

**United States Court of Appeals
for the Federal Circuit**

KNOWLES ELECTRONICS LLC,
Appellant

v.

**CIRRUS LOGIC, INC., CIRRUS LOGIC
INTERNATIONAL (UK) LTD.,**
Appellees

2016-2010

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in Nos. 95/000,509,
95/001,251, 95/001,363.

Decided: March 1, 2018

RICHARD L. RAINEY, Covington & Burling LLP, Wash-
ington, DC, argued for appellant. Also represented by
CYRIL DJOUKENG, BRIAN GERARD BIELUCH, MICHAEL S.
SAWYER.

NATHAN R. SPEED, Wolf, Greenfield & Sacks, PC,
Boston, MA, argued for appellees. Also represented by
JUSTIN COLANNINO, RICHARD GIUNTA, MARC S. JOHANNES.

Before NEWMAN, WALLACH, and CHEN, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge WALLACH*.

Dissenting opinion filed by *Circuit Judge NEWMAN*.

WALLACH, *Circuit Judge*.

Appellant Knowles Electronics, LLC (“Knowles”) appeals the inter partes reexamination decision on appeal of the U.S. Patent and Trademark Office’s (“USPTO”) Patent Trial and Appeal Board (“PTAB”) affirming an examiner’s rejection of claims 1–4 of U.S. Patent No. 6,781,231 (“the ’231 patent”) for anticipation and proposed claims 23–27 for lack of an adequate written description.¹ *Cirrus Logic, Inc. v. Knowles Elecs. LLC (Cirrus I)*, No. 2015-004342, 2015 WL 5272691, at *2–3 (P.T.A.B. Sept. 8, 2015); see *Cirrus Logic, Inc. v. Knowles Elecs. LLC (Cirrus II)*, No. 2015-004342, 2016 WL 1378707, at *1–2 (P.T.A.B. Apr. 5, 2016) (denying request for rehearing).

Knowles appeals. We have subject matter jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (2012). We affirm.

BACKGROUND

The ’231 patent, entitled “Microelectromechanical System Package with Environmental and Interference Shield,” discloses microelectromechanical system (“MEMS”) packages comprising a substrate, a microphone, and a cover accommodating the microphone. ’231 patent, Abstract. The MEMS packages shield the microphone from an interference signal or an environmental condition, *id.* col. 1 ll. 38–41, and purportedly improve over the prior art’s drawbacks “associated with manufac-

¹ Claims 23–27 were proposed as additions to the ’231 patent and repeatedly amended during the inter partes reexamination. See, e.g., J.A. 614–15, 2800–01, 3886–87.

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turing these housings, such as lead time, cost, and tooling,” *id.* col. 1 ll. 30–32.

The instant appeal concerns claims 1–4 and proposed claims 23–27 of the ’231 patent. Independent claim 1 is illustrative of the invention and recites:

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 microelectromechanical system microphone wherein the housing provides protection from an interference signal.

Id. col. 5 ll. 12–25 (emphasis added). Claims 2–4 also recite a “package.” *See id.* col. 5 ll. 26, 39, 53. Proposed claims 23–27 recite a package with a “lower surface comprising a plurality of solder pads” that is “configured to mechanically attach and electrically connect the [MEMS] package” to a printed circuit board “using a *solder reflow process*.” J.A. 3886 (emphasis added); *see* J.A. 3886–87.

DISCUSSION

Knowles raises three primary arguments on appeal. First, Knowles argues that “the [PTAB]’s rejection of the potentially most commonly accepted definition of ‘package,’ and corresponding invalidity finding, requires reversal” as to claims 1–4. Appellant’s Br. 45 (capitalization and alterations omitted); *see id.* at 45–63.² Second, Knowles argues that “the [PTAB]’s written description analysis requires reversal” as to the PTAB’s rejection of proposed claims 23–27. *Id.* at 63 (capitalization and alterations omitted); *see id.* at 63–74. Finally, Knowles contends that “the record does not establish that the [Appellees] are proper parties.” *Id.* at 75 (capitalization omitted); *see id.* at 75–79. After articulating the applicable standard of review and legal standards, we address Knowles’s arguments in turn.

I. Claim Construction in Claims 1–4

A. Standard of Review and Legal Standard

“We review the [PTAB]’s ultimate claim construction in a reexamination de novo.” *In re CSB-Sys. Int’l, Inc.*, 832 F.3d 1335, 1340 (Fed. Cir. 2016) (citing, inter alia, *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 840–41 (2015)). A patent’s specification, together with its prosecution history,³ constitutes intrinsic evidence to

² Knowles also argues that the PTAB erred in finding claims 1–4 anticipated by the prior art. *See* Appellant’s Br. 61–63. However, Knowles’s anticipation arguments are primarily premised on its proposed construction of “package,” *see id.*, which we decline to adopt. We have considered the remaining arguments, but do not find them persuasive.

³ A patent’s prosecution history “consists of the complete record of the proceedings before the [US]PTO,”

which the PTAB gives priority when it construes claims. *See Microsoft Corp. v. Proxyconn, Inc.*, 789 F.3d 1292, 1297–98 (Fed. Cir. 2015). We review the PTAB’s assessment of intrinsic evidence de novo. *See id.* When the PTAB “look[s] beyond the patent’s intrinsic evidence and . . . consult[s] extrinsic evidence,” such as expert testimony, dictionaries, and treatises, *Teva*, 135 S. Ct. at 841, those underlying findings amount to factual determinations that we review for “substantial evidence,” *Microsoft Corp.*, 789 F.3d at 1297 (citation omitted). Substantial evidence means such “relevant evidence [that] a reasonable mind might accept as adequate to support a conclusion.” *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938) (citations omitted). “If the evidence in record will support several reasonable but contradictory conclusions,” we “will not find the [PTAB’s] decision unsupported by substantial evidence simply because the [PTAB] chose one conclusion over another plausible alternative.” *In re Jolley*, 308 F.3d 1317, 1320 (Fed. Cir. 2002).

“During reexamination proceedings of unexpired patents . . . the [PTAB] uses the broadest reasonable interpretation [(“BRI”)] consistent with the specification standard . . .” *In re CSB-Sys.*, 832 F.3d at 1340 (internal quotation marks and citation omitted); *cf. Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–45 (2016) (acknowledging the PTAB’s use of BRI during reexamination). “Accordingly, this court reviews the reasonableness of the [US]PTO’s disputed claim term interpretations.” *In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004) (internal

which provides “evidence of how the [US]PTO and the inventor understood the patent.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc) (citations omitted).

quotation marks and citation omitted). However, “[e]ven under the [BRI], the [PTAB’s] construction cannot be divorced from the specification and the record evidence . . . and must be consistent with the one that those skilled in the art would reach.” *Microsoft Corp.*, 789 F.3d at 1298 (internal quotation marks and citations omitted).

B. The PTAB Properly Construed the Term “Package” in Claims 1–4

Knowles makes several arguments for why the PTAB’s construction of “package” in the preamble of claim 1 of the ’231 patent is incorrect.⁴ The PTAB found that, under the BRI, a “package” “may refer to chip assemblies that possess any type of second-level connection mechanism.” *Cirrus I*, 2015 WL 5272691, at *11; see *Cirrus II*, 2016 WL 1378707, at *4 (“[T]he Panel explained why the [BRI] of ‘package’ included, but was not limited to, packages produced from [Knowles’s] two [proposed] mounting methods.” (citation omitted)).⁵ On appeal, Knowles con-

⁴ The PTAB correctly found the preamble term “package” limiting. See *Cirrus I*, 2015 WL 5272691, at *10. A preamble is limiting when it “recit[es] additional structure or steps underscored as important by the specification.” *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002) (citations omitted). The parties do not contest this finding.

⁵ Knowles notes that the PTAB used conflicting language on whether it construed the term “package” to include assemblies without a second-level connection. See Appellant’s Br. 45–46. Compare *Cirrus I*, 2015 WL 5272691, at *11 (“[T]his industry definition provides evidence that a package need not even necessarily include any second-level connection at all.”); *id.* (similar), *with id.* at *12 n.7 (“[T]he extrinsic evidence additionally seems to indicate that a chip package need not even possess any

tends that the term “package” should be construed to mean an assembly that “requires a second-level connection with a mounting mechanism.” Appellant’s Br. 47. Thus, Knowles disagrees with the PTAB’s construction, which does not limit the “connection” to one that uses a “mounting mechanism.”⁶

Claims 1–4 do not specify the type of connection required to form the MEMS package. *See* ’231 patent col. 5

second-level connection at all. However, we need not reach this finding to resolve the present appeal.”). Because the PTAB’s final and most definitive statement is that it “need not reach” the question of second-level connectivity, *id.* at *12 n.7, we understand the PTAB not to have decided whether the definition of “package” includes fewer than two levels of connectivity.

⁶ Knowles argued before the PTAB that the term “package” required a second-level connection “by either through-hole mounting or surface mounting.” *Cirrus I*, 2015 WL 5272691, at *10. Knowles appears to make the same arguments on appeal, though it at times uses the general term “mountable.” *See, e.g.*, Appellant’s Br. 50 (stating the submitted extrinsic evidence shows that persons having ordinary skill in the art (“PHOSITA”) “recognized two categories of mounting types for microelectronics packages to form second-level connections, through-hole and surface mount”), 53, 59, 63 (using the term “mountable”); Reply Br. 10 (discussing evidence showing all packages are classified as “through hole” or “surface mount” (citations omitted)). We consider only the construction Knowles presented to the PTAB because “[a]bsent exceptional circumstances, we generally do not consider arguments that the applicant failed to present to the [PTAB].” *In re Baxter Int’l, Inc.*, 678 F.3d 1357, 1362 (Fed. Cir. 2012) (internal citations omitted).

ll. 12–67. The '231 patent's specification similarly does not limit the type of connection to one that is mountable or any specific form of mount. *See, e.g., id.* col. 3 ll. 4–7 (“The embodiment disclosed herein . . . would *typically* be mounted . . .” (emphasis added)), col. 3 ll. 19–20 (describing the package to include “surface mountable components” without detailing the means of required connection with an external mechanism), col. 4 ll. 3–4 (describing general “electrical connection” of the substrate). Moreover, the parties do not identify any disclosures in the prosecution history that would aid in the construction of the term.

Because intrinsic evidence is not definitive, we turn to extrinsic evidence. *See Phillips*, 415 F.3d at 1319 (allowing courts to look to extrinsic evidence after reviewing intrinsic evidence to better understand the field of the invention and the meaning of a term to a PHOSITA). Knowles asks the court to look only at certain dictionary and treatise references describing common categories for mounting in MEMS to form second-level connections. *See Appellant's Br.* 50–52. However, as the PTAB correctly noted, many references suggested by Knowles use qualifying language, thereby implying second-level connections in circuit boards may not be properly limited to the two types of mounts proffered by Knowles. *See Cirrus I*, 2015 WL 5272691, at *11 (quoting *Fundamentals of Microsystems Packaging* 67 (Rao R. Tummala ed., 2001) (J.A. 2833) (“*In general*, . . . packages can be classified into two categories: 1) through-hole, and 2) surface mount.”) (emphasis added)); *id.* (quoting *Microelectronics Packaging Handbook* 42 (Rao R. Tummala et al. eds., 1989) (J.A. 2847) (“There are two *basic* types of connections . . .”) (emphasis added)); *id.* (quoting *Handbook of Electronic Package Design* 4 (Michael Pecht ed., 1991) (J.A. 2842) (“The external connections of a chip carrier serve to classify the component into one of the two *major* technological categories . . .”) (emphasis added)). Moreo-

ver, Knowles provided additional extrinsic evidence that supports the PTAB's determination that a package need not be confined to certain types of second-level connection mounts. *See Cirrus I*, 2015 WL 5272691, at *11–12 (reviewing Electronic Industries Alliance JEDEC Standard defining package as “[a]n enclosure . . . that allows electrical connection and provides mechanical and environmental protection” (J.A. 637–38), and a technical dictionary definition defining package as, inter alia, “an enclosure . . . used to contain any level of electronic system or subsystem” (J.A. 642–43)).

Knowles does not contest that the references cited by the PTAB allow for means of connectivity beyond surface and through-hole mounts. Instead, Knowles argues that the PTAB impermissibly “simply select[ed] the broadest definition” cited by the parties to arrive at its claim construction. Appellant's Br. 55 (quoting *PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 747, 752 (Fed. Cir. 2016)). That is incorrect. The PTAB reviewed all extrinsic evidence, including evidence proffered by Knowles, and found no evidence that the definition was limited to surface or through-hole mounting. Unlike *PPC Broadband*, where the PTAB failed to consider evidence “in light of the specification” and “claims themselves,” 815 F.3d at 752, Knowles admitted that the claims and specification did not offer a definition for package that would inform a PHOSITA as to its favored interpretation, *see* J.A. 4152 (“[The '231 patent] . . . does not offer a concise dictionary definition of the term.”), 6907 (similar). Therefore, the PTAB properly considered extrinsic evidence, and we see no error in the PTAB's claim construction based on this extrinsic evidence.

Knowles additionally argues that “[t]he [PTAB] should have read *MEMS Technology* and concluded that a ‘package’ requires a ‘self-contained unit[.]’ . . . and that this unit must be ‘mountable.’” Appellant's Br. 53 (citing

MEMS Tech. Berhad v. Int'l Trade Comm'n, 447 F. App'x 142 (Fed. Cir. 2011)). This is so, Knowles avers, because the PTAB has an obligation to “evaluate a previous judicial interpretation of disputed claims ‘and to determine whether it is consistent with the [BRI] of the term.’” *Id.* at 59 (alteration omitted) (quoting *Power Integrations, Inc. v. Lee*, 797 F.3d 1318, 1327 (Fed. Cir. 2015)). We disagree with the premise of Knowles’s argument suggesting that the PTAB’s claim construction conflicts with *MEMS Technology*. In *MEMS Technology*, we upheld the International Trade Commission’s construction of the term “package” in the ’231 patent’s preamble to mean “a self-contained unit that has two levels of connection, to the device and to a circuit (or other system).” 447 F. App'x at 159; *see id.* (affirming the ITC’s rejection of an anticipation claim because the disputed prior art “does not disclose first and second levels of electrical connection”). Thus, the claim construction in *MEMS Technology* did not require that a package be mounted via surface or through-hole mounts, such that even if we were to look to *MEMS Technology*, we would find no inconsistency with the PTAB’s construction of the claim term “package” here.

Further, Knowles argues that this court’s construction in *MEMS Technology* differed from the PTAB’s below because in *MEMS Technology* we stated “[t]he requirement that the components listed in the claim body come together to form a mountable package is . . . an important characteristic of the claimed invention.” *Id.* at 154 (internal quotation marks and citation omitted); *see* Appellant’s Br. 59–61. We made this statement in the context of finding that the preamble was a claim limitation, *see Catalina Mktg.*, 289 F.3d at 808 (stating preambles may be limiting if they “recit[e] additional structure or steps underscored as important by the specification”), not in the context of construing the term’s disputed meaning. Later in the opinion, we applied the ITC’s construction that a package “is a self-contained unit that has two levels of

connection, to the device and to a circuit (or other system).” *MEMS Tech.*, 447 F. App’x at 159. “We will not find legal error based upon an isolated statement stripped from its context.” *VirnetX Inc. v. Apple Inc.*, 665 F. App’x 880, 886 (Fed. Cir. 2016). We fail to see how the definition of package adopted by the PTAB below does not accord with the definition adopted in *MEMS Technology*. Neither definition limited the two levels of connection to surface or through-hole mounting. In sum, we find that the PTAB properly construed the claim term “package.”

II. Written Description in Proposed Claims 23–27

A. Standard of Review and Legal Standard

“The [PTAB]’s determination that a patent claim is unpatentable for insufficient written description support is a question of fact that we review for substantial evidence.” *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331, 1344 (Fed. Cir. 2016). According to 35 U.S.C. § 112 ¶ 1 (2006),⁷ “[t]he specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any [PHOSITA] to which it pertains . . . to make and use the same.” The written description “must clearly allow [a PHOSITA] to recognize that the inventor invented what is claimed.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed.

⁷ Congress amended § 112 when it enacted the Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, § 4(c), 125 Stat. 284, 296–97 (2011), and AIA § 4(e) made those changes applicable to “any patent application that is filed on or after” September 16, 2012, *see* 125 Stat. 296–97. Because the application that led to the ’231 patent was filed before September 16, 2012, the pre-AIA § 112 applies.

Cir. 2010) (en banc) (internal quotation marks and brackets omitted). “[A] description which renders obvious a claimed invention is not sufficient to satisfy the written description requirement of that invention.” *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1567 (Fed. Cir. 1997). “[T]he hallmark of written description is disclosure. . . . [T]he test requires an objective inquiry into the four corners of the specification from the perspective of a [PHOSITA].” *Ariad*, 598 F.3d at 1351.

B. Substantial Evidence Supports the PTAB’s Lack of Adequate Written Description Determination as to Proposed Claims 23–27

Proposed claims 23–27 of the ’231 patent recite a MEMS package 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.” J.A. 3886; *see* J.A. 3886–87. The PTAB determined that proposed claims 23–27 failed to meet the written description requirement, because “the present [s]pecification merely discloses a genus—solder pads that are capable of being connected to a board. But the [s]pecification fails completely to disclose the newly claimed species of such pads—pads that are connectable to a board specifically by using a reflow process.” *Cirrus I*, 2015 WL 5272691, at *8. Knowles argues that the PTAB “fail[ed] to consider the extensive extrinsic and full intrinsic evidence” detailing how a PHOSITA would understand that solder pads were capable of attachment via reflow, Appellant’s Br. 72; *see id.* at 71, and that the PTAB improperly considered “other methods of soldering” in its analysis, *id.* at 73. We disagree with Knowles.

Substantial evidence supports the PTAB’s determination that the specification does not provide adequate written description to allow a PHOSITA to recognize that the inventor invented what is claimed. As an initial matter, Knowles does not contend that the specification

identifies the “solder reflow process” as a means of connecting solder pads to the circuit board. The ’231 patent’s specification states that the “substrate . . . further comprises solder pads 31 for electrical connection to an end user’s board.” ’231 patent col. 4 ll. 2–4. The specification’s only other reference to solder pads states that “the leads are formed by plating a through-hole in a circuit board of which one half will eventually form the pathway to the solder pad.” *Id.* col. 3 ll. 12–14. The specification thus does not require solder pads to connect to the circuit board by any particular process, including the solder reflow process. Moreover, Knowles does not contest that other processes for attaching solder pads were known in the art at the time of the invention and submitted as evidence before the PTAB, and those processes could have been used to form the complete circuit board according to the details in the specification. *See* Appellant’s Br. 71–73 (recognizing other methods of soldering); J.A. 656–86, 2534–42 (same); *see also Cirrus I*, 2015 WL 5272691, at *7 (“We instead find that solder reflow is but one of multiple specific methods or species for connecting solder pads to a printed circuit board.”). Substantial evidence thus supports the PTAB’s determination that the ’231 patent fails to provide adequate written description for the reflow process limitation.

Knowles’s counterarguments are unpersuasive. First, Knowles contends that the PTAB disregarded “the state of the art at the time of filing” and “prior art knowledge” that would have demonstrated that a PHOSITA knew solder pads were “intended to be capable of reflow attachment to a user’s board.” Appellant’s Br. 65, 66 (quoting *Ariad Pharm.*, 598 F.3d at 1358); *see id.* at 66–67 (listing prior art references that disclose solder reflow as a well-known process of connecting mount devices). Knowles misunderstands the PTAB’s analysis. The PTAB acknowledged that solder reflow was a process of connecting a board to a solder pad but found that other processes

of connection existed in the prior art. Therefore, the '231 patent's specification, detailing only the broad idea of solder pads connected to the circuit board, "fail[e]d completely to disclose the newly claimed species of such pads—pads that are connectable to a board specifically by using a reflow process." *Cirrus II*, 2016 WL 1378707, at *7; *see Cirrus I*, 2015 WL 5272691, at *8. The parties presented conflicting views of the knowledge of a PHOSITA and disputed whether such a person would have understood solder reflow to be the only (or even the primary) way to connect solder pads to a printed circuit board. Given these uncertainties and at best a passing reference to solder pads in the specification, the PTAB reasonably found that a PHOSITA would not have recognized that the inventor possessed solder pads "configured to" connect to a printed circuit board through a reflow process.

Second, Knowles states that the specification's description of the solder pads "on the bottom of the inventor's package" would make clear to a PHOSITA that the pads would necessarily attach to a user's board via solder reflow. Appellant's Br. 69; *see id.* at 68–70. The PTAB reviewed Knowles's arguments and found them unpersuasive because Knowles did not contend that the specification necessarily disclosed a solder reflow process. *Cirrus I*, 2015 WL 5272691, at *7 (citing J.A. 5199–201); *see* J.A. 5201 (stating, in Knowles's brief to the PTAB, only that solder pads located on the bottom of the substrate "could use" the solder reflow process); *see also Cirrus II*, 2016 WL 1378707, at *6–7 (finding Knowles's arguments that solder pads "on the bottom" of the package would be used to mount a device through solder reflow "not persuasive" because, inter alia, the consideration for adequate written description asks what the applicant conveyed with reasonable clarity, and the '231 patent "failed to even mention, much less spell out *any* detail of, the claimed reflow process").

Knowles on appeal similarly fails to present evidence on the location of the pads sufficient to render the PTAB's findings unsupported. Knowles cites the single line of the specification disclosing solder pads generally, Appellant's Br. 69 (citing '231 patent col. 4 ll. 2-4), Figure 3 of the '231 patent showing the location of solder pads, *id.*, and a line from the specification that the inventor chose package elements to achieve "a better match of thermal coefficients," *id.* (quoting '231 patent col. 3 ll. 4-8). As we stated above, the single line disclosure of solder pads in the specification is insufficient to disclose the claimed solder reflow process. Moreover, the line discussing "thermal coefficients" relates to the material used for connecting the package to a circuit board and, without more, does not disclose any particular means of connection for the solder pads. Knowles cites to a line in the specification that the disclosed package will produce a "smaller" footprint than typical models that use a "gull wing configuration" because the "leads are formed by plating a through-hole in a circuit board of which one half will eventually form the pathway to the solder pad." '231 patent col. 3 ll. 12-16; *see* Appellant's Br. 69. Again, this description does not mention solder reflow, and Knowles has not presented evidence that through-hole plating is commonly understood to include solder reflow. *See* Appellant's Br. 50-52, 66-67 (distinguishing through-hole plating from surface mounting and arguing that solder reflow is a type of surface mounting). *See generally id.* For these reasons, we are not persuaded by Knowles's argument. *See Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) ("It is not sufficient for purposes of the written description requirement of § 112 that the disclosure, when combined with the knowledge in the art, would lead one to speculate as to the modifications that the inventor might have envisioned, but failed to disclose.").

Finally, Knowles alleges that the PTAB incorrectly required that the specification disclose a “process” of solder reflow for “apparatus claims.” Appellant’s Br. 73, 74. Knowles cites *Microprocessor Enhancement Corp. v. Texas Instruments*, to argue that the correct legal standard for finding an adequate written description of an apparatus claim asks only whether the apparatus is “capable of performing the recited functions.” *Id.* at 74 (citing 520 F.3d 1367, 1375 (Fed. Cir. 2008)). Knowles’s cited portion of *Microprocessor* is not an analysis of the written description requirement under § 112; rather, it relates to whether a claim term used repeatedly in a patent’s claims was “insolubly ambiguous,” rendering the claims indefinite under the standard then applicable. 520 F.3d at 1374; *see Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014) (describing change in the standard). These statements simply do not apply here.

Because the PTAB correctly identified and applied the applicable legal standard for lack of written description as recited by this court in *Enzo Biochem, Inc. v. Gen-Probe Inc.*, and its progeny, *see Cirrus II*, 2016 WL 1378707, at *6 (citing 323 F.3d 956, 969 (Fed. Cir. 2002), and explaining that “[t]he test for whether an applicant’s specification contains adequate written description for the claimed subject matter is whether applicant conveyed with reasonable clarity to those skilled in the art that, as of the filing date sought, applicant was in possession of the invention”); *Cirrus I*, 2015 WL 5272691, at *6–8 (discussing *Enzo* and subsequent written description cases), we see no reason to disturb the PTAB’s holding on this basis.

III. Third-Party Requesters

The original petitions for inter partes reexamination in this case were filed by three third-party requesters. *See Cirrus I*, 2015 WL 5272691, at *1. Two of the three third-party requesters dropped out of the case on appeal.

See Non-Participation Letter from Analog Devices, Inc., ECF No. 3; Change of Caption to Remove BSE Co., Ltd., ECF No. 18. The third, Wolfson Microelectronics plc. (“Wolfson”), was replaced by Cirrus Logic, Inc. and Cirrus UK Ltd. (together, “the Cirrus entities”) as real parties-in-interest. See J.A. 14374–76 (Notice of Change in Real Party-in-Interest), 14418–20 (Supplemental Notice of Change in Real Party-in-Interest). Before the PTAB, the Cirrus entities were added as parties of record midway through proceedings but denied their request to participate in the oral hearing for the request to rehear *Cirrus I* based on untimely filing. J.A. 14434–41. The decision denying participation at the oral hearing further stated that, if the Cirrus entities chose to attend the hearing, the panel would have discretion to “ask [the Cirrus entities] any questions that they may have with regard to either the appeal or the Notice of Change in real party-in-interest.” J.A. 14440.

In contesting the Cirrus entities’ tardy request to participate in the oral hearing, Knowles, among other things, questioned whether the Cirrus entities were a proper party to the proceeding. J.A. 14409–14 (Opposition to Cirrus[s] Petition to Waive or Suspend Rules); see J.A. 14411 (“[The Cirrus entities] filing does not explain how the Cirrus [e]ntities are entitled to take over for the Requester, Wolfson . . .”). Although the PTAB did not allow the Cirrus entities to participate in the oral hearing based on their untimely filing, see J.A. 14439, the PTAB allowed the overall change in real party-in-interest for the case to proceed without comment.⁸ Before the PTAB,

⁸ “Generally, the [USPTO] will not look beyond the required statement identifying the real party in interest,” but if the statement is ambiguous or inaccurate, “[a] persuasive response . . . that asserts that the request

Knowles only contested the Cirrus entities' participation at the oral hearing, not the decision to add the Cirrus entities to the inter partes reexamination. *See* Oral Arg. at 19:57–20:10, <http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2016-2010.mp3> (“The best argument I have on that . . . is I believe my client feels like it raised the objection below and at the first instance here on appeal we raised the objection.”); *see also id.* at 18:53–19:23 (“[The Cirrus entities were not] permitted to participate at the oral argument. I guess our view was by that time we had prevailed on the issue of whether or not they could participate To us, it had been decided in our favor . . . that seems like a decision on the merits . . . that they weren't the proper party in the case.”). Although Knowles now argues that it was not allowed to contest the entry of appearance below, *id.* at 18:23–52, Knowles offers no evidence to support this statement. Only after the PTAB issued its decision on appeal and denial of a request for rehearing, and Knowles appealed to this court, did Knowles challenge the entry of the Cirrus entities as proper parties to the case. *See* Order, ECF No. 32 (denying Knowles's motion to remand the case for additional proceedings on the question of real parties-in-interest). As such, we find this argument waived.⁹ *See Singleton v. Wulff*, 428 U.S. 106, 120 (1976).

named the proper real party . . . would establish that as filed, there was no facial inaccuracy or ambiguity in such identification.” *In re Guan*, No. 95/001,045, 2008 WL 10682851, at *7 (P.T.A.B. May 26, 2008). The Cirrus entities appear to have complied with these requirements, as the USPTO never sought further clarification.

⁹ Because we decline to review this argument, we deny Knowles's motion to strike, pursuant to Federal Circuit Rule 27(e), all references to extra-record materials

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CONCLUSION

We have considered Knowles's remaining arguments and find them unpersuasive. Accordingly, the Decision on Appeal of the U.S. Patent and Trademark Office's Patent Trial and Appeal Board is

AFFIRMED

COSTS

No costs.

in the Cirrus entities' brief, argument, and appendix. *See* Reply Br. 34.

**United States Court of Appeals
for the Federal Circuit**

KNOWLES ELECTRONICS LLC,
Appellant

v.

**CIRRUS LOGIC, INC., CIRRUS LOGIC
INTERNATIONAL (UK) LTD.,**
Appellees

2016-2010

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. 95/000,509, 95/001,251, 95/001,363.

NEWMAN, *Circuit Judge*, dissenting.

I write in concern for perpetuation of the erroneous position that the PTAB need not apply the prior final judicial decision of the same issue of the same claims of the same patent.¹ This error not only produces an incorrect result in this case, but will further impart uncertain-

¹ *Cirrus Logic Inc. v. Knowles Elecs. LLC*, No. 15-4342, 2015 WL 5272691 (P.T.A.B. Sept. 8, 2015) (“PTAB Op.”); *Cirrus Logic Inc. v. Knowles Elecs. LLC*, No. 15-4342, 2016 WL 1378707 (P.T.A.B. Apr. 5, 2016) (“PTAB Rehearing Op.”).

ty to proceedings under the America Invents Act. The purpose whereby the PTAB was created as an agency tribunal, in order to provide stable law and economical determination of patent validity, is negated when final adjudication in a court of last resort may be ignored, and the issue litigated afresh in the agency tribunal.

The Supreme Court has recognized, “courts may take it as given that Congress has legislated with the expectation that the principle [of issue preclusion] will apply except when a statutory purpose to the contrary is evident.” *B & B Hardware, Inc. v. Hargis Indus., Inc.*, 135 S. Ct. 1293, 1303, 1305–06 (2015) (alteration in original) (quoting *Astoria Fed. Sav. & Loan Ass’n v. Solimino*, 501 U.S. 104, 108 (1991)). A prior judicial decision resolving the same issue is accorded preclusive effect not only in subsequent court proceedings but also before an administrative agency, subject only to the established equitable and due process exceptions to preclusion.

However, the PTAB stated that “precedent makes clear that the USPTO is not bound in reexamination proceedings by claim constructions produced by a court.” PTAB Op. *12. While precedent has previously addressed the effect of a prior district court claim construction on a subsequent PTO proceeding, never before has a final claim construction by this court been held not to be preclusive.

Here the claim construction was decided by the Federal Circuit, as a matter of law, in *MEMS Technology Berhad v. International Trade Commission*, 447 F. App’x 142 (Fed. Cir. 2011). No equitable or due process exception to issue preclusion is here asserted; thus preclusion should apply. The majority declines to discuss this question, which is presented on this appeal. By this silence, my colleagues are reinforcing this incorrect position. I respectfully dissent.

Federal Circuit Decisions on the Same Patent Should Apply in Subsequent PTAB Proceedings

The PTAB states that “precedent makes clear that the USPTO is not bound in reexamination proceedings by claim constructions produced by a court.” PTAB Op. *12. The Federal Circuit, through silence, endorses this irregularity. However, judicial resolution of a question of law cannot be ignored. The result, as here illustrated, is duplicate proceedings in the courts and the PTO, inhibiting finality of judicial determinations in areas subject to the America Invents Act.

In this case, the PTAB declined to apply the Federal Circuit’s prior decision construing the same term of the same claims of the same patent, citing precedent that had previously been directed to district court decisions. PTAB Op. *12 (citing *In re Trans Tex. Holdings Corp.*, 498 F.3d 1290, 1301 (Fed. Cir. 2007) (“We conclude that the Board was not bound by the district court’s claim construction”)).

The panel majority declines to consider whether the PTAB is bound by the Federal Circuit’s decision on the same patent in *MEMS Technology Berhad v. International Trade Commission*, 447 F. App’x 142 (Fed. Cir. 2011). Instead, the panel majority condones the PTAB’s conduct of a full trial of the same issue, stating that this court only “reviews the reasonableness of the [US]PTO’s disputed claim term interpretations,” Maj. Op. 5, in disregard of the Federal Circuit’s prior interpretation of the same claim term in *MEMS Technology*.

The purpose of the America Invents Act is to provide a more efficient and less costly post-grant determination of certain validity issues, compared with the time and cost of court litigation. Such purpose is negated by duplicate PTO litigation of the same question after prior final judicial decision. Such duplicate proceeding is appropriately governed by the principles of collateral estoppel, as

summarized in Sections 27–29 of the Restatement (Second) of Judgments (Am. Law Inst. 1982). As discussed by the Supreme Court in *United States v. Mendoza*, the Court stated:

Under the judicially-developed doctrine of collateral estoppel, once a court has decided an issue of fact or law necessary to its judgment, that decision is conclusive in a subsequent suit based on a different cause of action involving a party to the prior litigation. *Montana v. United States*, 440 U.S. 147, 153 (1979). Collateral estoppel, like the related doctrine of res judicata, serves to “relieve parties of the cost and vexation of multiple lawsuits, conserve judicial resources, and, by preventing inconsistent decisions, encourage reliance on adjudication.” *Allen v. McCurry*, 449 U.S. 90, 94 (1980).

464 U.S. 154, 158 (1984) (footnote omitted). The Court summarized the principles of non-mutual collateral estoppel:

In furtherance of those policies, this Court in recent years has broadened the scope of the doctrine of collateral estoppel beyond its common law limits. *Ibid.* [*Allen v. McCurry*, 449 U.S. at 94.] It has done so by abandoning the requirement of mutuality of parties, *Blonder-Tongue Laboratories, Inc. v. University of Illinois Foundation*, 402 U.S. 313 (1971), and by conditionally approving the “offensive” use of collateral estoppel by a non-party to a prior lawsuit. *Parklane Hosiery [Co. v. Shore]*, 439 U.S. 322 (1979)].

Mendoza, 464 U.S. at 158.

In *Trans Texas*, on appeal from an ex parte PTO reexamination decision, this court declined to apply issue preclusion, stating that the PTO was not a party to the

district court infringement litigation where the same term was construed. 498 F.3d at 1296–98. Both *Trans Texas* and the more recent *Power Integrations* case dealt with a prior district court decision, not a prior final decision of the Federal Circuit. See *Power Integrations, Inc. v. Lee*, 797 F.3d 1318, 1326–27 (Fed. Cir. 2015) (stating that the PTAB should address but is not bound by the previous judicial claim construction).

This conflict between court decision and agency obligation raises issues of litigation and patent policy, as well as invoking the fundamentals of stare decisis and separation of powers. The adjudication of questions of patent law takes on special significance in light of the purposes of the America Invents Act. The purposes of efficiency, economy, and finality of patent review are lost when judicial determination of the same question of patentability has been completed, including appeal to and decision by the Federal Circuit—yet the decision is ignored and the proceeding repeated by the administrative agency and again appealed to the Federal Circuit; and where, as here, the Federal Circuit reaches a contrary decision.

In *B & B Hardware, Inc. v. Hargis Industries, Inc.*, 135 S. Ct. 1293 (2015), the Court approved of issue preclusion arising from a decision of the Trademark Trial and Appeal Board, in later proceedings on the same issue in a court. The Court explained reciprocity of issue preclusion, and that a court may be precluded by a prior agency decision, just as an agency is precluded by a prior court decision. The Court stated:

Both this Court’s cases and the Restatement make clear that issue preclusion is not limited to those situations in which the same issue is before two courts. Rather, where a single issue is before a court and an administrative agency, preclusion also often applies. Indeed, this Court has explained that because the principle of issue preclu-

sion was so “well established” at common law, in those situations in which Congress has authorized agencies to resolve disputes, “courts may take it as given that Congress has legislated with the expectation that the principle [of issue preclusion] will apply except when a statutory purpose to the contrary is evident.”

Id. at 1303 (alteration in original) (quoting *Astoria*, 501 U.S. at 108). These principles are recorded in the Restatement (Second) of Judgments § 83(1), stating that with limits, “a valid and final adjudicative determination by an administrative tribunal has the same effects under the rules of res judicata, subject to the same exceptions and qualifications, as a judgment of a court.” *See also id.* § 83 cmt. f (defining res judicata to include both the doctrines of claim preclusion and issue preclusion).

The Court in *B & B Hardware* further recited that a district court’s prior determination is binding in TTAB proceedings involving the same issue:

Neither is issue preclusion a one-way street. When a district court, as part of its judgment, decides an issue that overlaps with part of the TTAB’s analysis, the TTAB gives preclusive effect to the court’s judgment.

135 S. Ct. at 1305–06; *see also id.* at 1309–10 (procedural differences between TTAB proceedings and courts do not negate issue preclusion).

Nothing in the America Invents Act suggests a legislative intent to depart from this precedent, and to take the unusual step of excusing the PTO from the rules of preclusion and the effect of prior judicial determination. Here the PTAB, citing this court’s ruling in *Trans Texas*, held that no preclusion arose from the Federal Circuit’s decisions concerning the same patent in *MEMS Technology*. PTAB Op. *12. My colleagues on this panel find “no

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inconsistency with the PTAB's construction of the claim term 'package' here," Maj. Op. 10, although the constructions are dispositively inconsistent. And while *Power Integrations*, 797 F.3d at 1326–27, related to the district court's claim construction, until today no precedent has held that the Federal Circuit's claim construction has no preclusive effect.

I suggest that the "consisten[cy]" mentioned in *Power Integrations* is the wrong inquiry. The question is whether the PTAB decision is precluded by the prior judicial decision, and whether any equitable or due process exception to preclusion may apply. See *B & B Hardware*, 135 S. Ct. at 1298, 1303. Material to this determination is the purpose of the America Invents Act to provide "a quick and cost effective alternative to litigation." H.R. Rep. 112-98, pt. 1 at 48 (2011). See also *Patent Reform: The Future of American Innovation: Hearing Before the Senate Comm. on the Judiciary*, 110th Cong. 7 (2007), where PTO Director Jon W. Dudas explained the role of this proposed new agency tribunal:

The idea was that this could serve as a meaningful alternative to litigation, probably less costly, certainly before experts at the Patent and Trademark Office. We also thought that it is very important if you are going to have a second window, if you are going to have a post-grant review, that you have very real estoppel, that you have a choice between litigation and post-grant review, that we should not have a situation where we set up forum shopping or giving several bites at the apple, that there should be true estoppel.

To achieve this purpose, the AIA included the proposed estoppel whereby an agency decision would finally resolve, between the parties, certain issues previously subject only to litigation. However, when litigation has already occurred and been appealed to finality, an ensu-

ing PTAB proceeding is not only redundant—it negates the statutory purposes of efficiency, cost savings, and finality.

The issue of claim construction is a question of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 836–38, 841–42 (2015) (stating that “the ultimate question of construction will remain a legal question”); *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 390–91 (1996) (stating the “importance of uniformity in the treatment of a given patent” and “treating interpretive issues as purely legal will promote (though it will not guarantee) intrajurisdictional certainty”). Questions of law must be correctly decided, whatever the tribunal.

Collateral estoppel is naturally subject to equitable principles, including exceptions and policy considerations. *See* Restatement (Second) of Judgments §§ 28–29 (reporting “Exceptions to the General Rule of Issue Preclusion” and discussing non-mutual “Issue Preclusion in Subsequent Litigation with Others”); *see also Parklane Hosiery Co. v. Shore*, 439 U.S. 322, 329–31 (1979) (reasons of policy and equity as limits on non-mutual collateral estoppel).

A primary purpose of collateral estoppel in the patent context is the final and uniform resolution of validity issues. In *Miken Composites, L.L.C. v. Wilson Sporting Goods Co.*, the court “note[d] that the claim construction affirmed in this case is fully consistent with the interpretation given to the same limitation” in prior litigation, and that doing otherwise “would run counter to the Supreme Court’s guidance on *stare decisis* in *Markman*.” 515 F.3d 1331, 1338 n.* (Fed. Cir. 2008); *see also Key Pharm. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998) (“We do not take our task lightly in this regard, as we recognize the national *stare decisis* effect that this court’s decisions on claim construction have.”).

A purpose of the AIA is to save time and cost, not to double it. The judicial obligation is to implement the statutory purpose. Guided by the Court, both mutual and non-mutual collateral estoppel must be considered. Thus I do not join my colleagues' implicit holding that the PTAB is not bound by the final Federal Circuit decision in *MEMS Technology*, on the same term of the same claims of the same patent. Where no cogent reason to reject the prior construction of a claim term is presented, no deviation should be permitted. See *Markman*, 517 U.S. at 390–91 (recognizing the need for “uniformity in the treatment of a given patent”).

In *MEMS Technology* the Federal Circuit, on appeal of an ITC determination, construed the term “package” in the claimed microelectromechanical system as “a self-contained unit that has two levels of connection, to the device and to a circuit (or other system),” 447 F. App'x at 159, reasoning that “[t]he requirement that the components listed in the claim body come together to form a mountable package is [] an important characteristic of the claimed invention.” *Id.* at 154 (internal quotation marks omitted). The PTAB here adopted a somewhat different construction of “package,” as “requir[ing] a second-level mechanical and electrical connection,” but “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 means.” PTAB Op. *9, *12. The difference between these constructions may not appear to be large, but the PTAB's construction sufficed to hold claims 1–4 invalid on the ground of anticipation whereas the Federal Circuit's construction sustained validity on the ground of anticipation.

The panel majority holds that the PTAB “properly construed the claim term ‘package,’” and does not discuss

whether the PTAB is required to follow the prior Federal Circuit construction. Maj. Op. 10–11. Judicial finality is not so easily cast aside. On the position that collateral estoppel does not arise in patent cases, neither the patentee nor the public can rely on judicial determination of an issue that might later be taken to the PTAB. This court should recognize the significant legal and economic consequences of conflict between judicial ruling and agency decision, in which patent life and investment resources are consumed in duplicate litigation, with no reliable finality.

The America Invents Act created a unique balance of administrative process and judicial determination, in service to the public benefit of technologic advance. Achieving the optimum balance is critical. The issue of preclusion flagged herein warrants resolution.