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EXAMINER

ANDUJAR, LEONARDO

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PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CIRRUS LOGIC, INC. and CIRRUS LOGIC INT'L (UK) LTD.
Third Party Requesters and Respondents
and
BSE CO., LTD.
Third Party Requester and Respondent

v.

KNOWLES ELECTRONICS LLC
Patent Owner and Appellant

Appeal 2015-004342
Merged *Inter Partes* Reexamination Control Nos. 95/000,509,
95/001,251, and 95/001,363
Patent US 6,781,231 B2
Technology Center 3900

Before JAMES T. MOORE, BRADLEY W. BAUMEISTER, and
ANDREW J. DILLON, *Administrative Patent Judges*.

BAUMEISTER, *Administrative Patent Judge*.

DECISION ON APPEAL

Appeal 2015-004342

Merged *Inter Partes* Reexamination Control Nos. 95/000, 509, 95/001,251,
and 95/001,363

US Patent No. 6,781,231 B2

SUMMARY

Background

This proceeding arose from three requests for *inter partes* reexamination of US Patent 6,781,231 B2, which is entitled “MICROELECTROMECHANICAL SYSTEM PACKAGE WITH ENVIRONMENTAL AND INTERFERENCE SHIELD” (issued to Anthony D. Minervini on Aug. 24, 2004 from Application 10/238,256, filed Sept. 10, 2002) (“the ’231 Minervini Patent”).¹ *Inter partes* reexamination request 95/000,509 was filed October 7, 2009 by Requester Analog Devices, Inc. (“Analog Device’s ’509 Request”). Corrected *inter partes* reexamination request 95/001,251 was filed November 24, 2009 by Wolfson Microelectronics plc, now Cirrus Logic, Inc. and Cirrus Logic International (UK) Ltd. (collectively “Cirrus” and “Cirrus’s ’1251 Request”). Corrected *inter partes* reexamination request 95/001,363 was filed June 30, 2010 by BSE Co., LTD. (“BSE’s ’1363 Request”). The USPTO subsequently merged these three requests. *See* Decision, *sua sponte*, to Merge Reexamination Proceedings, mailed Dec. 28, 2010.

According to Owner, the ’231 Patent is also the subject to five other proceedings (PO App. Br. 1): (1) *Knowles Electronics LLC v. Akustica Inc.*, 2:06cv527 (ED Tex) (dismissed without prejudice); (2) *In Re Silicon Microphone Packages and Products Containing the Same*, Inv. No. 337-TA-629 (ITC) (commission issued Limited Exclusion Order (LEO) based in part on infringement and validity of Minervini ’231 claims 1 and 2); (3) *MEMS*

¹ Knowles Electronics LLC is asserted to be the real party in interest. PO App. Br. 1, dated July 1, 2014.

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Technology Berhad v. Int'l Trade Comm'n and Knowles Electronics LLC, 2010-1018 (Federal Circuit) (affirmed LEO in ITC Inv.); (4) *Knowles Electronics LLC v. Analog Devices Inc*, 1:09cv6238 (ND ILL) (dismissed without prejudice); (5) *In Re Certain Silicon Microphone Packages and Products Containing the Same*, Inv. No. 337-TA-695 (ITC) (commission found no violation based in part on finding claim 1 of Minervini '231 invalid). To the extent these proceedings are persuasive, we have considered them.

For reasons explained more fully below, the Examiner conducting the merged reexamination proceeding ultimately rejected claims 1–4 and 23–27 and confirmed claims 5–22. RAN 1.² Owner timely appealed. *See generally* PO App. Br. Requesters Cirrus and BSE filed Respondent Briefs. *See generally* Cirrus Resp. Br. and BSE Resp. Br. Requester Analog Devices did not file a respondent brief.

We are aware of the papers styled “Citation of Supplemental Federal Circuit Authority” filed August 17, 2015; “Amended Citation of Supplemental Federal Circuit Authority” filed August 18, 2015; and the response thereto filed August 28.

² In addition to the above-mentioned Requests, we also refer to various other documents throughout this Opinion, including (1) the Right of Appeal Notice, mailed March 19, 2014 (“RAN”); (2) Patent Owner’s Amended Appeal Brief, filed July 1, 2014 (“PO App. Br.”); (3) Requester Cirrus’s Respondent Brief, filed July 15, 2014 (“Cirrus Resp. Br.”); (4) Requester BSE’s Respondent Brief, filed July 31, 2014 (“BSE Resp. Br.”); (5) the Examiner’s Answer, mailed September 24, 2014 (incorporating the RAN by reference) (“Ans.”); and (6) Patent Owner’s Rebuttal Brief, filed October 24, 2014 (PO Reb. Br.).

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We have jurisdiction under 35 U.S.C. §§ 134 and 315. We review the appealed rejections for error based upon the issues identified by Appellants, and in light of the arguments and evidence produced thereon. *Cf. Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) (citing *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992)).

An oral hearing was conducted July 22, 2015. The hearing transcript (Tr.) was entered into the record August 20, 2015.

We affirm.

The Invention and Claims

The '231 Patent describes the invention as follows:

A microelectromechanical system package has a microelectromechanical system microphone, a substrate, and a cover. The substrate has a surface for supporting the microelectromechanical microphone. The cover includes a conductive layer having a center portion bounded by a peripheral edge portion. A housing is formed by connecting the peripheral edge portion of the cover to the substrate. The center portion of the cover is spaced from the surface of the substrate to accommodate the microelectromechanical system microphone. The housing includes an acoustic port for allowing an acoustic signal to reach the microelectromechanical system microphone.

Abstract.

Independent claim 1 is illustrative of the appealed claims:

1. A microelectromechanical system package comprising:
a microelectromechanical system microphone;
a substrate comprising a surface for supporting the microelectromechanical microphone;

a cover comprising a conductive layer having a center portion bounded by a peripheral edge portion; and

a housing formed by connecting the peripheral edge portion of the cover to the substrate, the center portion of the cover spaced from the surface of the substrate to accommodate the microelectromechanical system microphone, the housing including an acoustic port for allowing an acoustic signal to reach the micro electromechanical system microphone wherein the housing provides protection from an interference signal.

The Rejections

1. Claims 24–27 stand rejected under 35 U.S.C. § 314(a) as enlarging the scope of the claims of the patent being reexamined. RAN 15–16.
2. Claims 23–27 stand rejected under 35 U.S.C. § 112, ¶ 1, for lacking adequate written description. RAN 16–17.
3. Various combinations of all of claims 1–4 and 23–27 stand rejected as unpatentable under 35 U.S.C. §§ 102 and 103 based upon approximately 39 combinations of multiple prior-art references. *See* RAN 18–37 (setting forth the seven adopted rejections that were proposed by Requester Analog Devices in the '509 Request); RAN 37-66 (setting forth the nine adopted rejections that were proposed by Requester Cirrus in the '1,251 Request); and RAN 67–113 (setting forth the 23 adopted rejections that were proposed by Requester BSE in the '1,363 Request). These adopted art-based rejections include the rejection of claims 1–4, 23, 24, 26, and 27 under 35 U.S.C. § 102(b) as being anticipated by van Halteren (WO 01/414497 A1; published June 7, 2001).

THE REJECTION UNDER 35 U.S.C. § 314

“Claims 24–27 are rejected under 35 U.S.C. § 314(a) as enlarging the scope of the claims of the patent being reexamined.” RAN 15. Independent claim 24, newly added during the reexamination proceeding (*see* Amendments and Response, filed June 18, 2012), is illustrative of the claims subject to this rejection:

24. A micro electromechanical system package comprising:
 - a microelectromechanical system microphone;
 - a cover comprising a conductive layer having a center portion bounded by a peripheral edge portion; and
 - a substrate comprising:
 - an upper surface for supporting the microelectromechanical system microphone, the upper surface comprising:
 - an inner portion comprising a plurality of bond pads electrically connected to the microelectromechanical system microphone; and
 - an outer portion configured to electrically and mechanically attach to the cover; and
 - a lower surface, the lower surface comprising a plurality of solder pads configured to mechanically attach and electrically connect the package to a surface of an external printed circuit board using a solder reflow process;

wherein the peripheral edge portion of the cover and the outer portion of the upper surface of the substrate are electrically and mechanically attached to form a housing, the center portion of the cover being spaced from the upper surface of the substrate to accommodate the microelectromechanical system microphone, the housing capable of providing protection from an interference signal and further comprising at

least one acoustic port for allowing an acoustic signal to reach the microelectromechanical system microphone.

Contentions

The Examiner concludes that claims 24–27 improperly broaden the scope of the patent claims because these newly added claims omit the limitation of a chamber—a limitation that appears in each of independent patent claims 2–4. RAN 15–16. The Examiner also finds that claim 24 omits limitations of independent claim 5, relating to the first and second metal cup with an interposed environmental barrier (RAN 122), as well as the limitation of independent claim 4 relating to the acoustic ports along a surface of a cover (RAN 122–23).

Owner argues that it is irrelevant whether newly added claim 24 is broader than original claims 2–4 because claims 2–4 are narrower than at least original claim 1, and “the Examiner has never identified any elements of Claim 1 that are not also found in Claim 24.” PO App. Br. 54.

The Examiner does not dispute that claim 1 is broader than claims 2–4. *See, e.g.*, RAN 15–16. Rather, with respect to claim 1, the Examiner summarily concludes without explanation that “the Patent owner has also changed the language used in claim 1 in a number of ways that raise further questions as to whether claim 24 broadens the scope of claim 1.” RAN 15.

Principles of Law

The Federal Circuit’s oft-quoted standard for broadening is as follows:

A claim of a reissue application is broader in scope than the original claims if it contains within its scope any

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conceivable apparatus or process [that] would not have infringed the original patent. *In re Self*, 671 F.2d 1344 (CCPA 1982); *In re Ruth*, 278 F.2d 729 (CCPA 1960). A reissue claim that is broader in any respect is considered to be broader than the original claims even though it may be narrower in other respects. *In re Bennett*, 766 F.2d 524 (Fed.Cir.1985); *Ball Corp. v. United States*, 729 F.2d 1429 (Fed.Cir.1984).

Tilloston, Ltd. V. Walbro Corp., 831 F.2d 1033, 1037 n.2 (Fed. Cir. 1987).

The same broadening test is applied to claims in reexamination.

Anderson v. International Eng'g & Mfg., 160 F.3d at 1349.

Analysis

The Examiner's summary conclusion regarding the breadth of claim 24 relative to that of claim 1 is not supported by any facts or a technical rationale. Furthermore, our review of the claims fails to evince any limitations of claim 1 that are absent from claim 24. As such, the Examiner has failed to establish that claim 24 contains within its scope any conceivable apparatus that would not have infringed the original patent. Accordingly, the Examiner has not established that independent claim 24 or dependent claims 25–27 improperly enlarge the scope of the originally filed claims.

Requester Cirrus does assert that numerous differences exist between newly added claim 24 and original claim 1:

There are numerous differences in the language between claim 1 and claim 24. For example, the “housing” is positively recited as an element in claim 1, but is only indirectly referenced in claim 24. The peripheral portion of the cover is *connected* to the substrate in claim 1, while in claim 24, the peripheral portion of the cover is electrically and mechanically

attached to the substrate. Furthermore, the term “an acoustic port” in claim 1 has been changed to “at least one acoustic port,” in claim 24. In claim 1, the housing “provides protection,” while claim 24 merely states that the indirectly recited housing is “capable of” protecting. These different terms do not necessarily have the same meaning, raising doubt as to whether the claims have the same scope and raising substantial questions as to whether claim 24 is broader in these respects, as there are reasonable constructions of these terms that result in claim 24 being broader in scope than claim 1.

Cirrus Resp. Br. 19.

At oral argument, Requester Cirrus elaborated on this argument. According to Requester Cirrus, the fact that claim 24 uses different words than does claim 1 raises a presumption that Owner intends the scope of claim 24 to be different from that of claim 1. Tr. 42. Cirrus further argues that by not sustaining the broadening rejection, the Board would enable Owner to argue later during litigation that claim 24 is broader than claim 1. *Id.*

Requester Cirrus is correct that differences in claims’ respective wording may raise a presumption that different claim scopes are intended, but this presumption is not irrebuttable. In the present case, Cirrus has not provided sufficient evidence that any of the differences in wording reasonably may be interpreted as intending to establish different claim scopes. For example, Cirrus has not provided sufficient evidence that claim 1’s term “connected” is any narrower than claim 24’s term “attached.” We find no persuasive evidence that either term is limited to a *direct* mechanical or electrical connection or attachment. Rather, both of the terms appear to

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be synonymous, encompassing *indirect* connections and attachments, as well.

In summary, Requester has not provided any reasonable examples of subject matter that would infringe newly added claim 24 but not infringe original claim 1. Cirrus merely demonstrates that the original and new claims do not employ identical terminology. However, the claimed subject matter need not be described “*in haec verba*” in the original specification in order to satisfy the written description requirement. *In re Wright*, 866 F.2d 422, 425 (Fed. Cir. 1989). Accordingly, Cirrus’s arguments are not persuasive.

For these reasons, we do not sustain the rejection of claims 24–27 under 35 U.S.C. § 314(a) for enlarging the scope of the claims of the patent being reexamined.

THE REJECTION UNDER 35 U.S.C. § 112, ¶ 1

Claims 23–27 stand rejected under 35 U.S.C. § 112, ¶ 1, for lacking adequate written description in the Specification. The language of each claim that is found to be lacking adequate written description is “wherein the solder pads are configured to mechanically attach and electrically connect the package to a surface of an external printed circuit board using a solder reflow process” (“the reflow limitation”). RAN 16–18.

Owner does not dispute that the Specification fails to recite the reflow limitation expressly. *See* PO App. Br. 49–52. Instead, the Specification merely sets forth solder pads for connection to a separate printed circuit board without expressly stating that the solder pads are connected. *See*

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'231 Patent, col. 4, ll. 2–4 (“The substrate 14 further comprises solder pads 31 for electrical connection to an end user’s board”). Nonetheless, Owner maintains that the Specification provides adequate written description because “the disclosure ‘allow[s] one skilled in the art to visualize or recognize the identity of the subject matter purportedly described.’”

PO App. Br. 50 (citing *Enzo Biochem, Inc. v. Gen-Probe Inc.*, 323 F.3d 956, 968 (Fed. Cir. 2002)).

Owner’s statement of the law regarding the written description requirement is taken out of context and incomplete. The *Enzo Biochem* court more fully explained that “The purpose of the ‘written description’ requirement is broader than to merely explain how to ‘make and use’; the applicant must also convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in *possession* of the invention.” *Enzo Biochem, Inc.*, 323 F.3d 956 at 969 (citing *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed.Cir.1991))(emphasis added).

The *Enzo Biochem* court made the statement cited by Owner within the context of addressing the question of whether an originally filed specification necessarily satisfied the written description requirement simply by virtue of the fact that the Specification provided express support for a disputed genus claim. *Enzo Biochem, Inc.*, 323 F.3d 956 at 968. The court held that “[t]he appearance of mere indistinct words in a specification or a claim, even an original claim, does not necessarily satisfy [the written description] requirement The disclosure must [additionally] allow one skilled in the art to visualize or recognize the identity of the subject matter purportedly described.” *Id.*

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The situation addressed in *Enzo Biochem* is distinguishable from the present situation. In the present appeal, Owner does not contend that a solder reflow process is the only way to connect or attach a solder pad to an external printed circuit board or contend that all solder pad materials must be capable of being connected using a solder reflow method. *See* PO App. Br. 49–52. Restated, Owner does not dispute that a solder pad can be connected to an external board by methods other than a solder reflow process. In fact, Owner appears to have added the reflow limitation specifically for the purpose of narrowing claims 23–27 so as to not encompass all solder pads that are connectable by any other solder process, and thereby attempt to achieve the further purpose of overcoming cited prior art.

[A]t most, BGA solder pads from Yamamura '071 to Hietanen '249 would result only in a circuit board with solder pads on its lower surface, not a package with solder pads on its lower surface. More particularly, it would still be surrounded by the telephone housing 15, and as such, those solder pads would not be “configured to mechanically attach and electrically connect the package to the surface of an external printed circuit board using a solder reflow process.”

Amendments and Response 35–36, filed June 18, 2012.

We therefore conclude that the Specification’s disclosure of “solder pads 31 for electrical connection to an end user’s board” (’231 Patent, col. 4, ll. 2–4) is not an inherent disclosure of a solder pad that is capable of connection to a printed circuit board using a solder reflow process, as recited by the claims. “Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.” *In re Robertson*, 169 F.3d 743, 745

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(Fed. Cir. 1999) (citations and internal quotation marks omitted). We instead find that solder reflow is but one of multiple specific methods or species for connecting solder pads to a printed circuit board.

Owner similarly argues

A specification need not include a detailed explanation for every word of a claim. MPEP §2163(II)(A)(1) (“The absence of definitions or details for well-established terms or procedures should not be the basis of a rejection under 35 U.S.C. 112, para.1, for lack of adequate written description.”). Information which is well known in the art need not be described in detail in the specification. *See* MPEP §2163(II)(A)(2) (“Generally, there is an inverse correlation between the level of skill and knowledge in the art and the specificity of disclosure necessary to satisfy the written description requirement.”).

PO App. Br. 49–50.

These arguments are likewise unpersuasive. The present situation is not one wherein the Specification recites a well-established term, but fails to provide a definition or details for the recited term. That is, we are *not* faced with the case that the present Specification discloses the claimed structure of a solder pad that can be connected to a board by use of a reflow process, and then merely fails to provide any details of what compositions and methods can be used to undertake the disclosed reflow solder process. Rather, the present Specification merely discloses a genus—solder pads that are capable of being connected to a board. But the Specification fails completely to disclose the newly claimed species of such pads—pads that are connectable to a board specifically by using a reflow process.

“[O]ne cannot disclose a forest in the original application, and then later pick a tree out of the forest and say here is my invention.” *Purdue*

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Pharma L.P. v. Faulding Inc., 230 F.3d 1320, 1326 (Fed. Cir. 2000).

Rather, the Specification must provide some guides or “blaze marks” that disclose the claimed invention “‘specifically, as something appellants actually invented.’” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1348 (Fed. Cir. 2010).

Owner further argues that the Specification provides adequate written description for the reflow limitation because “one of ordinary skill in the art would understand that [Minervini’s package] would be connected to a printed circuit board one of two ways—either by inserting package pins into holes in the board or else placing the package pins or pads onto the surface of the printed circuit board.” PO App. Br. 50–51 (supporting citations omitted). Owner then contends that “[o]ne of ordinary skill in the art would understand that solder reflow was a well-known ‘surface mount technology’ for surface mounting a package having pads.” PO App. Br. 51–52 (supporting citations omitted).

This argument is not persuasive because the argument is merely directed to what would have been understood objectively *by one of ordinary skill in the art*. Such an argument may be relevant to proving that one of ordinary skill would have known how to make and use the invention, and thereby satisfy the enablement requirement of 35 U.S.C. § 112, ¶ 1. But that test is not applicable to the written-description prong of 35 U.S.C. § 112, ¶ 1. Rather, as explained above, the relevant test for the written description prong, is whether the Specification reasonable conveys that *the applicant*—not one of ordinary skill in the art—was in possession of the claimed subject matter.

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To summarize, Owner has not established that the Examiner erred in finding that the '231 Patent fails to provide adequate written description for the reflow process limitation, newly added in claims 23–27. Accordingly, we sustain the Examiner's rejection of these claims.

Because we sustain the written description rejection of claims 23–27, we need not address the further written description rejection under 35 U.S.C. § 112, ¶ 1, which the Examiner issued because claim 27 recites “at least one acoustic port is located in the substrate.” RAN 18–19. *See In re Gleave*, 560 F.3d 1331, 1338 (Fed. Cir. 2009) (not reaching other rejections after upholding an anticipation rejection); *see also Beloit Corp. v. Valmet Oy*, 742 F.2d 1421 (Fed. Cir. 1984) (ITC can decide a single dispositive issue of numerous resolved by the presiding officer; there is no need for the Commission to decide all issues decided by the presiding officer).

THE ANTICIPATION REJECTION BASED UPON VAN HALTEREN

I.

Contentions

As noted above, independent claims 1 and 24, as well as dependent claims 2–4, 23, 26, and 27, stand rejected under 35 U.S.C. § 102(b) as being anticipated by Halteren. *See, e.g.*, RAN 18–19, 34–36, 37–41, and 99.

Owner argues that the rejection is improper because van Halteren does not disclose a “package,” as required by each of the claims.

Owner points out that “van Halteren '497 discloses a ‘flexible substrate transducer assembly that integrates a transducer or transducer system . . . and a flexible substrate.’” PO App. Br. 18. Owner contends that

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van Halteren's structure constitutes an "assembly," as opposed to a "package." *Id.* 19. According to Owner, one of ordinary skill in the art would understand that "package" is a term of art having a specific meaning (*id.* 5) and this meaning of "package" requires a second-level mechanical and electrical connection to a printed circuit board by either through-hole or surface mounting (*id.* 20).

Owner contends the expert testimony of Dr. Ken Gilleo describes the meaning of "package," as it would be understood by one of ordinary skill:

Minervini '231 Claims 1–4 all require a "package." This term has a specific meaning to those of ordinary skill in the field of electronics packaging. *Generally speaking*, an electronics package is a "housing" whose functions include protecting the electronics (for example, [an] integrated circuit chip or a microelectromechanical device) from mechanical and environmental stress and providing electrical interconnection. In order to protect the IC chip or MEMS device, most packages provide a full enclosure (for example, plastic encapsulation), although some have only a partial enclosure (for example, MEMS ink jet devices). In order to provide electrical interconnections, the package must have a device-to-package electrical connection along with a package-to-printed-circuit-board electrical connection. The device-to-package connection is referred to as the "first-level" connection and the package-to-printed-circuit-board connection is referred to as the "second-level" connection.

PO App. Br. 6 (citing Rule 1.132 Declaration of Dr. Kenneth Burton Gilleo ¶ 5; filed Jan. 28, 2010) (the "Gilleo Decl.").

Dr. Gilleo provides the further opinion,

A "package" is not required for every application incorporating an integrated circuit or MEMS device. For example; in "chip-on-board" or "chip-on-flex" technology, the silicon die is

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mechanically and electrically connected directly to the printed circuit board instead of going through a first level device-to-package connection. If there is only one connection level, then there is no “package.”

Gilleo Decl. ¶ 6.

Based upon this narrow construction of the claim term “package,”

Owner urges

Since nothing in van Halteren ’497 suggests that its exposed contact pads were intended to be (or even could be) inserted into plated through-holes in a printed circuit board or soldered to lands on a printed circuit board, and since in fact van Halteren ’497 expressly discloses a different mechanism, van Halteren ’497 does not disclose the required “package.”

PO App. Br. 21.

Owner additionally cites to approximately ten external references—technical handbooks, standards, and dictionaries—which all purportedly support Dr. Gilleo’s position that a “package” must include first-level and second-level connections. *Id.* 6–7. Owner further urges that our reviewing court, considering an appeal from the International Trade Commission, has already interpreted the term “package” as used in the ’231 Minervini patent to mean “a self-contained unit that has two levels of connection to the device and to the circuit or other system.” Tr. 7–8.

The Examiner finds Owner’s narrow interpretation of the term “package” to be unsupported by evidence, and the Examiner therefore interprets “package” more broadly, according to the broadest-reasonable-interpretation standard. RAN 114–15. More specifically, the Examiner disagrees with Owner’s assertion that the second level interconnection necessarily must be “accomplished only by pins inserted into the printed

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circuit board or by mounting pins or pads to the surface of the printed circuit board.” *Id.* The Examiner instead finds these two methods to be mere non-exhaustive examples. *Id.* at 115.

Issue

Has Owner demonstrated sufficiently that the broadest reasonable interpretation of the claim term “package” necessarily requires that a second-level connection to a printed circuit board be made only by either through-hole mounting or surface mounting?

Analysis

The technical references cited by Owner may well evidence that skilled artisans *usually, or at least commonly*, understand chip packages to possess second-level connection pins that are soldered by a through-hole or surface mounting process. *See* PO App. Br. 9–13. However, this extrinsic evidence does not demonstrate that chip packages *necessarily* must possess one of these two types of second-level connections. In fact, Owner’s extrinsic evidence indicates the opposite—that the term “package” should not be limited to such a narrow interpretation.

The passages quoted by Owner in the main brief contain various qualifiers that indicate a chip package does not necessarily have to possess such second-level connections. PO App. Br. 9 (citing Tummula Fundamentals,³ “*In general*, IC packages can be classified into two categories: 1) through-hole, and 2) surface mount.”) (emphasis added).

³ FUNDAMENTALS OF MICROSYSTEMS PACKAGING, 67 (Tummula ed., 2001).

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PO App. Br. 9–10 (citing the Tummula Handbook,⁴ “There are two *basic* types of connections between the first- and second-level packages: those with pins, requiring plated-through-hole (PTH), and others with pins or pads meant for surface mounting the device (SMD) by the use of Surface Mounting Technology (SMT).”) (emphasis added). PO App. Br. 10 (citing Pecht,⁵ “The external connections of a chip carrier serve to classify the component into one of the two *major* technological categories: through hole components (THC) and surface mount components.”) (emphasis added).

Additional extrinsic evidence cited by Owner, but not expressly quoted in the main brief, also supports the conclusion that a “package” need not necessarily have a through-hole or surface mount second-level connection. For example, Owner cites an industry standard issued by the Electronic Industries Alliance JEDEC Solid State Technology Association. PO App. Br. 6 (citing JEDEC Standard JESD99A (Feb. 2000), “Terms, Definitions, and Letter Symbols for Microelectronic Devices”). This JEDEC standard includes the following entry: “**package (of a semiconductor device):** An enclosure for one or more semiconductor chips (dice), film elements, or other components, that allows electrical connection and provides mechanical and environmental protection.” JEDEC Standard JESD99A, p. 1–28.

This definition provides clear evidence that the meaning of the term “package” is not limited to chip assemblies that possess either through-hole

⁴ MICROELECTRONICS PACKAGING HANDBOOK, 42 (Tummula et al. eds., 1989).

⁵ HANDBOOK OF ELECTRONIC PACKAGE DESIGN, 4 (Pecht ed. 1991).

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mounting or surface mounting as a means of providing second level mechanical and electrical connection to a printed circuit board. Rather, this industry definition indicates that the meaning of “package” is broader—it may refer to chip assemblies that possess any type of second-level connection mechanism. In fact, this industry definition provides evidence that a package need not even necessarily include any second-level connection at all. According to this definition, the term “package” would include chip assemblies that do not possess any second-level electrical connection, such as is the case for a Radio Frequency Identification (RFID) tag, which communicates with external devices wirelessly.

Owner additionally cites to the definition of “package” as set forth by the Harper Dictionary:⁶

Package (1) An enclosure for electronic components and hybrid circuits consisting of a header, a lid, and hermetically sealed feedthrough terminal leads. Packages are made of metal, ceramic, and plastic. (2) An enclosure or housing used to contain any level of electronic system or subsystem.

Harper, p. 138 (cited by PO App. Br. 7).

Neither of Harper’s definitions requires that a second level connection be made to a PCB specifically by means of a through-hole mounting or surface mounting technique. Moreover, the second definition, which is broader than the first, does not even require that the package possess second-level connections.

⁶ Charles A. Harper, ed., *ELECTRICAL PACKAGING AND INTERCONNECTION HANDBOOK*, 3d, McGraw-Hill (1993).

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To summarize, it is immaterial whether the narrow interpretation of “package” urged by Owner might constitute a commonly accepted definition, or even constitute the most commonly accepted definition. In reexamination proceedings, the Board is to give claims their broadest reasonable interpretation, consistent with the specification. *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed Cir. 1984). The extrinsic evidence indicates that under the broadest reasonable interpretation, a chip package need not possess a second-level connection to a printed circuit board that is made specifically by either through-hole mounting or surface mounting. Rather, a package may be connected to an external component such as a wiring board or printed circuit board by any electro-mechanical connection means.⁷ Accordingly, Owner has not established that the Examiner’s interpretation of the claim term “package” was improper. As such, Owner has not established that the Examiner erred finding that van Halteren discloses a package, as recited in the claims.

We are likewise unpersuaded by Owner’s argument that we should give deference to the narrow interpretation of “package” that the Federal Circuit adopted. Tr. 6. While the Board has fully considered the Circuit Court’s claim constructions, precedent makes clear that the USPTO is not bound in reexamination proceedings by claim constructions produced by a court. *In re Trans Texas Holdings Corp.*, 498 F.3d 1290, 1301 (2007). *See also* Tr. 8 (wherein Owner’s Counsel acknowledges that the Circuit Court’s

⁷ In fact, the extrinsic evidence additionally seems to indicate that a chip package need not even possess any second-level connection at all. However, we need not reach this finding to resolve the present appeal.

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interpretation of “package” is not binding on the Board). As noted above, in reexamination proceedings, the Board is to give claims their broadest reasonable interpretation, consistent with the specification. *In re Yamamoto*, 740 F.2d at 1571. This standard differs from the standard that was followed by the court. *See* Tr. 8 (wherein Owner’s Counsel acknowledges that the relevant standard before the Circuit Court on appeal from the decision of the International Trade Commission is the narrower District court standard—not the broadest-reasonable-interpretation standard). Accordingly, we disagree with the Patent Owner that “the Examiner must address and apply MEMS Technology’s interpretation of the claim term package and conclusions regarding the Baumhauer reference.” Amended Submission, August 18, 2015, page 1. Under these circumstances, Owner’s request for remand of this proceeding to the Examiner (*id.*) is unnecessary and therefore denied.

II.

Owner additionally argues that van Halteren does not anticipate newly added claims 23–27 because, in addition to not disclosing a package (which we addressed in Section I, above), “[van Halteren] lacks the requisite ‘solder pads’ element. *See also* §7.2.1.1 [of Owner’s Appeal Brief] (addressing unsuitability of van Halteren’s ‘contact pads’ for use as ‘solder pads.’).” PO App. Br. 22, fn 44 [sic: 4].

In view of our having already sustained the rejection of newly added claims 23–27 under 35 U.S.C. § 112, ¶ 1, we need not reach this remaining argument. *See In re Gleave*, 560 F.3d 1331, 1338 (Fed. Cir. 2009) (not reaching other rejections after upholding an anticipation rejection); *see also Beloit Corp. v. Valmet Oy*, 742 F.2d 1421 (Fed. Cir. 1984) (ITC can decide a

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single dispositive issue of numerous resolved by the presiding officer; there is no need for the Commission to decide all issues decided by the presiding officer). We likewise do not reach any of the other remaining art-based rejections.

We instead sustain the Examiner's 102(b) anticipation rejection over van Halteren only with respect to claims 1–4.

DECISION

The Examiner's decision rejecting claims 1–4 and 23–27 is affirmed.

In the event neither party files a request for rehearing within the time provided in 37 C.F.R. § 41.79, and this decision becomes final and appealable under 37 C.F.R. § 41.81, a party seeking judicial review must timely serve notice on the Director of the United States Patent and Trademark Office. *See* 37 C.F.R. §§ 90.1 and 1.983.

AFFIRMED

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