

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SQUARE, INC.,
Petitioner,

v.

REM HOLDINGS 3, LLC,
Patent Owner.

Case IPR2014-00312
Patent 8,584,946 B2

Before DENISE M. POTHIER, JENNIFER S. BISK, and
PATRICK R. SCANLON, *Administrative Patent Judges*.

POTHIER, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Square, Inc. (“Petitioner”) filed a corrected Petition (Paper 6, “Pet.”) on January 23, 2014 requesting institution of an *inter partes* review of claims 1–17 of U.S. Patent No. 8,584,946 B2 (“the ’946 patent”) pursuant to 35 U.S.C. §§ 311–19. REM Holdings 3, LLC (“Patent Owner”) filed a Preliminary Response on April 16, 2014. Paper 10, “Prelim. Resp.” Based on the submissions, we instituted *inter partes* review of claims 1–17 as unpatentable under 35 U.S.C. § 103. Paper 12, “Dec. on Inst.”

After institution, Patent Owner filed a Response¹ (Paper 32, “PO Resp.”), and Petitioner filed a Reply (Paper 43, “Pet. Reply”). Patent Owner also filed several motions. Among them, Patent Owner filed a motion to exclude certain exhibits or parts of exhibits from the record. Paper 53, “Mot. to Exclude.” Petitioner opposed Patent Owner’s motion. Paper 54. Patent Owner filed a Reply in further support of its motion to exclude. Paper 55.

An oral hearing for this proceeding was held on March 12, 2015, and a transcript of the hearing is included in the record. Paper 57, “Tr.”

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

As discussed below, Petitioner has shown by a preponderance of the evidence that claims 1, 2, 6, 7, and 10–17 are unpatentable. Petitioner has failed to meet its burden of proof regarding the unpatentability of claims 3–5, 8, and 9.

¹ Throughout this decision, we refer to the public version of Patent Owner’s response.

Patent Owner's Motion to Exclude is granted-in-part, denied-in-part, and dismissed-in-part.

A. The '946 Patent (Ex. 1001)

The '946 patent, titled "Card Reader Device for a Cell Phone and Method of Use," relates to a card reader device for use with a cellular phone. The reader reads data stored on a card, such as a credit card. Ex. 1001, 1:15–26. Figure 2 of the '946 patent is shown below:

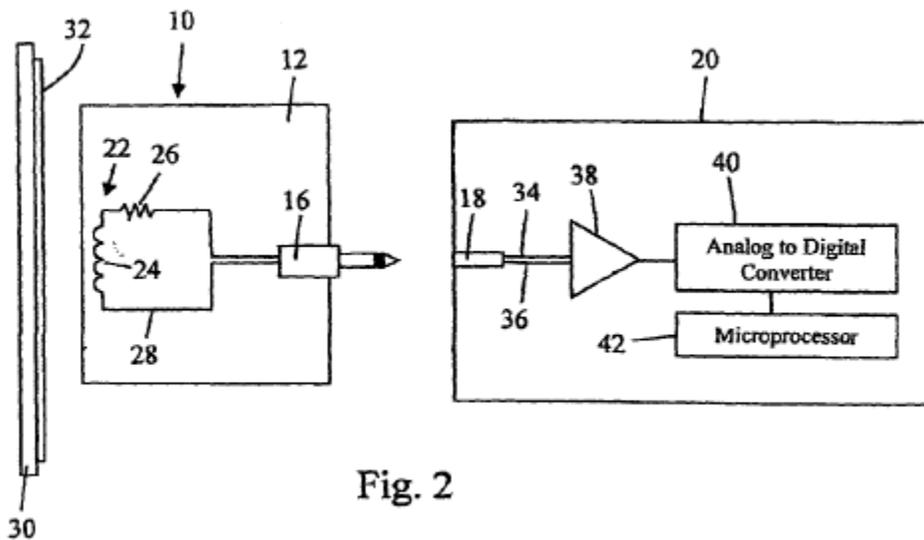


Fig. 2

Figure 2 shows card reader device 10, including read head 22 having coil 24, resistor 26, and output jack 16. Ex. 1001, 4:15, 32–36; Fig. 2. Card 30 stores data on magnetic stripe 32. Ex. 1001, 4:37–39; Fig. 2. As magnetic stripe 32 passes by read head 22, read head 22 reads data stored in magnetic stripe 32 and induces a voltage in coil 24, which produces a voltage signal or analog waveform. Ex. 1001, 4:43–46, 50–54, 5:7–11; Fig. 2. Resistor 26 sets the amplitude of the voltage signal or waveform, which is sent through jack 16, into microphone input socket 18 of cell phone 20. Ex. 1001, 4:52–55, 5:11–12; Fig. 2.

B. Illustrative Claim

The '946 patent has 17 claims. Claims 1, 7, 10, and 12 are independent. Claim 1 is an apparatus claim; claims 7, 10, and 12 are method claims. Claim 1 is reproduced below.

1. A card reader device, comprising:
 - a read head configured to produce an analog signal indicative of data stored on a magnetic stripe of a card in response to the magnetic stripe being passed by the read head;
 - one or more resistors configured to attenuate the analog signal resulting in an attenuated analog signal indicative of said data stored on the magnetic stripe; and
 - an output plug, adapted to be inserted into a jack associated with a microphone input associated with a cell phone, configured to provide the attenuated analog signal indicative of said data stored on the magnetic stripe to the cell phone via the microphone input.

Ex. 1001, 6:58–7:3.

C. Prior Art

The pending grounds of unpatentability in this *inter partes* review are based on the following prior art:

1. Sébastien Bourdeauducq, *Reading Magnetic Cards (Almost) for Free* 1–2 (January 26, 2009), available at <http://lekernel.net/blog/2009/01/reading-magnetic-cards-almost-for-free> (“Lekernel”) (Ex. 1009);
2. Luis Padilla Visdómine, *Turning Your Mobile Into a Magnetic Stripe Reader* 1–4 (2007), available at <http://classic-web.archive.org/web/20041027001715/http://www.gae.ucm.es/~padilla/extrawork/mobilesoundtrack.html> (“Padilla”) (Ex. 1010);
3. US 2004/0041911 A1, published Mar. 4, 2004 (“Odagiri”) (Ex. 1014);

4. US 2010/0243732 A1, published Sept. 30, 2010 and claiming priority to Provisional App. No. 61/163,296, filed Mar. 25, 2009 (“Wallner”) (Ex. 1011);

5. US 8,281,998 B2, issued Oct. 9, 2012 (“Tang”) (Ex. 1006); and

6. JP 3008764B, published Dec. 28, 1994 (“BPS”) (Ex. 1008) (a computer-translated English version begins on page 8 of the exhibit).

D. Pending Grounds of Unpatentability

We instituted the instant *inter partes* review on the following grounds of unpatentability.

References	Basis	Claims Challenged
Lekernel and Padilla	§ 103	1, 2, 6, 7, 15, and 16
Lekernel, Padilla, and Odagiri	§ 103	4 and 9
Lekernel, Padilla, and Wallner	§ 103	5, 10–14, and 17
Tang and BPS	§ 103	1–3, 5–8, and 10–17
Tang, BPS, and Odagiri	§ 103	4 and 9

Dec. on Inst. 10–26.

We did not institute *inter partes* review for claims 3 and 8 based on Lekernel and Padilla. Dec. on Inst. 19.

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, “[a] claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears.” 37 C.F.R. § 42.100(b); *see also In re Cuozzo Speed Tech., LLC*, 778 F.3d 1271, 1279–83 (Fed. Cir. 2015) (“Congress

implicitly adopted the broadest reasonable interpretation standard in enacting the AIA,” and “the standard was properly adopted by PTO regulation”). There is a “heavy presumption” that a claim term carries its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); *see also In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). A patentee may rebut this presumption, however, by acting as his own lexicographer, providing a definition of the term in the specification with “reasonable clarity, deliberateness, and precision.” *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). In the absence of such a definition, limitations are not to be read from the specification into the claims. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

In the Decision on Institution, we interpreted various claim terms of the ’946 patent as follows:

Term	Interpretation
“output plug”	Includes those plugs discussed in the Specification (citing Ex. 1001, 4:18–22).
“a 3.5 mm plug” and “a 2.5 mm plug”	Further limiting the recitation “output plug” by reciting a given dimension
“housing”	“something that protects, such as a support.”

Dec. on Inst. 7–8. Neither Petitioner nor Patent Owner disputes our claim construction of these terms. *See generally* PO Resp. and Pet. Reply. We maintain these constructions in this decision, based on our analysis of the record developed at trial.

Patent Owner asserts that our claim construction needs to be supplemented to recognize the structure of the claim elements, e.g., analog signals, are the same based on antecedent principles, but later states the claims recite the structure of different signals. *Compare* PO Resp. 9, subheading C (stating the need to recognize the structure of the claims is the same) *with* PO Resp. 11 (stating the claims recite structure of different signals). We decline to construe the claims as requested.

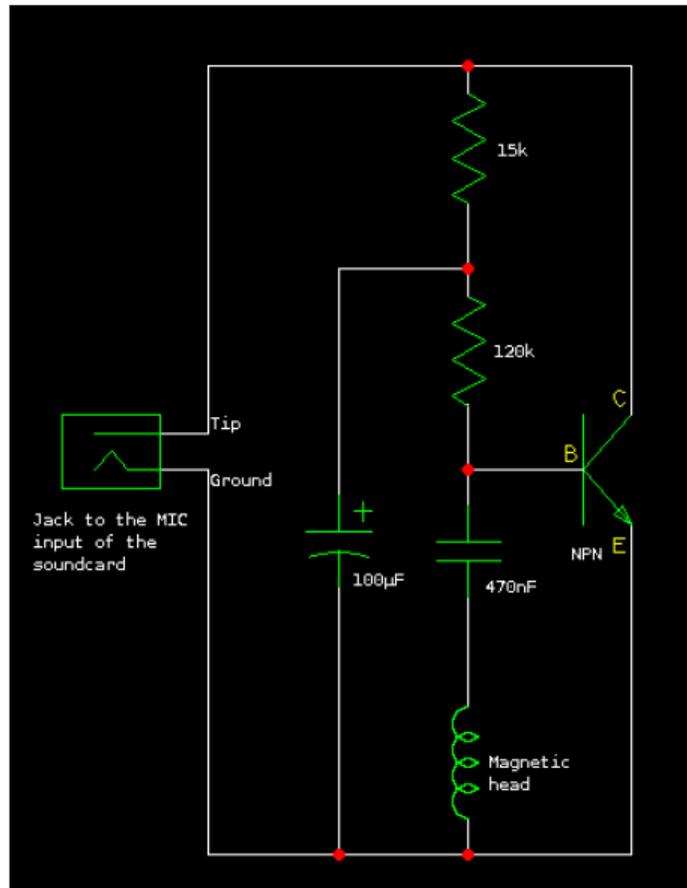
First, we disagree that the purported “structure” or “structures” discussed by Patent Owner include “*signals* produced by the read head and/or received and/or provided by the recited elements (e.g., read head, one or more resistors, output plug).” PO Resp. 11 (emphasis added). That is, the analog signal configured to be produced by the read head, the analog signal configured to be attenuated by the one or more resistors, and the attenuated analog signal configured to be provided to the cell phone are not structures of the claims. Second, at least some of the signals recited are not “different signals.” PO Resp. 11. For example, in claim 1, the at least one or more resistors are configured to attenuate the analog signal, and the output plug is configured to provide the same attenuated analog signal to the cell phone’s microphone input (i.e., “an output plug . . . configured to provide *the attenuated analog signal* . . . to the cell phone . . .”) (emphasis added). As such and contrary to Patent Owner’s statements, the claims do “refer to a single[, same] signal . . . modified, and then provided to the cell phone.” PO Resp. 10–11.

B. Claims 1, 2, 6, 7, 15, and 16 are Unpatentable over Lekernel and Padilla under 35 U.S.C. § 103

With respect to the obviousness ground of claims 1, 2, 6, 7, 15, and 16 over Lekernel and Padilla, we have reviewed Square’s Petition, REM Holdings 3’s Response, and Square’s Reply, as well as the evidence discussed in each of those papers. We are persuaded, by a preponderance of the evidence, that claims 1, 2, 6, 7, 15, and 16 are unpatentable over Lekernel and Padilla. *See* Pet. 16–27.

1. Lekernel (Ex. 1009)

Lekernel describes a soundcard-based magnetic card reader that reads and decodes magnetic cards using a cassette player’s magnetic head. Ex. 1009, second heading (“Soundcard-based magnetic card reader”) and ¶¶ 3–4. Lekernel’s second figure (“Figure 2”) shown below enlarged, includes a circuit of the magnetic card reader.



Enlarged Figure 2 includes a magnetic head or coil, 120 k Ω and 15 k Ω resistors, 470 nF and 100 μ F capacitors, NPN transistor, and a jack to the microphone input of the soundcard. *Id.* ¶¶ 3–6 and Fig. 2. Lekernel states “a few other parts” amplify the signal from the head, because “the head did not give enough power to directly drive the input of the soundcard.” *Id.* ¶ 4. Mr. Bourdeauducq, the author of Lekernel and whose testimony we find credible, explains “[e]ach and every one of the components shown in the circuit diagram in my article, except the magnetic read head and the jack, combine to form an amplifier[.]” Ex. 2033 ¶ 16 (referring to “the circuit diagram” in Figure 2).

Lekernel discusses using “‘phantom power’ from the soundcard” and explains that “the microphone input provides a direct voltage of about 2.5 V with an internal resistance of 1k.” Ex. 1009 ¶ 6. Lekernel also states the 15kΩ resistor and the 100 μF capacitor “filter out the alternative component of the signal, to provide a stable polarization voltage to the transistor.” *Id.* Lekernel even further states “[t]he transistor is polarized through the 120k resistor – you may want to fit this value to your particular transistor in order to get a reasonable voltage drop on the microphone input (about -1V) when the circuit is connected.” *Id.*

2. *Padilla (Ex. 1010)*

Padilla, titled “Turning Your Mobile Into a Magnetic Stripe Reader,” describes a mobile phone as a magnetic stripe card reader by using the phone’s external microphone input, such as a hands free kit input. Ex. 1010 §§ “Requisites” and “Improvements.” Padilla teaches that successful results were achieved using a Siemens MC60 mobile phone, but that “there are a lot of chances that it can be repeated with other mobiles of similar features.” Ex. 1010 § “Foreword.”

3. *Analysis*

Petitioner states that Lekernel teaches a read head (i.e., magnetic head or coil) configured to produce an analog signal indicative of data stored on a magnetic stripe of a card in response to the magnetic stripe being passed by the read head as recited in claim 1. Pet. 16–17, 22 (citing Ex. 1009 ¶ 3; Fig. 2²); Dec. on Inst. 11–12. Additionally, Petitioner asserts that Lekernel teaches an output plug (e.g., the jack to microphone shown in Fig. 2 and the

² As stated in the Institution of *Inter Partes* Review, we presume Petitioner intended to refer to Figure 2. Dec. on Inst. 11 n.10.

standard output plug shown in Fig. 3) adapted to be inserted into a jack associated with a microphone input as well as providing an analog signal indicative of the data stored on the magnetic stripe to the microphone input as recited in claim. Pet. 20–24 (citing Ex. 1009, Figs. 2–3); Dec. on Inst. 14–15.

Other than a general assertion that all the limitations of the challenged claims must be shown, Patent Owner focuses on the limitation related to providing an attenuated signal to the cell phone found in independent claims 1 and 7.³ PO Resp. 24–30. Accordingly, the above findings concerning specific limitations in claims 1 and 7 remain undisputed in the record. Based on the evidence supporting these undisputed findings, we are persuaded that Lekernel teaches the recited “read head” and “an output plug adapted to be inserted into a jack associated with a microphone input” in claims 1 and 7 by a preponderance of the evidence.

Concerning the disputed limitation, “the output plug . . . configured to provide the attenuated signal . . . to the cell phone” in claim 1 and similarly recited in claim 7 (Ex. 1001, 6:66–7:3, 24–27), Patent Owner asserts that Lekernel fails to teach this feature and Padilla does not cure this alleged deficiency. PO Resp. 26–30. Patent Owner relies on declarations from Dr. Morley, Mr. Wood, and Mr. Bourdeauducq (hereafter the Morley, Wood, and Bourdeauducq declarations, respectively) to support this position. *Id.* (citing Exs. 2031–33). Petitioner relies on the declaration of Dr. McLaughlin (hereafter the McLaughlin declaration) to support its position

³ Patent Owner recognizes and states that the quoted recitation “provide the attenuated read head signal to the cell phone” discussed in the response is “short-hand” and that “there are slight differences in wording” in the claims. PO Resp. 2 n. 1.

that Lekernel and Padilla render certain claims obvious and to teach known principles in the art. Pet. 10, 16–27 (citing Ex. 1015).

Before we address the cited references and what is commonly known in the art, we turn to a preliminary issue. Patent Owner argues Petitioner did not define correctly one of ordinary skill in the art and provides no qualifications for such a person. PO Resp. 11, 13–15. Patent Owner contends that the qualifications of an ordinarily skilled artisan would have been a person having a Bachelor’s degree in electrical engineering, at least two years of experience in designing magstripe card readers, an understanding of the basic principles regarding magstripe cards and processing credit and debit card transactions using a magstripe, and some basic knowledge of how to input data into a cell phone. PO Resp. 14–15 (citing Ex. 2031 ¶ 21). Patent Owner further argues that Dr. McLaughlin is “unqualified to offer any opinions regarding the ‘946 Patent or the prior art references, such that the Board should give little or no weight to his testimony.” PO Resp. 11, 15–23. We are not persuaded.

We agree that the McLaughlin declaration does not outline specific qualifications of one skilled in the art. Ex. 1015 ¶ 9. However, Dr. McLaughlin states, and we agree, that “the level of ordinary skill in the art is evidenced by the prior art references.” *Id.* and Pet. Reply 3 (citing *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995)). We also agree with Petitioner that Patent Owner has unduly narrowed the qualifications of one of ordinary skill. *See* Pet. Reply 1. In particular, and in contrast with the above assertions, Patent Owner describes Mr. Bourdeauducq as an expert in the relevant field. PO Resp. 1 (stating “Sebastien Bourdeauducq (*See* Exhibit 2033), (and an actual expert in the Relevant Field)”). Yet, Mr.

Bourdeauducq lacks several of the purported qualifications of an ordinarily skilled artisan that Patent Owner asserts. Pet. Reply 2. For example, Mr. Bourdeauducq was about eighteen years old when he wrote the Lekernel article, had no engineering degree, had about one week of experience with magnetic stripe card readers, and had a general consumer understanding of credit card processing. *Id.* (citing Ex. 1064, 12:14–15:20).

Based on the record, we determine that the level of skill in the art is more aligned with a high school or first-year engineering student taking a class covering the topic of basic circuit analysis and having a general, consumer knowledge of magnetic card readers.⁴ Mr. Bourdeauducq, Dr. McLaughlin, Dr. Morley, and Mr. Wood all have these qualifications. Ex. 2033 ¶ 3 (referring to Exhibit A) and Ex. 1064, 15:16–20; Ex. 1015 ¶ 2 and Ex. 2035, 88:15–18; Ex. 2031 ¶¶ 6, 9; Ex. 2032 ¶¶ 7–8. As such, contrary to Patent Owner’s assertions, we disagree that the McLaughlin declaration should be given no weight. PO Resp. 11. Also, regardless of whether Dr. McLaughlin has immediate knowledge of certain details about magnetic card readers (e.g., card reader manufacturers, frequency characteristics of a read head signal when a card is swiped), we disagree that he is not qualified as an ordinarily skilled artisan. *See* PO Resp. 16, 19 (quoting portions from Ex. 2035); *see* Pet. Reply 1–2.

⁴ Petitioner further argues that Dr. Morley states that Lekernel circuit is “within the skill of ‘high school physics student (Ex. 2031 ¶ 77) and ‘first year engineering students.’ *Id.*, at ¶ 94.” Pet. Reply 2. Upon review, Dr. Morley admits certain facts are known to high school physics students (e.g., capacitors are open circuits for the purpose of DC analysis) and freshmen electrical engineering students (e.g., capacitors pass high frequency signals, such as high frequency noise). Ex. 2031 ¶¶ 77, 94. Notably, we refer to the public version of the Morley declaration in this decision.

We lastly note that the field of endeavor can differ from the problem that the inventor of the '946 patent was concerned with solving. *See* PO Resp. 8; *see also In re Kahn*, 441 F.3d 977, 986–87 (Fed. Cir. 2006). As such, we see no error in defining the field of endeavor more broadly than the problem that is being addressed in the '946 patent and to include “basic . . . signal processing and conditioning” of devices, such as a card reader, as discussed by Dr. McLaughlin. Ex. 1015 ¶ 7.

Given our understanding of the background of an ordinarily skilled artisan, we further determine that one skilled in the art, including Dr. McLaughlin and Mr. Bourdeauducq, would have had a common understanding of various circuit design and analysis principles taught in a high school physics or a first-year electrical engineering class. These concepts include knowledge of: (1) Ohm’s Law⁵; (2) using resistors to vary voltage, such as by using a resistive voltage divider to drop voltage; and (3) signal conditioning, including the concept of impedance matching. *See* Pet. 10, 14, 17–18; Pet. Reply 1, 4; Ex. 1009 ¶ 6; Ex. 1015 ¶¶ 9, 15, 28, 30. On the record, Patent Owner does not dispute that these concepts would have been known to an ordinarily skilled artisan. Rather, Patent Owner focuses on “the relevant field,” the Lkernel’s amplifier circuit, and that Dr. McLaughlin is not a qualified to offer any opinion on the prior art. *See* PO Resp. 5, 7–8, 15–30. As a consequence, the record supports that the above principles would have been known to and recognized by those of ordinary skill in the art.

To elaborate, the principle of using resistors to drop voltage is

⁵ Ohm’s law states: $V=iR$, where V = voltage, i =current and R =resistance. Ex. 1015 ¶ 15.

acknowledged by Petitioner and Patent Owner alike. *See* Ex. 1009 ¶ 6 (stating the 120 kΩ resistor is selected “in order to get a reasonable voltage drop on the microphone input (about -1V)”); *see also* Pet. 14 (discussing applying Ohm’s law) (citing Ex. 1015 ¶ 15); *see* Tr. 41 (Patent Owner stating “*Is it affecting a voltage and bringing it down? Yes, by selection of resistors you are bringing down a bias or setting it higher or lower*”) (emphasis added). Accordingly, although the resistance components in Lekernel’s Figure 2 are part of an amplifier (*see* Ex. 2033 ¶ 16), Lekernel specifically discloses that an internal component of the amplifier (e.g., the 120kΩ resistor) assists in dropping voltage. Ex. 1009 ¶ 6; *see also* Ex. 1015 ¶ 27 (acknowledging that Lekernel’s Figure 2 employs both attenuation and amplification concepts). As another example, the principle that dropping voltage attenuates at least the voltage signal is also demonstrated to be known. *See* Pet. 18 and Ex. 1015 ¶ 26 (cited at Dec. on Inst. 12 and indicating that the 120kΩ resistor provides attenuation at the base terminal of the transistor); *see also* Pet. Reply 4 (quoting Mr. Bourdeauducq acknowledging a resistor divider attenuates a signal).

Patent Owner also states the “‘voltage drop’ referred to in Lekernel concerns the 2.5-volt microphone input voltage reduction to bias the transistor of the Lekernel circuit. (*Id.*, ¶ 215 *et seq.*)” PO Resp. 28 (citing Ex. 2031). We do not disagree that Lekernel teaches reducing the voltage from the microphone to the transistor to bias the transistor. Ex. 1009 ¶ 6. However, we find that Lekernel specifically states and Patent Owner admits that the 120kΩ resistor is used to achieve a “reasonable voltage drop on the microphone input.” Ex. 1009 ¶ 6; PO Resp. 28 (stating that there is a “microphone input voltage reduction” and citing Ex. 2031 ¶ 215 (quoting

Ex. 1009 ¶ 6)). As such, resistance components are known to ordinary artisans to be used to obtain a desired voltage drop. Thus, even though the overall circuit in Lekernel's Figure 2 amplifies the read head signal, Lekernel teaches a known principle of dropping a voltage within a circuit using resistors to achieve signal attenuation.

As for the 15kΩ resistor in Lekernel's Figure 2, Petitioner argues this resistor forms a voltage divider with the 120kΩ resistor to “manage[] voltage drops between the microphone jack and the transistor circuit[.]” Pet. 16–17 (citing Ex. 1015 ¶¶ 24–25⁶). Patent Owner, on the other hand, contends this resistor prevents the AC signal provided to the microphone input “from disturbing the stable DC operating point of the transistor.” Ex. 2033 ¶ 12 (stating the resistor is used to prevent the amplified AC signal from disturbing the stable DC operating point of the transistor). Lekernel describes this resistor as “provid[ing] a stable polarization voltage to the transistor.” Ex. 1009 ¶ 6. Whether providing a stable voltage to a transistor also means assisting in attenuating any of the output of the transistor that may return to the transistor is not clear from the record. Regardless, as

⁶ Patent Owner asserts Dr. McLaughlin confuses Lekernel's DC drop of the microphone bias voltage with attenuation of the analog read head signal. PO Resp. 28 (citing Ex. 1015 ¶ 25 and Ex. 2031 ¶ 92). A careful reading of paragraph 25 of the McLaughlin declaration states that the Lekernel circuit “forms a voltage divider with the microphone jack which produces ‘a reasonable voltage drop on the microphone input (about -1V) when the circuit is connect.’” Ex. 1015 ¶ 25. The statement related to the reasonable voltage drop is a direct quote from Lekernel. Dr. McLaughlin also “describes that, in order to obtain this desired voltage drop, one would choose or set the value of 120 kΩ resistor accordingly.” *Id.* This statement also is supported directly by Lekernel. Ex. 1009 ¶ 6.

discussed above, the concept of using resistors (e.g., a resistive voltage divider) to drop a voltage and attenuate a signal, when needed, would have been known to one skilled in the art and has not been sufficiently rebutted by Patent Owner.

Returning to the disputed phrase, “the output plug . . . configured to provide the attenuated signal . . . to the cell phone” in claim 1, Patent Owner argues that Mr. Bourdeauducq testifies the circuit described in his article does not attenuate but, rather, amplifies the signal from the magnetic read head sent to the sound card’s microphone input. *See* PO Resp. 27–28 (citing Ex. 2033 ¶¶ 13–14). We accept that the circuit shown in Figure 2 of Lekernel is used to amplify the analog signal produced by the magnetic read head. Ex. 2033 ¶¶ 10–11. We additionally accept that the discussed voltage drop in Lekernel addresses a voltage drop used to bias the transistor in Figure 2. Ex. 2033 ¶ 13; Ex. 2031 ¶ 215. Even so, Lekernel teaches a well-known principle in the electrical arts of using resistors to condition and drop voltages, which in turn, attenuates signals.

Additionally, we did not institute *inter partes* review solely on this known teaching found in Lekernel. The Decision to Institute further relies on Padilla to teach or suggest the recitations in claim 1, including the phrase “adapted to be inserted into a jack associated with a microphone input associated with a cell phone.” Dec. on Inst. 14–15. Specifically, Lekernel discusses its output plug is adapted to be inserted into a soundcard’s microphone input, but does not discuss inserting into a microphone input of a cell phone. Dec. on Inst. 14 (citing Pet. 20–21, 23–24). Thus, to the extent the “adapted to” recitation in claim 1 is considered a structural limitation, we turned to Padilla to teach this feature. Dec. on Inst. 14–15 (citing Ex. 1010

§§ “Requisites,” “Hardware,” and “Improvements” and Ex. 1015 ¶¶ 39–42). Patent Owner does not dispute these findings related to Padilla or reasons to combine the references. *See generally* PO Resp.

The record also reflects that conditioning signals within a circuit to achieve a desired result was known and, given the combined Lekernel/Padilla system, one skilled in the art would have conditioned signals sent from the card reader to the microphone input based on the cell phone’s characteristics. *See* Dec. on Inst. 12, 14–15 (citing Pet. 17–18 (discussing proving an analog signal in an acceptable processing range) and citing Ex. 1015 ¶ 29). In the Decision to Institute, we discussed cell phone characteristics, such as Padilla’s, and how these characteristics relate to whether signal attenuation is needed for the phone’s input. *See* Dec. on Inst. 14 (citing Ex. 1015 ¶ 29). For example, Padilla suggests using phones other than “the Siemens MC60” to turn a mobile phone into a magnetic stripe reader. Ex. 1010 § “Foreword.” Accordingly, based on the cell phone selected and its characteristics, we determine that one skilled in the art would have recognized that conditioning signals inputted and received by a cell phone’s microphone input may be necessary. Dec. on Inst. 12 (citing Pet. 17), 14. Specifically, we concluded that “an ordinarily skilled artisan would have recognized that the characteristics of the cell phone’s microphone input impact whether attenuation between the read head and the cell phone’s microphone input is needed.” Dec. on Inst. 14; *see also* Pet. 21–22, 24–25.

The record includes two particular examples where one skilled in the art would have added resistance to Lekernel’s circuit and attenuated the signal received by the phone of the combined Lekernel/Padilla system. *See*

Dec. on Inst. 14 (citing to Ex. 1015 ¶ 29). First, Dr. McLaughlin describes a known technique of providing the microphone input an acceptable level for the cell phone using a voltage divider by placing a resistor at the output of coil 24 or the read head. Ex. 1015 ¶ 16. To be clear, in this scenario, the resistor would be added outside Figure 2's amplifier in Lekernel to achieve a voltage drop and to "to ensure the signal falls within a range of signals detectable and usable by a cell phone," preventing damage to a recipient device. *See* Ex. 1015 ¶¶ 9, 14. Dr. McLaughlin further discusses impedance matching the card reader circuit with the cell phone's microphone input when the cell phone has internal amplification. Dec. on Inst. 14 (citing Ex. 1015 ¶ 29); Ex. 1015 ¶¶ 28–29. Given the background knowledge of an ordinary artisan, one skilled in the art would have understood to add resistance to the combined Lekernel/Padilla system (e.g., after the amplifier in Lekernel's Figure 2) for attenuating the signal sent to the microphone input in order to achieve an acceptable level for the cell phone and/or to impedance match the read head device with the cell phone.

To the extent that more than one resistor is required to attenuate a signal,⁷ Patent Owner acknowledges that that the cell phone includes a pull-up resistor. *See* Tr. 61–62. But, Patent Owner contends that the internal resistor is "extremely low" and that "no such voltage divider is created." PO Resp. 22. However, even though the resistance may be low, Patent Owner admits that this internal resistance along with a single resistor outside the

⁷ At one point, the record indicates a single resistor attenuates an analog signal (e.g., claim 14; Ex. 2031 ¶ 174 (stating the one resistor in Square's reader is configured to attenuate the analog signal)), and at another point, the record indicates more than one resistor is required to attenuate the analog signal (Tr. 61–62).

phone provides what is needed to create an attenuated signal. *See* Tr. 61–62 (indicating that pull-up resistors in the device work with a single resistor to attenuate a signal).

Patent Owner does not address squarely our findings and conclusions addressed at page 14 of the Decision to Institute. Rather, Patent Owner discusses our analysis on page 13. PO Resp. 30–34. As a consequence, Patent Owner has not disputed the principles stated to be known by an ordinarily skilled artisan that some cell phones have characteristics that may require signal conditioning, including attenuation of the signal between the read head and cell phone’s microphone input.

In proposing the obviousness ground, Petitioner also suggests eliminating the transistor in Lekernel, leaving only a voltage divider. Pet. 20; Pet. Reply 3–4; PO Resp. 21 (citing Ex. 1015 ¶ 30). We agree that this specific modification in the Petition is problematic. Modifying Figure 2 in Lekernel, such that the circuit no longer amplifies, changes the circuit’s principle of operation. PO Resp. 29. Specifically, Mr. Bourdeauducq states all the components in Figure 2, except for the magnetic read head and the jack are part of the amplifier, and thus, the purpose of the circuit in Figure 2 is to amplify the read head signal. Ex. 2033 ¶¶ 10, 16. Removing certain components (e.g., the transistor) from the amplifier in Figure 2 of Lekernel would change the circuit’s principal operation to amplify. Even so, regardless of the signal being amplified in Lekernel, there are several scenarios previously discussed known to an ordinarily skilled artisan for attenuating the analog signal provided to a cell phone’s microphone input.

Accordingly, to the extent the Decision to Institute proposed removing components from Figure 2 in Lekernel so only a voltage divider remains

(*see* Dec. on Inst. 12–13), we no longer rely on this reasoning in the final decision. But, as explained above, our analysis in the Decision to Institute did not rely exclusively on this reason to support our determination that there is a reasonable likelihood that Petitioner would prevail in showing certain claims were unpatentable over Lekernel and Padilla. On pages 13 and 14, we identified alternative changes to Lekernel’s Figure 2, including adding components, such as resistors, to the circuit depending on the particular read head or the cell phone characteristics. Dec. on Inst. 13–14 (indicating components may be *added* to the Lekernel reader when attenuation of the signal is needed in certain scenarios).

Patent Owner further asserts that a magnetic read head used in Lekernel’s environment would create a weak signal that needs amplification. PO Resp. 34. Patent Owner argues that a read head that would produce sufficient amplitude and would not require amplification in Lekernel would be “gargantuan.” *Id.* However, this discussion does not account for another scavenged read head having different characteristics than the specific one used in Figure 2’s circuit of Lekernel (*see* Dec. on Inst. 13) or the situation where the signal could be amplified by a factor less than 30 and still function. Mr. Bourdeauducq states that generally, read heads require amplification. Ex.1064, 18:17–19:2. Yet, Mr. Bourdeauducq does not dismiss the possibility that there may be some read heads that do not require an amplifier. *See id.* (indicating that “generally” read head must be amplified).

Lastly, Dr. Morley is said to be the inventor of the ’946 patent, and he has an interest in the outcome of this proceeding. *See* Pet. Reply 3, 7. Thus, although we afford the Morley declaration weight, we also considered that

some statements may be self-serving. *See id.* We further determine that much of the Wood declaration is redundant with the Morley declaration, given that he relies nearly exclusively on Dr. Morley’s testimony when arriving at his conclusions. Ex. 2032 ¶ 19 (stating “I have read Dr. Morley’s description of the qualifications and knowledge that a PHOSITA⁸ would have (Ex. 2031 ¶ 21), and I agree with that description”), 26 (“I agree with Dr. Morley’s statement”), and 32, 36, 39, 40 (“I agree with Dr. Morley’s opinions,” and 21, 30 (“I agree with Dr. Morley”); *see* Pet. Reply 7. Thus, although we considered the Wood declaration, the declaration adds little persuasive weight.

Next, we turn to the evidence of secondary considerations in determining whether claim 1 is unpatentable based on Lekernel and Padilla. In particular, Patent Owner submits evidence purporting to show: (1) that Petitioner’s reader and methods embody the features of at least claims 1–5, 7–9, and 15 of the ’946 patent, (2) that Petitioner, Square, copied the invention of the ’946 patent, and (3) the commercial success of Petitioner’s card reader device. PO Resp. 48.

Concerning the evidence of copying, Patent Owner argues that Dr. Morley testified a copy of the patent application containing “his reader and methods, along with the reader’s wiring diagram (Fig. 2 of the ’946 Patent)” was given by “his attorney” to Mr. McKelvey in June, 2009. PO Resp. 53 (citing Ex. 2031 ¶ 171). Patent Owner states Mr. McKelvey worked to have the reader produced in China over the summer of 2009. PO Resp. 53 (citing Ex. 2031 ¶ 172). Patent Owner further asserts Dr. Morley “provided technical information to Mr. McKelvey and to Square” to produce Square’s

⁸ PHOSITA stands for “person having ordinary skill in the art.”

reader corresponding to at least claims 1–5 and 15. *Id.* (citing Ex. 2031 ¶¶ 171–172). Notably, Patent Owner does not allege that claims 6, 10–14, 16, and 17 were copied by Petitioner. *Id.*; *see* Ex. 2031 ¶ 174. On the other hand, Petitioner asserts that Mr. McKelvey co-developed “a card reader prototype” with Dr. Morley, acting in an advisory capacity, and the “co-development efforts” do not amount to copying. Pet. Reply 13–14 (citing Ex. 2030, 9, 11 and Ex. 1062, 8:18–9:5, 11:9–13).

We determine there is at least an inference of copying in the record. Petitioner had access to the circuit said to be designed by Dr. Morley and the design for at least claims 1–5 of the ’946 patent is similar to Square’s reader, which can create a strong inference of copying. *Cable Elec. Prods. Inc. v. Genmark Inc.*, 770 F.2d 1015, 1027 (Fed. Cir. 1985) (overruled on other grounds by *Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356, 1358–61 (Fed. Cir. 1999) (en banc)). For example, Exhibit 2030 is a series of emails that describes “Bob’s circuit” and includes some specifications of a reader that includes a magnetic read head, an audio jack, and two resistors, which are the recited components of claim 1 of the ’946 patent. *See* Exs. 2030, 2, 9; 2031, ¶¶ 170–172, 174 (cited at PO Resp. 53–54). Petitioner argues that Mr. McKelvey’s email indicates “Bob’s circuit was not designed for the current low-profile read heads. We need to tune the output to the signal from the production heads.” Pet. Reply 13–14 (citing Ex. 2030, 9). Yet, this does not demonstrate that the circuit referred to as Bob’s circuit failed to have the elements of claim 1 of the ’946 patent. Also, the email indicates that “[m]ost of the real work is falling on you guys” and not on Mr. McKelvey. Ex. 2030, 10.

However, even if sufficient evidence of copying has been established, “more than the mere fact of copying . . . is needed to make that action significant to a determination of obviousness issue.” *Cable Elec.*, 770 F.2d at 1028. As stated previously in the Decision to Institute, the evidence also suggests that the claimed features could have been included within Square’s reader due to some factor other than copying, such as a general lack of concern or contempt for patent property, which weighs neither for nor against the nonobviousness of a specific patent, or the attitudes existing toward patent property and accepted practices in the industry. *See id.* Nor is there evidence that Petitioner expended great effort to design a card reader, but failed, and then copied the claimed invention of the ’946 patent. *See Panduit Corp. v. Dennison Manufacturing Co.*, 774 F.2d 1082, 1098-99 (Fed. Cir. 1985) (vacated other grounds by 475 U.S. 809 (1986)). We thus conclude there is insufficient evidence in the record to render any purported copying significant to the obviousness determination.

Petitioner argues that the ’946 patent was not filed until April 2011 and asserts that the claims of this patent were drafted “to cover pre-existing Square technology.” Pet. Reply 15. We render no determination concerning this contention. Furthermore, the ’946 patent claims priority to an application filed on June 10, 2009. Also, to the extent argued, we find no supporting case law that requires copying “be with respect to a ‘patented product’,” such that copying must occur on a date after a patent issues. *See id.* (citing *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1246 (Fed. Cir. 2010)). That is, although *Wyers* discusses a patented invention, *Wyers* does not state further that the copying must occur after the patent issues.

Regarding establishing the requisite nexus and whether Square's reader and methods are coextensive with the recited claims, Patent Owner points to Dr. Morley's testimony and claim charts mapping Square's reader and methods embodying the claimed features of claims 1–5, 7–9, and 15 of the '946 patent. Based on this mapping and relying on *Ormco Corp. v. Align Tech., Inc.*, 463 F.3d 1299, 1312 (Fed. Cir. 2006), Patent Owner argues that this mapping “has established *prima facie* nexus.” PO Resp. 51; PO Resp. 50–51 (citing Ex. 2031 ¶ 174).

In the context of this proceeding, we do not agree with Patent Owner's contention that when the marketed product embodies and is coextensive with the claimed features, a secondary consideration factor (e.g., commercial success) is a presumptively attributed to the claimed invention. PO Resp. 49–50. For example, *In re Huang*, 100 F.3d 135 (Fed. Cir. 1996) states “that [commercial] success is relevant in the obviousness context only if there is proof that the sales were a direct result of the *unique characteristics of the claimed invention*-as opposed to other economic and commercial factors unrelated to the quality of the patented subject matter.” *Id.* at 140 (emphasis added); *see also In re Huai-Hung Kao*, 639 F.3d 1057, 1068 (Fed. Cir. 2011) (indicating there is no nexus where the evidence results from something other than what is both claimed and novel in the claim).

Thus, in establishing a nexus with a secondary consideration in this proceeding, Patent Owner needs to show a specific feature of the claim is attributable to the commercial success of Square's card reader and not just that the device is coextensive with the claimed features. Patent Owner points to an interview of Mr. Jack Dorsey, described as Square's CEO. PO

Resp. 51–52. In the interview and in response to asking what Square was, Mr. Dorsey states “OK, well [ah] Square is [ahh] a very simple little device that plugs into your iPhone or Android device and allows anyone to accept credit card immediately wherever they are.” PO Resp. 52 (citing Ex. 2047). Patent Owner asserts that this discussion establishes a nexus to the claimed “output plug” feature. *Id.*

Yet, this statement just describes the plug and does not relate the plug itself to any of Square’s commercial success. The statement is also vague as how the device plugs into a phone, such that there is an insufficient tie to the recited “output plug, adapted to be inserted into a jack associated with a *microphone input* associated with a cell phone” in claim 1. Ex. 1001, 6:66–67 (emphasis added). Although stating the reader is “very simple” and “little,” Patent Owner has not demonstrated these features are claimed and are a novel or unique feature of the claims — a requisite needed to outweigh the case for obviousness based on commercial success.

Turning to other evidence of commercial success, Patent Owner asserts that Mr. Dryer states “the features of Square’s readers—which allowed it to be given to customers free of charge and used with virtually all smartphones—were the primary reasons for Square’s commercial success[.]” PO Resp. 51 (quoting Exhibit 2034 ¶ 93)⁹. Contrary to Petitioner’s contentions (Pet. Reply), we accept that Mr. Dryer has some knowledge of the mobile credit card payment system industry, but we also note he was employed for years in unrelated fields, including management consulting and law. Ex. 2034 ¶¶ 2, 9–12. Moreover, Mr. Dryer is not

⁹ Throughout this decision, we refer to the public version of Mr. Dryer’s declaration, Exhibit 2034.

specific as to what “features” of Square’s reader allow the readers to be given to customers free of charge. Ex. 2034 ¶ 93. As Petitioner notes, Mr. Dryer relies on Dr. Morley’s declaration in concluding that there is a strong relationship between the inventions claimed in the ’946 patent and Square’s reader without considering other unclaimed features of the reader. *See* Pet. Reply 19–20 (citing Ex. 2034 ¶ 92 and Ex. 1065, 88). Thus, although we afford Mr. Dryer’s testimony some weight, its persuasive weight must be balanced with his minimal experience.

Patent Owner also quotes from a tweet of Mr. Dorsey, said to be sent November 20, 2014, where he states “I believe there's finally more value in Square's software and services than in the hardware ‘dongle’ we're known for.” PO Resp. 52 (citing Ex. 2054). Patent Owner argues that this statement by Mr. Dorsey demonstrates that Square’s commercial success prior to November 2014 was due to the Square’s reader. Yet, what Mr. Dorsey meant by “more value” is not clear. Presuming Mr. Dorsey was referring to financial or commercial success, this tweet does not link any particular novel or unique feature of the claim (e.g., claim 1) to Square’s commercial success. *See id.* At most, this shows the reader’s hardware, as a whole, was more valuable. *See id.* Mr. Dryer further testifies that the above statement made by Mr. Dorsey demonstrates “[t]here is a strong link or tie between the identity of Square and Square’s reader.” *Id.* (citing Exhibit 2034 ¶ 76). Even presuming Dr. Dryer is correct, the evidence does not demonstrate a nexus between a claimed feature and Square’s commercial success as previously explained. Rather, the statement relates Square’s reader to its identity.

On this record, Patent Owner has not explained adequately to what feature(s) of its claims Square's commercial success is attributed. We, thus, are not persuaded the requisite nexus has been established.

Patent Owner presents evidence alleging that the cost to Square for the Square's First Generation Card readers was low, such that Square could afford to give them to consumers for free. PO Resp. 54. Patent Owner asserts that "[i]t would have been prohibitively costly to give away the then-existing, commercially available, card readers." *Id.* However, Patent Owner later states GoPayment eventually gave the Roam Data reader away for free with their product. PO Resp. 54, 57. Granted, Mr. Dryer also indicates that each reader cost GoPayment \$23, but this evidence indicates that the decision to give the card reader away for free was a business decision. *See id.*

Also, Mr. Dryer states "flooding the market with free readers was Square's best marketing tool" as well as Mr. Dorsey's "public appearances" and "word-of-mouth advertising." PO Resp. 58 (citing Ex. 2034 ¶¶ 49, 64). Petitioner further echoes this sentiment. Pet. Reply 21 (including that "[t]he notoriety of Mr. Dorsey was clearly the focus of much of Square's press coverage in the early day . . ."). Moreover, Exhibit 2013 further states that Square has "great press" and "hype," suggesting that the card reader's success was attributed to its marketing. Ex. 2013 (indicating Square's success attributable to "great press" and "hype" based on "Mr. Dorsey" being "the Silicon Valley Rock Star.") Thus, this evidence of commercial success does not weigh heavily in favor of patentability.

Patent Owner also refers to a statement made by Mimi Hart, described as the CEO of Magtek, regarding what she thought was innovative about

Square's reader. PO Resp. 55. She stated Square had

taken a magnetic tag, the smallest component possible, and instead of trying to decode right at the time where they [are] recovering the signal from, the stripe, they're actually capturing the analog waveform and doing the decode process further down the pipe. That allows them to put a very low-cost product in the market. That's the innovation.

Ex. 2013, 2. This statement focuses on the low-cost of the reader and not a claimed feature. *Id.* However, we fail to find a recitation to "low-cost" reader in the claims. Moreover, Ms. Hart's statements indicate decoding "further down the pipe" was innovative, which also is not a recited feature of claim 1. *Id.* Additionally, the discussion addresses the information found in the credit card's magnetic stripe that is later decoded, which is not a feature of the reader as recited in claim 1.

Thus, although Patent Owner alleges that a "minimalist, low-cost design" is among the "claimed inventive features of the readers" (PO Resp. 54), Patent Owner has not established a sufficient nexus between the low-cost or minimalistic reader and a claimed feature in claim 1. Importantly, "if the commercial success is due to an unclaimed feature of the device" or "if the feature that creates the commercial success was known in the prior art, the success is not pertinent." *Ormco*, 463 F.3d at 1312.

Patent Owner further argues that Square's free reader or its hardware disrupted "the entire mobile payments industry." Ex. 2034, ¶ 27; PO Resp. 55 (citing Ex. 2013). For support, Patent Owner cites to an article where Dan Stiel states "[if] this is disruptive technology, it is only on the hardware/terminal side of the business." PO Resp. 55 (citing Ex. 2013). We are not persuaded. By stating "if," Mr. Stiel's statement does not indicate persuasively that he found Square's reader was disruptive technology.

Additionally, Patent Owner has not linked the praised garnered in the industry (PO Resp. 58 (citing Ex. 2043)) to a novel or unique feature of the claims of the '946 patent.

The record reflects some commercial success of Square's reader in the form of sales. PO Resp. 55–57. For example, Patent Owner presents evidence that Square was processing credit card transactions at \$2 billion annually. PO Resp. 57 (citing Ex. 2015¹⁰). However, “evidence related solely to the number of units sold provides a very weak showing of commercial success.” *Huang*, 100 F.3d at 140. As another example, Patent Owner quotes a tweet from Mr. Dorsey indicating that there are eight million merchants who accept credit cards in the United States and that Square has added one million. PO Resp. 56 (quoting Ex. 2015). This shows a growth of approximately ten percent in “merchants,” but there is an insufficient connection between this growth and a feature of the claims. At best, the record reflects that giving the reader to the consumer for free correlates to the increase in merchants. This is further supported by the statement made by Richard Branson, who stated he “took interest in Square’s rapid growth and novel technology, in particular its free hardware” PO Resp. 56 (quoting Ex. 2014).

Accordingly, the record reflects that much of Square's commercial success is attributed to business or marketing decisions by Square to give the card away for free. We thus determine that the evidence of secondary considerations does not outweigh the evidence of obviousness.

¹⁰ The information related to the two billion dollars per annum is found in Exhibit 2014.

Upon review of the entire record, we are persuaded, by a preponderance of the evidence, that claim 1 is unpatentable over Lekernel and Padilla. Moreover, upon review of the record in its entirety, we are persuaded by a preponderance of the evidence that dependent claims 2, 6, 7, 15, and 16 are unpatentable as well.

C. Lekernel, Padilla, and Odagiri (Exs. 1009, 1010, 1014)

We instituted *inter parte* review of claims 4 and 9 on a ground of unpatentability based on Lekernel, Padilla, and Odagiri. Dec. on Inst. 19. However, as noted previously, we did not institute *inter partes* review for claims 3 and 8 based on Lekernel and Padilla. *Id.* Specifically, we found that Lekernel did not “demonstrate that the read head or the resistor(s) are located inside or positioned within the housing” as recited in claims 3 and 8. *Id.*

For the very first time at oral hearing, Patent Owner addressed the dependency of claims 4 and 9 to claims 3 and 8 respectively. Patent Owner contends that, because we did not institute review for claims 3 and 8 based on Lekernel and Padilla, we should not have instituted review of dependent claims 4 and 9 based on Lekernel, Padilla, and Odagiri. Tr. 52–56.

Claim 4 depends from claim 3, and claim 9 depends from claim 8. Petitioner did not rely on Odagiri to teach the recitation “the read head and said one or more resistors are contained within a housing” recited in claim 3 or similarly recited in claim 9. Pet. 25–26. Rather, the rejection relied on Lekernel for this feature in claim 3 and turns to Odagiri to teach the output plug extends out the housing as recited in claim 4. *See* Pet. 25, 27. We adopted the Petitioner’s reasoning in determining there was a reasonable likelihood that Petitioner would prevail in showing that these claims are

unpatentable. Dec. on Inst. 19 (citing Pet. 27–30). As such, the grounds for instituting review of claims 4 and 9 did not rely on Odagiri to teach the concept of the resistors and read head contained within a housing. Because we found there was not a reasonable likelihood that Petitioner would prevail in showing claims 3 and 8 are unpatentable based on Lekernel and Padilla, we should not have found there was a reasonable likelihood that Petitioner would prevail in showing dependent claims 4 and 9 are unpatentable based on the same reasoning and reliance on Lekernel.

Given the opportunity to respond for the first time at the hearing, Petitioner noted, and we agree, that Odagiri also has a housing for enclosing components. Tr. 67. However, we are constrained to conclude that there are insufficient facts in the record to support that claims 4 and 9 are unpatentable over Lekernel, Padilla, and Odagiri as proposed by Petitioner.

D. *Lekernel, Padilla, and Wallner* (Exs. 1009–1012¹¹)

a. *Claim 5*

Claim 5 also depends from claim 3. As discussed above, the adopted ground relies on Lekernel to teach the housing as recited in claim 3. Thus, for reasons previously discussed, we are constrained by the record to conclude that there is insufficient evidence that claim 5 is unpatentable over Lekernel, Padilla, and Wallner as proposed.

b. *Claims 10–14 and 17*

In contrast, claims 10–14 and 17 do not depend from claims 3 or 8. Patent Owner contends that Wallner does not qualify as prior art. PO Resp. 34–36. In particular, Patent Owner argues that Wallner does not have

¹¹ Exhibit 1012 is the provisional application for Wallner, U.S. Provisional App. No. 61/163,296, filed March 25, 2009.

support for an electrical connection between the reader and cell phone and has no description of a microphone input. PO Resp. 35 (citing Ex. 2031 ¶ 110). Petitioner contends that the ground of rejection for claims 10–14 and 17 does not rely on Wallner’s wired connection. Pet. Reply 8–9; *see also* Pet. 30–36. We agree with Petitioner.

As Petitioner notes, Lekernel and Padilla are relied upon to teach the feature of an electrical connection between the reader and cell phone. Pet. Reply 9; *see also* Dec. on Inst. 19 (citing Pet. 30–38). Wallner, on the other hand, is cited to teach “using the decoded magnetic stripe data to perform a card-based transaction.” Pet. 31 (cited at Dec. on Inst. 19 and citing Ex. 1011 ¶¶ 17–19 and Ex. 1012, 2–3). Patent Owner has not asserted that Wallner’s provisional application lacks support to teach using decoded magnetic stripe data to perform card-based transactions. *See* Pet. Reply 9.

For the above reasons and for the reasons stated in the Decision to Institute, we are persuaded that claims 10–14 and 17 are unpatentable over Lekernel, Padilla, and Wallner by a preponderance of the evidence.

E. Tang and BPS and Tang, BPS, and Odagiri (Exs. 1006–08, 1014)

For the reasons stated below, we determine that Petitioner has not satisfied the requirement set forth in 37 C.F.R. § 42.63(b) and grant the motion to exclude Exhibit 1008 (BPS) from the record. We agree that the figures in BPS are prior art for all they teach. Paper 54, 4. Yet, the figures in BPS in combination Tang are inadequate to demonstrate by a preponderance of the evidence the recited “one or more resistors configured to attenuate the analog signal resulting in an attenuated analog signal indicative of said data stored on the magnetic stripe.” Pet. 44–45.

Without any context of how the hardware in BPS's Figure 1 or the circuit shown in BPS's Figure 2 is used, there is insufficient evidence to determine whether an ordinarily skilled artisan would have looked to BPS's teachings concerning hardware or circuitry and combined its teachings with Tang. Even further, the cited paragraphs of the McLaughlin declaration¹² used to support this combination also discuss BPS in context of a "mobile phone peripheral . . . to deliver a signal to a microphone input of the mobile phone" in arriving at the conclusion that one would combine BPS with Tang. Ex. 1015 ¶¶ 54, 58; *see also* Pet. 44 (citing Ex. 1015 ¶¶ 54–56, 58). Moreover, relying on general, known concepts of signal conditioning with resistors (Ex. 1015 ¶¶ 56, 58), without the context provided by BPS, does not teach or suggest by a preponderance of the evidence the recited "one or more resistors configured to attenuate the analog signal resulting in an attenuated analog signal indicative of said data stored on the magnetic stripe" of claim 1.

Accordingly, the grounds that rely on BPS are no longer considered sufficient to support a case of obviousness. We are not persuaded that claims 1–17 are unpatentable over Tang and BPS or Tang, BPS, and Odagiri respectively.

F. Patent Owner's Motion to Exclude

Patent Owner moves to exclude three exhibits. They are: (1) Exhibit 1008, (2) Exhibit 1068, and (3) portions of pages 9 and 11 of Exhibit 2030. Mot. to Exclude 1–2.

¹² There is no evidence that Dr. McLaughlin reads and understands Japanese.

1. Exhibit 1008

Concerning Exhibit 1008, Patent Owner asserts that this reference is a computer-generated translation of a Japanese application, which is referred to as BPS. Mot. to Exclude 1. Patent Owner notes that page 1 of BPS states, “[t]his document has been translated by computer. So the translation may not reflect the original precisely.” *Id.* Petitioner has not filed an affidavit attesting to the accuracy of the BPS reference. As such, on the record, the provided translation of BPS may not be accurate.

The Board rule, as set forth in 37 C.F.R. §42.63(b), requires that such computer-generated translations must include an affidavit attesting to the translation’s accuracy. Mot. to Exclude 3–4 (quoting Rule 42.63(b) stating “an affidavit attesting to the accuracy of the translation must be filed with the document”) (italics, bolding, and underlining omitted). In the Decision to Institute, we determined that the failure to comply with 37 C.F.R. § 42.63(b) “at th[at] juncture,” did not negate the determination that Petitioner had shown a reasonable likelihood of success in prevailing on any grounds that relied on BPS. Dec. on Inst. 20. The posture in the Decision to Institute provided Petitioner the opportunity to correct the failure to comply with the rule and submit the missing affidavit. Given that Petitioner did not file an affidavit, we agree with Patent Owner that Petitioner has not complied with the requirement set forth in Rule 42.63(b).

Concerning Petitioner’s response (Paper 54, 1), the language of 37 C.F.R. § 42.64(b)(1) states that “[a]ny objection to evidence submitted during a preliminary proceeding must be served within ten business days of the institution of the trial.” Yet, this rule is ambiguous as to whether this service requirement can be satisfied by documents served prior to a decision

to institute. On this note, Patent Owner objected and raised the issue of BPS's computer translation prior to the Decision to Institute. Prelim. Resp. 48–51. Simultaneously with the filing of the preliminary response, Patent Owner served Petitioner. *See* 37 C.F.R. § 42.6(e)(2). Given the ambiguity in 37 C.F.R. § 42.64(b)(1), we determine that Patent Owner timely submitted its objection and satisfied the requirement set forth in 37 C.F.R. § 42.64(b)(1).

Petitioner has been on notice of Patent Owner's objection concerning the computer translation of BPS from the early stages of the proceeding. We additionally noted "the failure to comply with Rule 42.63(b)" in the Decision to Institute. Dec. on Inst. 20. Even more so, Petitioner has not demonstrated an extraordinary situation such that waiver of the rule is justified. *See* Paper 54, 3–5. Given the particular facts, we grant Patent Owner's motion to exclude the computer-translation found in Exhibit 1008 from the record.

2. *Exhibits 1068 and Pages 9 and 11 of Exhibit 2030*

Patent Owner next argues that the declaration of Mr. Bobby Lee is impermissible hearsay, lacks foundation, and should be excluded from the record. Mot. to Exclude 7–12. We do not rely on the declaration of Mr. Lee in rendering our decision. We therefore dismiss the motion to exclude this exhibit as moot.

Patent Owner also argues that pages 9 and 11 of Exhibit 2030 are used by Petitioner in a manner that constitutes an improper use of hearsay. Mot. to Exclude 12–15. Petitioner states that its reliance on these pages is not for the truth of the matter asserted but to show co-development. Paper 54, 9–11.

We are not persuaded that Petitioner's use of Exhibit 2030 is improper. Exhibit 2030 is offered as evidence by Patent Owner. Patent Owner concedes that this evidence is hearsay by noting that "[Patent Owner] used Exhibit 2030 as evidence of [Petitioner]'s copying by showing the relationship that existed between Dr. Morley and [Petitioner] and Mr. McKelvey." Mot. to Exclude 13. Patent Owner argues that this hearsay evidence is admissible under the admissions exception because the statements it relies on from the emails were made by Mr. McKelvey. *Id.* (citing Fed. R. Evid. 801(d)(2)). We agree with Patent Owner's analysis and determine that the statements of Mr. McKelvey found in Exhibit 2030 are admissible hearsay under Rule 801(d)(2).

Patent Owner, however, does not persuade us that once this evidence is admitted, Petitioner may not refer to that evidence as well. Patent Owner implies that because the statements of Mr. McKelvey are not admissions against Patent Owner, but against Petitioner, Petitioner cannot refer to them or explain in its briefing what those statements mean. *See* Mot. to Exclude 14 ("Petitioner . . . improperly relies on Mr. McKelvey's hearsay statements on pages 9 and 11 from Exhibit 2030 'to prove the truth of the matter[s] asserted'—*not* under any hearsay exception.") Patent Owner does not direct us to any authority supporting such a rule that once evidence is admitted, that same evidence can be excluded from discussion for other purposes. We have determined that Mr. McKelvey's statements are admissible hearsay in this case. Thus, either party may refer to those statements and argue in their briefs what the implications of those statements are.

Accordingly, we deny Patent Owner's motion to exclude Petitioner's use of parts of Exhibit 2030.

III. CONCLUSION

Petitioner has demonstrated, by a preponderance of the evidence, that claims 1, 2, 6, 7, and 10–17 of the '946 patent are unpatentable over Lekernel and Padilla alone or in combination with Wallner under 35 U.S.C. § 103.

Petitioner has not demonstrated that claims 3–5, 8, and 9, of the '946 patent are unpatentable over Lekernel and Padilla alone or in combination with another reference under 35 U.S.C. § 103 based on the record as proposed.

Petitioner has not demonstrated by a preponderance of the evidence that claims 1–17, of the '946 patent are unpatentable over Tang and BPS alone or in combination with another reference under 35 U.S.C. § 103.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1, 2, 6, 7, and 10–17 of the '946 patent have been shown to be unpatentable;

FURTHER ORDERED that Patent Owner's motion to exclude is:

- (1) *granted* as to the computer-translation found in Exhibit 1008;
- (2) *denied* as to Petitioner's use of portions of Exhibit 2030; and
- (3) *dismissed* as moot as to the rest of the motion; and

FURTHER ORDERED that, because this is a final written decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirement of 37 C.F.R. § 90.2.

IPR2014-00312
Patent 8,584,946 B2

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