with Menegoli’s disclosures. Ex. 1008, 7:54–56. Petitioner annotates the figure by (i) adding a label for inductor La, which states “I1,” and drawing a curved clockwise arrow in green; (ii) adding a label for inductor Lb, which states “I2,” and drawing a curved counter clockwise arrow in blue; and (iii) adding a red dot at a point between inductors La and Lb, and labeling the dot “Common (First) Node.” Pet. 53. Petitioner argues that “the (common) first node between inductors La and Lb can be viewed as the point where I1 and I2 meet (i.e., the first node receives a first and second current).” *Id.* at 52 (citing Ex. 1002 ¶ 123).

For the same reasons we discuss above, we disagree with Petitioner. Rather, we agree with Patent Owner that Menegoli discloses only a single current that flows through the series connected inductors La and Lb. Ex. 1008, Fig. 2A; Ex. 2001 ¶ 96; Prelim. Resp. 40. Hence, Menegoli does

not disclose “a first node that receives a first current *and a second current.*” Ex. 1008, Fig. 2A; Ex. 2001 ¶ 96; *see also supra* Section V.B (providing detailed reasoning why series connected inductors with a first node therebetween do not disclose this same limitation).

In sum, we find that Petitioner does not show that Menegoli discloses “a first node that receives a first current and a second current.”

C. Summary

Petitioner does not show a reasonable likelihood of success in challenging independent claim 1. In addition, claims 2, 4, 5, and 7–10 depend from claim 1, and Petitioner’s arguments for these dependent claims do not cure the above deficiencies. Pet. 58–64. Thus, Petitioner also does not show a reasonable likelihood of success that claims 2, 4, 5, and 7–10 are anticipated by Menegoli.

In addition, claim 3 depends from claim 1, and Petitioner’s arguments for the obviousness grounds which include Menegoli do not cure the above deficiencies. Pet. 64–70. Thus, Petitioner does not show a reasonable likelihood of success in challenging claim 3 as being rendered obvious.

IX. CONCLUSION

For the foregoing reasons, we determine that the information presented in the Petition does not demonstrate a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of any of the challenged claims of the ’330 patent on any of the asserted grounds.

X. ORDER

In consideration of the foregoing, it is hereby:
ORDERED that the Petition is denied and no trial is instituted.

IPR2024-00142
Patent 7,535,330 B2

FOR PETITIONER:

Patricia Healy
Bruce Garlick
Timothy Markison
Timothy Taylor
GARLICK & MARKISON
GM-NXP-Bell-IPR@texaspatents.com

PATENT OWNER:

Jason M. Shapiro
Timothy Devlin
Andrew Sherman
DEVLIN LAW FIRM LLC
jshapiro@devlinlawfirm.com
tdevlin@devlinlawfirm.com
asherman@devlinlawfirm.com