

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. and
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner,

v.

NEODRON LTD.,
Patent Owner.

IPR2020-00282
Patent 7,821,502 B2

Before MIRIAM L. QUINN, PATRICK M. BOUCHER, and
CHRISTOPHER L. OGDEN, *Administrative Patent Judges*.

OGDEN, *Administrative Patent Judge*.

DECISION
Denying Petitioner's Request for Rehearing
37 C.F.R. § 42.71(c)–(d)

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (“Samsung” collectively) filed a Petition (Paper 4, “Pet.”) under 35 U.S.C. §§ 311–319 for *inter partes* review of claims 1–21 of U.S. Patent No. 7,821,502 B2 (Ex. 1001, “the ’502 patent”). Patent Owner Neodron Ltd. (“Neodron”) filed a Preliminary Response (“Prelim. Resp.”). Paper 8. By our authorization, Samsung filed a Reply limited to addressing issues that Neodron raised as to the requirement under 37 C.F.R. § 104(b)(3) to specify “[h]ow the challenged claim is to be construed.” (Paper 9, “Reply”). Neodron filed a similarly limited Sur-Reply. Paper 10. On June 11, 2020, we denied the Petition on the ground that Samsung did not demonstrate a reasonable likelihood of prevailing in proving that at least one challenged claim of the ’502 patent is unpatentable. Paper 11 (“Decision” or “Dec.”), 19.

Samsung has filed a Request for Rehearing (Paper 12, “Req.”). When a party requests rehearing on a decision on whether to institute *inter partes* review, we “review the decision for an abuse of discretion.” 37 C.F.R. § 42.71(c) (2019). There is an abuse of discretion if we have made “a clear error of judgment in weighing relevant factors or in basing [our] decision on an error of law or on clearly erroneous factual findings.” *Bayer CropScience AG v. Dow AgroSciences LLC*, 851 F.3d 1302, 1306 (Fed. Cir. 2017) (quoting *Mentor Graphics Corp. v. Quickturn Design Sys., Inc.*, 150 F.3d 1374, 1377 (Fed. Cir. 1998)). In a request for rehearing, “[t]he burden of showing a decision should be modified lies with the party challenging the decision,” and “[t]he request must specifically identify all matters the party

believes the Board misapprehended or overlooked, and the place where each matter was previously addressed” in the record. 37 C.F.R. § 42.71(d).

Samsung requests rehearing on two grounds: (1) that we misapprehended the meaning of “row wrap-around connections” and misapplied that interpretation in our obviousness analysis as to Barkan¹ alone, and (2) that we “misapprehended or overlooked the evidence supporting Dr. Wolfe’s opinions concerning the motivation to combine Barkan and Tagg.”² Req. 1.

We have considered Samsung’s arguments, and they do not persuade us of any abuse of discretion in our Decision. Therefore, the Request for Rehearing is *denied*.

II. DISCUSSION

A. WHETHER WE ABUSED OUR DISCRETION IN CONSTRUING “ROW WRAP-AROUND CONNECTIONS” AND APPLYING THAT TERM TO BARKAN

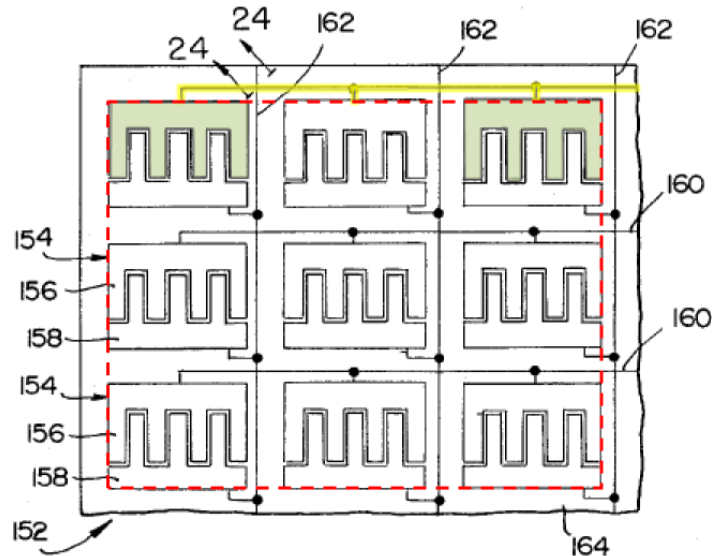
Limitation 1C of the ’502 patent recites “wherein row sensing electrodes of sensing cells at opposing ends of at least one of the rows are electrically coupled to one another by respective *row wrap-around connections* made outside of the sensing area.” Ex. 1001, 12:23–26 (emphasis added).

As we noted in our Decision, the Petition did not propose an explicit construction for any term in the challenged claims, including “row wrap-around connections.” *See* Dec. 9 (citing Pet. 10–11 & n.2). However,

¹ Barkan et al., US 3,757,322, issued Sept. 4, 1973 (Ex. 1004, “Barkan”).

² Tagg et al., US 2003/0067451 A1, published Apr. 10, 2003 (Ex. 1007, “Tagg”).

Samsung argued that Figure 23 of Barkan disclosed this limitation, and provided an annotated version of Barkan's Figure 23, which we reproduce below:



Ex.-1004, Figure 23 (Annotated)

Pet. 26. Figure 23 is a fragmentary plan view of a portion of touch-sensitive overlay 152. Ex. 1004, 10:14–17, 27:1–2. Overlay 152 includes an array of transparent contact areas 154, each of which “is composed of two electrically and physically discrete contact sub-areas 156, 158” designated as X and Y contact sub-areas, respectively. *Id.* at 27:5–6, 27:50–52. According to Barkan, “[a]ll of the X contact sub-areas in any given X row are connected by a transparent electrically conductive lead 160,” and the Y columns are similarly connected by transparent vertical lead 162. *Id.* at 27:53–57. Leads 160 and 162 “extend to the periphery of the transparent electrically non-conductive substrate or supporting panel 164.” *Id.* at 27:58–59.

In the above annotated version of Figure 23, Samsung has added a red dashed box including all visible sensing cells 154, and most of connecting

conductive leads 160 and 162, but excluding the uppermost row lead 160 (which Samsung has highlighted in yellow) and the right-most column lead 162. In its Petition, Samsung argued that a person of ordinary skill in the art would have understood that yellow-highlighted lead 160 is a “wrap-around connection” because it “connects the X contact areas on the left and right ends of the uppermost row,” which Samsung highlighted in green. Pet. 27.

We did not find this argument persuasive, because “Samsung’s application of limitation [1C] to Barkan fails to clearly assign any meaning to the term ‘wrap-around connection’ that distinguishes that limitation from the requirement in limitation [1B] that ‘the row sensing electrodes of sensing cells in the same row [are] electrically coupled together.’” Pet. 15 (quoting Ex. 1001, 12:20–22) (citing *Stumbo v. Eastman Outdoors, Inc.*, 508 F.3d 1358, 1362 (Fed. Cir. 2007) (stating that construing a claim term in a way that would render other terms superfluous is “a methodology of claim construction that this court has denounced”))).

In its Request for Rehearing, Samsung makes two arguments regarding our treatment of the term “row wrap-around connection”: (1) that we incorrectly accepted Neodron’s interpretation of the term, Req. 3–9; and (2) that the plain and ordinary meaning of limitation 1C does not require a connection distinct from the row connections of limitation 1B, *id.* at 9–12. For the reasons below, we do not find either argument persuasive in showing an abuse of discretion.

1. Construction of “Row Wrap-Around Connections”

First, Samsung argues it has “consistently asserted that ‘**row** wrap-around connections’ should be accorded its plain and ordinary meaning, *i.e.*,

connections that wrapped around other electrodes in the *row*.” Req. 3 (citing Pet. 10–11, 25–30).

We disagree. Nowhere in the cited passages in the Petition does Samsung argue that we should construe the term “row wrap-around connections” according to the explicit construction that Samsung now suggests for the plain and ordinary meaning. *See* Pet. 10–11, 25–30. Rather, Samsung argued that “Petitioners do not believe any term requires explicit construction.” Pet. 10–11. In the Reply, Samsung argued that all of the terms in the challenged claims should be construed according to their plain and ordinary meaning. *See* Reply 1, 4–5. However, apart from arguing that Samsung had proposed construing limitation 1C in the co-pending district court proceeding according to its plain and ordinary meaning,³ Samsung did not propose any specific construction for the phrase “row wrap-around connection,” or point to any evidence as to what the ordinary and customary meaning of that phrase was to a person of ordinary skill in the art. Therefore, we decline to adopt Samsung’s new proposed construction on rehearing.

Next, Samsung argues that its newly proposed construction is “[i]n stark contrast” to Neodron’s argument “that the ‘*row* wrap-around connections’ had to wrap around the *sensing area* (a limitation found nowhere in the plain language of claim 1).” Req. 5 (citing Prelim. Resp. 12).

Because Samsung’s new construction was not on the preliminary record when we made our Decision, we do not find this argument persuasive in showing an abuse of discretion.

³ In the co-pending litigation, Samsung’s proposed construction for limitation 1C is simply a verbatim copy of limitation 1C. *See* Reply 1; Ex. 1009, 45.

Also, our Decision did not rely on construing the term “row wrap-around connections” to require the connections to wrap around the sensing area. Instead, we agreed with Neodron that Samsung’s approach in applying claim 1 to Barkan fails to give any meaning to the term “wrap-around.” *See* Dec. 14–15 (citing Prelim. Resp. 8); *see also* Prelim. Resp. 11–12 (citing *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970) (“All words in a claim must be considered in judging the patentability of that claim against the prior art.”)). We simply agreed with Neodron that Samsung failed to adequately explain what the connection wraps around, or how “row wrap-around connections” are any different from the row connections recited in limitation 1B. *See* Pet. 15.

In the Request for Rehearing, Samsung specifically suggests, for the first time, that it is the *middle* electrode that lead 160 wraps around: “[T]he yellow-highlighted lead 160 . . . extends from the top of the row electrode at the left end of [the] upper row, *wraps around the row electrode at the middle of the upper row*, and then connects to the top of the electrode at the right end of the row.” Req. 11 (emphasis added) (citing Pet. 26). Because Samsung has not persuasively shown that it made this argument in the Petition, it is untimely and we do not consider it on rehearing.

Next, Samsung now argues that in the co-pending district court litigation, Neodron has changed its position and “agrees that the element 1C ‘row wrap-around connections’ need only wrap around the other electrodes in the *row*.” Req. 6–7 (citing Ex. 1009, 6). Samsung cites a Joint Claim Construction Statement from the co-pending litigation, dated after our Decision, arguing that “[g]ood cause exists to consider this exhibit, as it demonstrates an about face concerning Patent Owner’s construction . . . ,

which Patent Owner previously presented in an inconsistent manner in this proceeding.” *Id.* at 7 n.1.

We do not find good cause to admit and consider the Joint Claim Construction Statement on rehearing, because our Decision was based on Samsung’s lack of specificity in explaining why or how Barkan’s row connections are “wrap-around connections.” Neodron’s alleged change of position in the co-pending litigation was not part of the record at the time of our Decision, so it is not a matter that we could have misapprehended or overlooked. Submission of the document would also be problematic because under our rules, Neodron is not provided with a right to respond to any new evidence submitted with a request for rehearing. *See* 37 C.F.R. § 42.71(d).

Next, Samsung argues that “*each* of the leads 160 in Figure 23 of Barkan is a ‘row wrap-around connection’ because they each electrically couple the row sensing electrodes of the end sensing cells in each row and wrap around the other electrodes in the row.” Req. 7 (emphasis added) (citing Pet. 25–27; Reply 4–5). In other words, Samsung argues that “every one of these traces 160, 162 is a wrap-around connection because each one wraps around other electrodes in the respective row or column.” *Id.*

But this reflects a shift from the arguments that Samsung made in the Petition. There, Samsung argued that the *uppermost* lead 160, highlighted in yellow, was a “wrap around connection” because “the highlighted lead connecting these X contact sub-areas connects the X contact areas on the left and right ends of the upper most row.” Pet. 27; *see also* Reply 4 (“For [limitation 1C], the petition identifies the uppermost ‘lead 160’ in Figure 23 of Barkan, which is an electrical conductor that connects the X contact sub-areas . . . at opposite ends of the uppermost row . . .”). Because Samsung

does not demonstrate that its new argument about “each of the leads” was part of its Petition, we do not consider it on rehearing.

Next, Samsung argues that “[n]othing in the Petition’s application of Barkan to claim 1 renders any part of claim 1 superfluous.” Req. 8. But in making this argument, Samsung relies on its new interpretation in which each lead 160, not just the uppermost one, is a “row wrap-around connection.” *See id.* at 8–9. Since this is a new interpretation that Samsung did not express in the Petition, this argument does not persuade us that we abused our discretion.

2. *Interplay Between Limitations 1B and 1C*

Limitation [1B] recites a substrate where “the row sensing electrodes of sensing cells in the same row [are] electrically coupled together.” Ex. 1001, 12:20–22. As part of the rationale in our Decision, we determined that “Samsung’s application of limitation [1C] to Barkan fails to clearly assign any meaning to the term ‘wrap-around connection’ that distinguishes that limitation from the requirement in limitation [1B] that “the row sensing electrodes of sensing cells in the same row [are] electrically coupled together.” Dec. 15 (quoting Ex. 1001, 12:20–22) (citing *Stumbo v. Eastman Outdoors*, 508 F.3d at 1362).

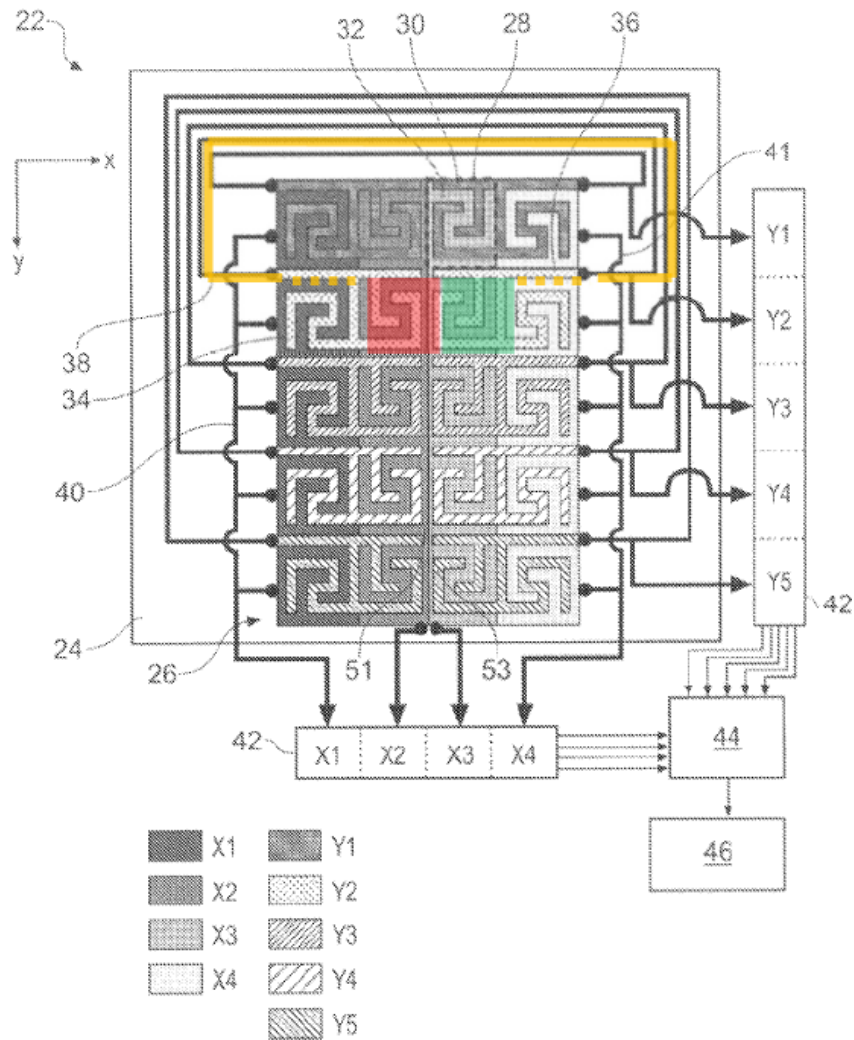
Samsung argues that we misapprehended the evidence by “interpret[ing] elements 1B and 1C to require separate and distinct connections.” Req. 9. According to Samsung, “[n]othing in the plain language of the claims requires that the coupling recited by element 1B and the coupling of element 1C be achieved by distinct connections.” *Id.* Samsung contends that our interpretation of the claim “is inconsistent with

all disclosed embodiments of the '502 Patent.” *Id.*; *see also id.* at 10–12 (citing Ex. 1001, 6:53–59, Figs. 3, 7, 8; Ex. 1004, 23; Pet. 24–30).

Samsung’s arguments do not address the rationale of our Decision. We did not deny institution because Barkan’s row connections corresponding to the connections in limitations 1B and 1C were not separate and distinct. Rather, we determined that Samsung’s interpretation of Barkan’s Figure 23 in which lead 160 is a “row wrap-around connection” does not give sufficient meaning to the term “wrap-around” that distinguishes a “wrap-around connection” from any other connection, including the connections in limitation 1B. Dec. 15. Thus, Samsung’s interpretation in the Petition rendered the term “wrap-around” superfluous. *See id.* (citing *Stumbo v. Eastman Outdoors*, 508 F.3d at 1362).

Samsung’s new interpretation of Barkan, which identifies every lead 160 and not just the uppermost one as a “row wrap-around connection,” does not help in this regard. Samsung still has not adequately explained, either on the original record or in its Request for Rehearing, how a “wrap-around” connection is different from a connection that is not “wrap-around,” or how leads 160 “wrap around” each of the rows in Barkan’s Figure 23.

Samsung also argues that we “adopted an interpretation that is inconsistent with all the disclosed embodiments of the '502 Patent.” Req. 9. In particular, Samsung points to Figure 3 of the '502 patent, which we reproduce below with Samsung’s annotations:



Req. 10. Figure 3 is a schematic plan view of two-dimensional touch-sensitive capacitive position sensor 22. Ex. 1001, 5:37–38. Sensor 22 has an arrangement of electrodes 26, which are divided into four columns (X1–X4) and five rows (Y1–Y5) of sensing cells 28. *Id.* at 5:58–60.

According to Samsung, in row Y2, “the row sensing electrodes in the middle two columns X2 (highlighted red) and X3 (highlighted green) are *not* electrically coupled to each other by any connections other than the row wrap-around connections 38 (highlighted yellow).” Req. 10 (citing Ex. 1001, 6:53–59, Fig. 3). So Samsung argues that in Figure 3, “a single row wrap-

around connection 38 serves to provide the coupling required by both elements 1B and 1C.” *Id.* (citing Ex. 1001, 6:53–59, Fig. 3).

First, Samsung has not pointed to any place in the record where it has previously made this argument, so it is untimely on rehearing. *See* 37 C.F.R. § 42.71(d) (2019).

Second, as mentioned above, we did not deny institution because Barkan’s row connections corresponding to the connections in limitations 1B and 1C were not separate and distinct. Rather, we determined that Samsung did not adequately explain why Barkan’s leads 160 are “row wrap-around connections.”

Samsung’s new argument with respect to Figure 3 does not help in that regard. As Neodron pointed out in its Preliminary Response, during prosecution of the ’502 patent, the Examiner rejected claim 1 over Mabusth⁴ which, analogously to Barkan, has a conductor for each column that connects adjacent electrodes in that column to each other and then, on one side, to an external connection. *See* Prelim. Resp. 10 (citing Ex. 1008, 85). The applicant overcame the rejection by arguing that the cited figure in Mabusth “shows only one end of a column of electrode plates . . . coupled to something other than an adjacent electrode plate.” *Id.* (emphasis omitted) (quoting Ex. 1008, 85). Thus, the applicant argued that “Mabusth does not show or teach electrodes of sensing cells at opposing ends of a row (or column) connected using a wrap-around connection, in contrast to the . . . elements of independent claim 1.” *Id.* (quoting Ex. 1008, 59).

⁴ Mabusth, US 4,550,221, issued Oct. 29, 1985 (Ex. 2003)

Like the column-connecting leads in Mabusth—but unlike row wrap-around connections 38 in Figure 3 of the '502 patent—Barkan's row-connecting leads 160 simply connect together all the adjacent sensor cells in the row, and then to an external connection, without any detours while traversing each adjacent sensor cell along the row. The prosecution history of the '502 patent suggests that such connections are not “wrap-around connections.”

For the above reasons, Patent Owner does not persuade us that we misapprehended the meaning of “row wrap-around connections” or that we clearly erred in applying the limitation to the teachings in Barkan.

B. WHETHER WE MISAPPREHENDED OR OVERLOOKED THE EVIDENCE SUPPORTING DR. WOLFE'S OPINIONS CONCERNING THE MOTIVATION TO COMBINE BARKAN AND TAGG

In the Petition, Samsung argued that Tagg discloses row wrap-around connections and that it would have been obvious to incorporate those connections into Barkan's panel design. *See* Pet. 21, 28–30. Samsung argued that there was a motivation to combine the references because “these connections would be beneficial in minimizing RC delay, and would thereby enable the use of lengthier columns and rows of electrodes.” *Id.* at 21 (citing Ex. 1002 ¶ 51 (declaration of Dr. Wolfe)).

We determined that Samsung had not provided sufficient evidence of its proposed motivation to combine the two references. *See* Dec. 16 (“[N]either Samsung nor Dr. Wolfe supports this conclusion with any evidence on the preliminary record.” (citing *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016); 35 U.S.C. § 322(a)(3))). In particular, we found that “Dr. Wolfe does not explain how or why the

combination of Barkan and Tagg would minimize RC delay or allow for the use of lengthier columns and rows of electrodes, or cite to any facts, data, or authorities to support that opinion.” Dec. 17. We stated that “there is no evidence in the record suggesting that RC delay was a recognized problem . . . or that a person of ordinary skill in the art would have understood that a connection to both sides of a row of electrodes would be a solution to that problem.” *Id.* We also stated that Dr. Wolfe does not “provide any detail as to how a person of ordinary skill in the art would have modified Barkan’s leads 160 to incorporate external connections such as those in Tagg.” *Id.* (citing *Personal Web Techs., LLC v. Apple, Inc.*, 848 F.3d 987, 994 (Fed. Cir. 2017)).

Samsung argues that we “overlooked Dr. Wolfe’s extensive knowledge and experience in the field of capacitive position sensors.” Req. 12–13 (citing Ex. 1002 ¶¶ 3–16). We did not overlook Dr. Wolfe’s knowledge or background. Our Decision was not based on any deficiency in his expertise or credibility, but on the lack of a sufficiently specific explanation in his declaration and in the Petition.

To bolster Dr. Wolfe’s testimony, Samsung cites what it characterizes as applicant’s admitted prior art in the ’502 patent. *See* Req. 13–14 (citing Ex. 1001, 7:20–26, 7:35–37). Samsung also cites Binstead,⁵ which according to Samsung is prior art mentioned in the ’502 patent. *Id.* at 14 (citing Ex. 1001, 1:49–56).

But Samsung does not point to any instance, in its Petition, in which Samsung referred to Binstead or the other passages of the ’502 patent as part

⁵ Binstead, US 5,844,506, issued Dec. 1, 1998 (Ex. 1010, “Binstead”).

of its theory of obviousness. Moreover, whatever the content of Binstead and these passages are, their appearance in the '502 patent does not take the place of Samsung articulating a specific rationale in the Petition, based on that evidence, for why a person of ordinary skill in the art would have combined the separate teachings of Barkan and Tagg. *See Magnum Oil*, 829 F.3d at 1380.

We conclude that we did not misapprehend or overlook the evidence supporting Dr. Wolfe's opinions concerning the motivation to combine Barkan and Tagg. And Samsung has not persuasively shown any abuse of discretion in our Decision.

III. ORDER

In consideration of the foregoing, it is hereby
ORDERED that Patent Owner's Rehearing Request is *denied*.

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