Knowles Electronics, LLC v. Analog Devices Inc. Doc. 238

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

KNOWLES ELECTRONICS, LLC ,	)	
	)	
	)	
Plaintiff,	)	
	)	**No. 11 C 6804**
vs.	)	
	)	**Hon. Joan H. Lefkow**
ANALOG DEVICES INC.,	)	
	)	
Defendant.	)	

OPINION AND ORDER

Presently before the court is Knowles Electronics, LLC's ("Knowles") motion for reconsideration of the court's claim construction ruling. Knowles alleges that Analog Devices Inc. ("ADI") infringed*, inter alia*, claim 21 of United States Patent Number 8,018,049 (the '049 patent). Claim 21 is directed to the method of constructing a microphone package and states that construction of the package includes "attaching a plurality of package covers." The court construed this phrase to mean "attaching a layer comprising a plurality of interconnected package covers." Dkt. 118 at 3. Knowles seeks reconsideration of that ruling and requests that the court construe the phrase to mean "attaching more than one package cover." Knowles Mot. at 13. For the following reasons, Knowles' motion for reconsideration is granted.

LEGAL STANDARD

Federal Rule of Civil Procedure 54(b) states that a court may reconsider an interlocutory ruling "at any time before the entry of a judgment adjudicating all the claims and all the parties' rights and liabilities." Fed. R. Civ. P. 54(b). Motions for reconsideration serve the limited purpose to correct manifest errors of law or fact or to present newly discovered evidence. *Rothwell Cotton Co.* v. *Rosenthal & Co.*, 827 F.2d 246, 251 (7th Cir. 1987). A motion to

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reconsider serves an important function where the "court has misunderstood a party, where the court has made a decision outside the adversarial issues presented to the court by the parties, where the court has made an error of apprehension (not of reasoning), where a significant change in the law has occurred, or where significant new facts have been discovered." *Broaddus* v. *Shields*, 665 F.3d 846, 860 (7th Cir. 2011) (citing *Bank of Waunakee* v. *Rochester Cheese Sales, Inc.*, 906 F.2d 1185, 1191 (7th Cir. 1990)). The Federal Circuit has also noted that "[d]istrict courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves." *Jack Guttman, Inc.* v. *Kopykake Enter., Inc.*, 302 F.3d 1352, 1361 (Fed. Cir. 2002). Motions for reconsideration of a claim construction may be raised at any time during the proceedings. *See Bone Care Int'l, LLC* v. *Pentech Pharm., Inc.*, 08-cv-1083, 2010 WL 3023423, at *1 (N.D. Ill. July 30, 2010).

BACKGROUND

I. The '049 Patent

Claim 21 of the '049 patent is a method claim that teaches how to assemble the microphone package. The claim states,

> A method of manufacturing a silicon condenser microphone package comprising:
>
> providing a panel comprising a plurality of interconnected package substrates, where each of the plurality of package substrates comprises at least one layer of conductive material and at least one layer of non-conductive material;
>
> attaching a plurality of silicon condenser microphone dice to the plurality of package substrates, one die to each package substrate;
>
> attaching a plurality of package covers, each comprising at least one layer of conductive material, to the panel, one package cover to each of the package substrates, where attaching the plurality of package covers to the panel comprises electrically connecting the at least one layer of conductive material in the package

> cover to the at least one layer of conductive material in the corresponding package substrate to form a shield against electromagnetic interference; and
>
> separating the panel into a plurality of individual silicon condenser microphone packages.

Col. 13 ll. 34–Col. 14 ll. 18. The ’049 patent’s abstract also details the microphone package assembly: “[t]he method for manufacturing the silicon condenser microphone package involves placement of a plurality of silicon condenser microphone dies on a panel of printed circuit board material, placement of covers over each of the silicon condenser microphone dies, and then separating the panel into individual packages.” ’049 Patent Abstract.

The Detailed Description of the Invention further elucidates on the scope and the benefits of the invention. First, the Detailed Description states that the invention included multiple embodiments,

> While the invention is susceptible of embodiments in many different forms, there is shown in the drawings and will herein be described in detail several possible embodiments of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the broad aspect of the invention to the embodiments illustrated.

Col. 3 ll. 3–9.

The Detailed Description also identifies the benefits of the invention in that it was capable of mass production of microphone packages,

> The benefits of the microphone packages disclosed herein over microphone packaging utilizing plastic body/lead frames include the ability to process packages in panel form allowing more units to be formed per operation and at much lower cost. The typical lead frame for a similarly functioning package would contain between 40 and 100 devices connected together. The present disclosure would have approximately 14,000 devices connected together (as a panel).

Col. 3 ll. 10–17. The specification also describes that the preferred embodiment was for mass assembly of microphone packages where the bottom, side, and top portions of the package were attached simultaneously,

> The microphone packages **92** are distributed on the panel **90** in 14 x 24 array, or 336 microphone packages total. Fewer or more microphone packages may be disposed on the panel **90**, or on smaller or larger panels. As described herein in connection with the various embodiments of the invention, the microphone packages include a number of layers, such as top, bottom and side portions of the housing, environmental barriers, adhesive layers for joining the portions, and the like. To assure alignment of the portions as they are brought together, each portion may be formed to include a plurality of alignment apertures **94**. To simultaneously manufacture several hundred or even several thousand microphones, a bottom layer, such as described herein, is provided. A transducer, amplifier and components are secured at appropriate locations on the bottom layer corresponding to each of the microphones to be manufactured. An adhesive layer, such as a sheet of dry adhesive is positioned over the bottom layer, and a sidewall portion layer is positioned over the adhesive layer. An additional dry adhesive layer is positioned, followed by an environmental barrier layer, another dry adhesive layer and the top layer. The dry adhesive layers are activated, such as by the application of heat and/or pressure. The panel is then separated into individual microphone assemblies using known panel cutting and separating techniques.

Col. 11 ll. 39–63.

II. The Court's Claim Construction

In its claim construction ruling, the court noted that "[t]he issue is whether the term 'attaching a plurality of package covers' in claim 21 of the '049 patent permits the construction that each package cover may be added individually to form each package rather than as a single layer that is later separated into individual package assemblies." Dkt. 118 at 2. The court first found that the inventor stated how the benefits of the invention were directed toward mass production. The inventor stated that those benefits "include the ability to process packages in panel form allowing more units to be formed per operation and at much lower cost. . . . The

present disclosure would have approximately 14,000 devices connected together (as a panel)." *Id.*

The court then looked to the embodiments of the microphone package,

> In an embodiment found at 4:4–44 and illustrated in Figures 7–10, a 'housing is formed from layers of materials . . . . [T]he housing includes a top portion **48** and a bottom portion **50** spaced by a side portion **52** . . . . Each portion may comprise alternating conductive and non-conductive layers.' (4:35–44.) The portions are joined by a sheet of dry adhesive. (*Id.*) The patent describes the lid as being formed in a 'board' format. (10:12–19.) Accompanying Table 6 (10:24–36), as well describes processing of the top portion in terms of layers. The patent further describes drilling 'a matrix of holes into the lid board' for the acoustic port into the top portion (10:19) and 'alignment apertures' to make sure that the panels for each package portion align properly. (11:47–52.)

Dkt. 118 at 2. The court concluded that the specification made clear that the cover constituted a layer instead of a large number of individual covers that are placed on the substrate.

The court found that the '049 patent's specification only described one method of forming a plurality of microphone packages. It recited that the microphone package included a number of layers, namely a top, bottom, and side portions of the housing attached by adhesive layers. The court concluded that the "'plurality of package covers' in claim 21 is a layer of material that, once affixed to the side and bottom portions, forms a panel that is later broken into individual microphone packages." Dkt. 118 at 3.

ANALYSIS

Knowles argues for reconsideration because Federal Circuit precedent provides that a claim construction should not be solely confined to a disclosed embodiment in the specification. ADI argues that the court's original claim construction was correct and that the '049 patent described the claimed invention as a batch manufacturing process where a layer of covers was applied simultaneously instead of individually.

I. Timeliness of Knowles' Argument for Reconsideration

Knowles additionally argues that ADI is untimely in presenting its motion for reconsideration. The court agrees that the arguments Knowles now advances in reconsideration of the court's construction of claim 21 should have been made much earlier in this litigation. The parties and the court have already expanded significant time and resources in connection with claim construction. Still, although Knowles is late in presenting its argument, the need to have claims construed correctly to save future resources in this litigation is more important than strict adherence to schedule. Although ADI may be correct that limited additional discovery will be required, particularly of the expert witnesses, the expense incurred by ADI that would not have been incurred had the motion been timely, can be shifted to Knowles. The court will thus reconsider its prior ruling in light of Knowles' arguments to ensure that the construction of claim 21 is correct. *See Broaddus*, 665 F.3d at 860; *Jack Guttman, Inc.*, 302 F.3d at 1361.

II. The '049 Patent's Specification and Claim 21

Claims are construed from the point of view of one of ordinary skill in the art at the time of filing. *Trading Tech. Int'l* v. *eSpeed Inc.*, 595 F.3d 1340, 1351 (Fed. Cir. 2010). "[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *ICU Med., Inc.* v. *Alaris Med. Sys., Inc.*, 558 F.3d 1368, 1374 (Fed. Cir. 2009) (internal quotation marks omitted). In construing a patent claim, the court should first look to intrinsic evidence, namely the patent itself, including the claims, specification, and prosecution history. *Bell Atl. Network Servs., Inc.* v. *Covad Comm'n Grp., Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). Claims must be read in light of the specification of which they are a part.

Phillips v. *AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc). The Federal Circuit has recognized a "fine line between reading a claim in light of the specification, and importing a limitation from the specification into the claim." *Arlington Indus., Inc.* v. *Bridgeport Fittings, Inc.*, 632 F.3d 1246, 1255 (Fed. Cir. 2011). As such, the court should focus on how a person of ordinary skill would understand the claim "after reading the entire patent." *ICU Med., Inc.*, 558 F.3d at 1375 (internal quotation marks omitted).

A. Claim 21

The first step in construing the disputed claim is to start with the language of the claim itself. Claim 21 delineates the method by which the package is constructed. The inventor describes that the bottom portion of the package comprises a "plurality of interconnected package substrates." Col. 13 ll. 36–37. The inventor next describes attaching the microphone dice to the substrate "one die to each package substrate," a process that claims attaching one die at a time. Col. 14 ll. 5–6. The inventor next describes the connection of the cover over the microphone die. The inventor states in part that the next step involves attaching "a plurality of package covers, each comprising at least one layer of conductive material, to the panel, one package cover to each of the package substrates." Col. 14 ll. 7–9. Notably, unlike the bottom layer, the inventor did not describe the package cover as interconnected. Rather, similarly to the step for placing individual microphone dice on the substrate, the inventor describes attaching "a plurality of package covers . . . to the panel, one package cover to each of the package substrates." Col. 14 ll. 8–9. Last, the inventor describes how after forming a panel of microphone packages the next step was to separate the panel into individual microphone packages. Col. 14 ll. 17–18.

B. The Specification

The next step in construing the disputed term is to look to the specification. The written description of the specification describes an embodiment directed toward mass production of microphone packages. Column three details that the "present disclosure would have approximately 14,000 devices connected together (as a panel)." Col. 3 ll. 17–18. As a means by which to mass produce the microphone packages, the written description further details an assembly where the various components of the package are attached together using various adhesives.

Column three also describes three embodiments of the microphone package. The inventor describes the microphone package as including a "substrate **14**, a back volume or air cavity **18**, which provides a pressure reference for the transducer **12**, and a cover **20**." Col. 3 ll. 40–43. The embodiments in column three further detail that the "substrate **14** may be formed of FR-4 material allowing processing in circuit board panel form, thus taking advantage of economies of scale in manufacturing." Col. 3 ll. 43–45. The embodiments in column 3 do not describe the cover of the package as being a panel, *see* Col. 3 ll. 63–64, neither do they elucidate whether the cover is attached as an interconnected layer or one at a time.

Other parts of the specification indicate that the top portion of the package comprises a series of interconnected covers. Column 10 details the construction of the multi-layer "top portion" describing the top layer constituting the cover as a "lid board" and that a "matrix of holes is drilled into the lid board." Col. 10 ll. 15–20. Column 11 describes a process to "simultaneously manufacture several hundred or even several thousand microphones." Col. 11 ll. 49–50. Column 11 details how the package consists of various layers, including "a top,

bottom, and side portions of the housing, environmental barriers, adhesive layers for joining the portions, and the like." Col. 11 ll. 45–47. In addition, column 11 provides a means for aligning the bottom, side, and top portions together, which indicates that the inventor envisioned that the various portions would be connected at the same time. Specifically, column 11 states that "each portion may be formed to include a plurality of alignment apertures" in order to "assure alignment of the portions as they are brought together." Col. 11 ll. 47–49. This further supports the notion that the top portion was a series of interconnected covers attached at the same time. The preferred embodiment in the specification thus discloses mass production where the layers comprising the microphone package are panels connected to each other and then separated to form individual microphone packages. The benefit of the invention regarding mass production of the microphone package further supports this finding that the preferred embodiment describes panels of materials that are later broken into individual parts.

C. Construing Claim 21

Claim 21 includes language indicating that the inventor claimed a method where the covers of the microphone packages could be placed individually one at a time. The preferred embodiment in the specification, however, describes the method as directed toward mass production and indicates that the bottom and top portions of the package are layers connected to one another. As the court already found, the preferred embodiment describes the top portion of the package as "a layer of material that, once affixed to the side and bottom portions, forms a panel that is later broken into individual microphone packages." Dkt. 118 at 3. The preferred embodiment thus describes a process that is not present in claim 21; namely, configuring the

microphone package with a preconstructed top layer that is attached to a substrate of interconnected panels.

Thus, the next step is to determine how a person of ordinary skill in the art would view the specification's preferred embodiment in light of the language of claim 21 for a method where the cover of the package is a single layer attached at one time. The Federal Circuit has noted the difficulty in determining the scope of a claim that is broader than the preferred embodiment in the specification. *Compare Woodrow Woods* v. *DeAngelo Marine Exhaust, Inc.*, 692 F.3d 1272, 1283 (Fed. Cir. 2012) ("[W]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside . . . the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.") (internal quotation marks omitted) *with Liebel-Flarsheim Co.* v. *Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.") (internal quotation marks omitted).

The Federal Circuit has held that limitations in the specification not otherwise present in the disputed claim limit that claim term "when a patentee sets out a definition and acts as his own lexicographer, or when the patentee disavows the full scope of the claim term either in the specification or during prosecution." *Woodrow Woods*, 692 F.3d at 1283 (internal quotation marks omitted). There is no indication that the patentee acted as his own lexicographer giving the disputed phrase "attaching a plurality of package covers" a meaning that would support construing the cover of the package as an interconnected layer.

While the preferred embodiment describes a method of mass manufacture, that claim 21 does not describe the top layer as a series of interconnected covers demonstrates that the inventor did not intend to limit the claim to the preferred embodiment. Indeed, the first paragraph of the written description provides in part that although there were several written embodiments of the invention, the "present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the broad aspect of the invention to the embodiments illustrated." Col. 3 ll. 6–9.[1] Nor does the specification indicate that the inventor intended to limit claim 21 to the preferred embodiment described in Column 11 by disclaiming a method where the package covers could be attached individually instead of simultaneously as an interconnected layer. *See Thorner* v. *Sony Computer Entm't Am., LLC*, 669 F.3d 1362, 1366–67 (Fed. Cir. 2012) ("To constitute disclaimer, there must be a clear and unmistakable disclaimer."); *Retractable Techs., Inc.* v. *Becton, Dickinson & Co.*, 653 F.3d 1296, 1306 (Fed. Cir. 2011) ("To disavow claim scope, the specification must contain expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.") (internal quotation marks omitted).

In addition, the abstract details that the method for manufacturing the microphone package includes placing microphone dies on a panel, placing covers over the microphone dies, and then separating the panel into individual packages. Unlike the bottom portion of the package, the abstract does not describe the covers as a panel, which indicates that the covers could be both attached as interconnected layer and individually. *See Hill-Rom Co.* v. *Kinetic Concepts, Inc.*, 209 F.3d 1337, 1341 n.* (Fed. Cir. 2009) ("We have frequently looked to the

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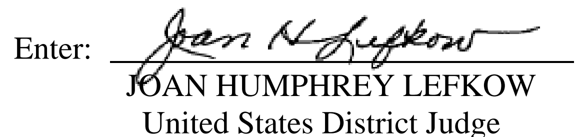
[1] This language was incorporated into the first paragraph of the specification for all the patents in the '049 patent family.

abstract to determine the scope of the invention, and we are aware of no legal principle that would require us to disregard that potentially helpful source of intrinsic evidence as to the meaning of claims.") (citations omitted). A person of ordinary skill in the art reading the '049 patent could find that claim 21 encompassed attaching covers individually to the package substrate although the preferred embodiment was for mass manufacture where the package covers were attached simultaneously. The court thus declines to limit claim 21's scope to an embodiment directed toward mass production when the language of claim 21 indicates that a person of ordinary skill in the art would recognize that the inventor additionally claimed individual placement of the package covers.

CONCLUSION AND ORDER

Knowles' motion for reconsideration is granted as stated herein. This case will be called for a status hearing on March 19, 2013 at 8:30 a.m. and to discuss settlement and/or alternative dispute resolution.

Dated: February 19, 2013 Enter: 

JOAN HUMPHREY LEFKOW
United States District Judge