Nos. 2023-1630

In the
United States Court of Appeals
For the Federal Circuit

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

Appellants,

v.

POWER2B, INC.,

Appellee.

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Proceeding No. IPR2021-01257

COMBINED PETITION FOR PANEL REHEARING AND/OR REHEARING EN BANC

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UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

CERTIFICATE OF INTEREST

Case Number 23-1630

Short Case Caption Samsung Electronics Co., Ltd. v. Power2B, Inc.

Filing Party/Entity Power2B, Inc.

Instructions:

1. Complete each section of the form and select none or N/A if appropriate.
2. Please enter only one item per box; attach additional pages as needed, and check the box to indicate such pages are attached.
3. In answering Sections 2 and 3, be specific as to which represented entities the answers apply; lack of specificity may result in non-compliance.
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I certify the following information and any attached sheets are accurate and complete to the best of my knowledge.

Date: 04/04/2023

Signature: /s/ Jason A. Wietjes

Name: Jason A. Wietjes

1. Represented Entities. Fed. Cir. R. 47.4(a)(1).	**2. Real Party in Interest.** Fed. Cir. R. 47.4(a)(2).	**3. Parent Corporations and Stockholders.** Fed. Cir. R. 47.4(a)(3).
Provide the full names of all entities represented by undersigned counsel in this case.	Provide the full names of all real parties in interest for the entities. Do not list the real parties if they are the same as the entities. ☑ None/Not Applicable	Provide the full names of all parent corporations for the entities and all publicly held companies that own 10% or more stock in the entities. ☑ None/Not Applicable
Power2B, Inc.		

☐ Additional pages attached

4. Legal Representatives. List all law firms, partners, and associates that (a) appeared for the entities in the originating court or agency or (b) are expected to appear in this court for the entities. Do not include those who have already entered an appearance in this court. Fed. Cir. R. 47.4(a)(4).

☐ None/Not Applicable ☐ Additional pages attached

Stephen McBride, Carmichael IP, PLLC	James T. Carmichael, Carmichael IP, PLLC	James P. Murphy, Polsinelli PC

5. Related Cases. Other than the originating case(s) for this case, are there related or prior cases that meet the criteria under Fed. Cir. R. 47.5(a)?

☑ Yes (file separate notice; see below) ☐ No ☐ N/A (amicus/movant)

If yes, concurrently file a separate Notice of Related Case Information that complies with Fed. Cir. R. 47.5(b). **Please do not duplicate information.** This separate Notice must only be filed with the first Certificate of Interest or, subsequently, if information changes during the pendency of the appeal. Fed. Cir. R. 47.5(b).

6. Organizational Victims and Bankruptcy Cases. Provide any information required under Fed. R. App. P. 26.1(b) (organizational victims in criminal cases) and 26.1(c) (bankruptcy case debtors and trustees). Fed. Cir. R. 47.4(a)(6).

☑ None/Not Applicable ☐ Additional pages attached

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DOCUMENT	ABBREVIATION
Appellee Power2B, Inc.	Power2B
Appellants Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.	Samsung
The Patent Trial and Appeal Board	the Board
U.S. Patent No. 9,317,170	the ’170 patent
U.S. Patent No. 8,610,675	the ’675 patent

STATEMENT OF COUNSEL

Based on my professional judgment, I believe the Panel's decision is contrary to this Court's precedent with respect construing a disputed claim recital to encompass all embodiments for "a divisional application that was filed as a result of the restriction requirement," including as set forth in:

- *Gerber Garment Technology, Inc. v. Lectra Systems, Inc.*, 916 F.2d 683 (Fed. Cir. 1990).

Based on my professional judgment, I believe the Panel's decision is contrary to this Court's precedent with respect to construing a disputed claim recital that was used throughout the entire patent specification, in a manner consistent with only a single meaning, including as set forth in:

- *Homeland Housewares, LLC v. Whirlpool Corp*., 865 F.3d 1372 (Fed. Cir. 2017).

Based on my professional judgment, I believe the Panel's decision is contrary to this Court's precedent with respect to the presumption that the presence of a dependent claim that adds new limitations with a new antecedent basis gives rise to a presumption that the new limitations in question are not present in the independent claim, including as set forth in:

- *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005); and
- *Sprint Spectrum L.P. v. Gen. Access Sols., Ltd*., 812 F. App'x 999 (Fed. Cir. 2020).

Based on my professional judgment, I believe this appeal provides clear facts and a good record to answer the following precedent-setting question of exceptional importance:

> Whether a disputed claim recital, which formed the basis of a restriction requirement, should be construed to encompass all embodiments or only the specific embodiments corresponding to the elected group?

Dated: March 14, 2025

/s/Adam P. Daniels
Adam P. Daniels

INTRODUCTION AND STATEMENT OF THE CASE

For the first time during oral argument, Samsung explained its construction of the disputed claim recital—*i.e.*, the Panel's ultimate construction—is "broad enough to cover all of the embodiment[s] that are described in the ['170] patent."[1] As a matter of law under this Court's precedent, the *restricted* claims pursued in the '170 patent[2]—which issued from a divisional application—must be drawn only to the "other" invention, not all embodiments. *See Gerber Garment Technology, Inc. v. Lectra Systems, Inc.*, 916 F.2d 683, 687 (Fed. Cir. 1990) ("Plain common-sense dictates that a divisional application filed as a result of a restriction requirement may not contain claims drawn to the invention set forth in the claims elected and prosecuted to patent in the parent application."). Simply put, the Panel's construction impermissibly encompasses restricted embodiments that are excluded from the scope of the '170 patent as a matter of law.

In its simplest expression, the disputed recital, "an impingement ***of*** an electromagnetic radiation spot ***on*** […] the at least one surface element," reduces to

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[1] Oral Arg. at 02:35: *available at* https://oralarguments.cafc.uscourts.gov/default.aspx?fl=23-1630_11042024.mp3; *see also* Appx16 ("Petitioner does not provide its own explicit construction or explain further the implicit construction.").

[2] *See* Appx50, code (62); Appx27 ("Indeed, the '170 patent issued from a divisional application.").

"an impingement ***of*** [A] ***on*** [B]."[3] Overlooked, unequivocal disclosures state the "electromagnetic radiation spot" is "defined by the impingement ***of*** light ***on*** the interactive surface."[4]

The Panel incorrectly construed the disputed recital in the divisional '170 patent to encompass all embodiments such that it can be satisfied under two juxtaposed definitions:

1. [A] impinges on [B]: "electromagnetic radiation being reflected or projected onto the interactive surface of a device"; and
2. [A] does not impinge on [B] (the absence of [A] on [B]): "interrupting or blocking electromagnetic radiation from reaching the surface, without reflecting or projecting radiation onto the surface."[5]

The first definition reflects the correct scope of the *elected divisional claims*, follows the plain claim language, is consistent with unequivocal, overlooked disclosures, and aligns with the construction adopted by both the Board and the District Court in related proceedings.

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[3] All emphasis added unless otherwise noted.

[4] Appx125 (69:35-39); *see also* Appx97 (14:25-28); Appx125 (70:41-43).

[5] *See* Doc. 47 (Opinion) at 13.

The second definition is contrary to this Court's precedent and relies on an incomplete record and new grounds,[6] and a misunderstanding of the claim language.

The Panel erred by overlooking the complete prosecution history regarding the elected claims in the divisional '170 patent.[7,8] The Panel did not consider that every claim recital in the divisional '170 patent corresponds to the same elected group of prosecution claims restricted from the parent '675 patent, and thus the disputed recital does not, and cannot, encompass all embodiments. In fact, the disputed recital formed the basis of the restriction requirement and is drawn only to specific embodiments that "***brighten*** the sensing surface"—*e.g.*, vis-à-vis light or

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[6] *See* Doc 19 (Resp.) at 36 n3 (identifying new arguments regarding a new excluded embodiment (*e.g.*, Figure 18B), which were not discussed in the proceedings below).

[7] *See* Opinion at 12; Appx50 at (62); Appx27 ("Indeed, the '170 patent issued from a divisional application.").

[8] Power2B respectfully requests the Court take judicial notice of publicly available USPTO records under Federal Rule Evidence 201(b)(2): *available at* https://patentcenter.uspto.gov/applications/12531039. *See Mobility Workx, LLC v. Unified Pats., LLC,* 15 F.4th 1146, 1151 (Fed. Cir. 2021) citing Fed. R. Evid. 201(d) (judicial notice may be taken at "any stage of a proceeding"); *Kaempe v. Myers*, 367 F.3d 958, 965 (D.C. Cir. 2004) (USPTO records are "public records subject to judicial notice"); *Old Reliable Wholesale, Inc. v. Cornell Corp*., 635 F.3d 539, 549 (Fed. Cir. 2011) (taking judicial notice of USPTO filings); *Vitek Sys., Inc. v. Abbott Labs*., 675 F.2d 190, 192 n.4 (8th Cir. 1982) (taking "judicial notice of Patent and Trademark Office documents").

radiation on that surface (the first definition). Under this Court's precedent, the scope of the restricted claims pursued in a divisional patent encompass only the "other" invention, not all embodiments. *See Gerber*, 916 F.2d at 687-688. The Panel's construction improperly encompasses non-elected embodiments that do the exact opposite of brightening the sensing surface—namely, blocking, interrupting, or preventing light from reaching the surface.[9]

Indeed, the Panel overlooked consistent and unequivocal disclosures that likewise confirm the disputed recital is directed to only those elected embodiments that require light on the interactive surface element, not the absence thereof. Here, the '170 patent expressly states the disputed "electromagnetic radiation spot" is "***defined by the impingement of light on the interactive surface or a layer thereof***."[10] Moreover, consistent with this Court's precedent, in every instance the '170 patent uses the word "spot" in conjunction with a "light spot" or "radiation spot" and further, the '170 patent uses the term "light spot" or "radiation spot" "throughout the entire patent specification, in a manner consistent with only a

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[9] *See* Opinion at 12 n3.

[10] Appx125 (69:33-39); *see also* Appx125 (70:41-43) (an "elliptical light spot [is] formed by impingement of the light from an input object upon the interactive surface"); Appx97 (14:25-28) ("light…causes impingement of a spot of light on" the display); Appx125 (70:25-28) (the size of the "light spot impinging on the interactive surface" changes based on the object's distance to the display).

single meaning," and that meaning affirmatively requires light impinging on the surface (not the absence thereof). *See Homeland Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1377 (Fed. Cir. 2017) (quoting *Bell Atl. Network Servs., Inc. v. Covad Commc'ns Grp., Inc.*, 262 F.3d 1258, 1271 (Fed. Cir. 2001)) (internal quotations omitted).

The Panel also did not follow this Court's precedent regarding dependent claim limitations and misapprehended the relationship between distinct "impingement" recitals in claim 1 and dependent claim 28.[11] "The presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314-15 (Fed. Cir. 2005). The Panel ignored the new processing hardware and antecedent basis for the new "array detection output" in dependent claims 27-28, which includes information regarding an object's "impingement point" (*e.g.*, X, Y coordinate). Instead of applying the correct presumption that the new limitations are not present in the independent claim, the Panel incorrectly assumed (1) the "input sensor" output in claim 1, which provides information regarding "an electromagnetic radiation spot," must encompass the "array detection output" in claim 28, which provides information regarding the

[11] *See* Opinion at 10.

object's coordinate "impingement point"; and (2) the "impingement point" in claim 28 would result in the wholesale interruption or absence of radiation. This Court's precedent and the overlooked disclosures contradict the Panel's assumptions and foundation for the second definition.

Individually or collectively, the complete factual record, the restriction requirement in the parent patent, the misapprehended and overlooked disclosures, and this Court's precedent consistently support a construction limited to the first definition and excluding the second. In view of the foregoing, Power2B respectfully requests a Panel or *en banc* rehearing to modify the Panel's construction and remove the second definition. The remaining issues on appeal relate to the Board's factual findings and are supported by substantial evidence and should be affirmed without remand.

ARGUMENT

1. The Court should grant a rehearing *en banc* or Panel rehearing to correct the factual record.

As discussed, for the first time during oral argument, Samsung explained its construction—*e.g.*, the Panel's ultimate construction—is "broad enough to cover all of the embodiment that are described in the ['170] patent."[12] Without the benefit of a complete record, the Panel erred by relying on new grounds and new excluded embodiments and improperly construed the disputed "electromagnetic radiation spot" recital to encompass all embodiments, which include the absence of radiation on the device.[13]

However, this Court's precedent and the complete record contradict the second definition. The disputed recital for the divisional '170 patent[14] formed the basis of a restriction requirement during prosecution of the parent '675 patent and is drawn to specific embodiments that ***brighten*** the sensing surface, vis-à-vis the

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[12] Oral Arg. at 02:35; *see also* Appx16 ("Petitioner does not provide its own explicit construction or explain further the implicit construction."); Appx14 ("Petitioner, however, did not provide substantive argument.").

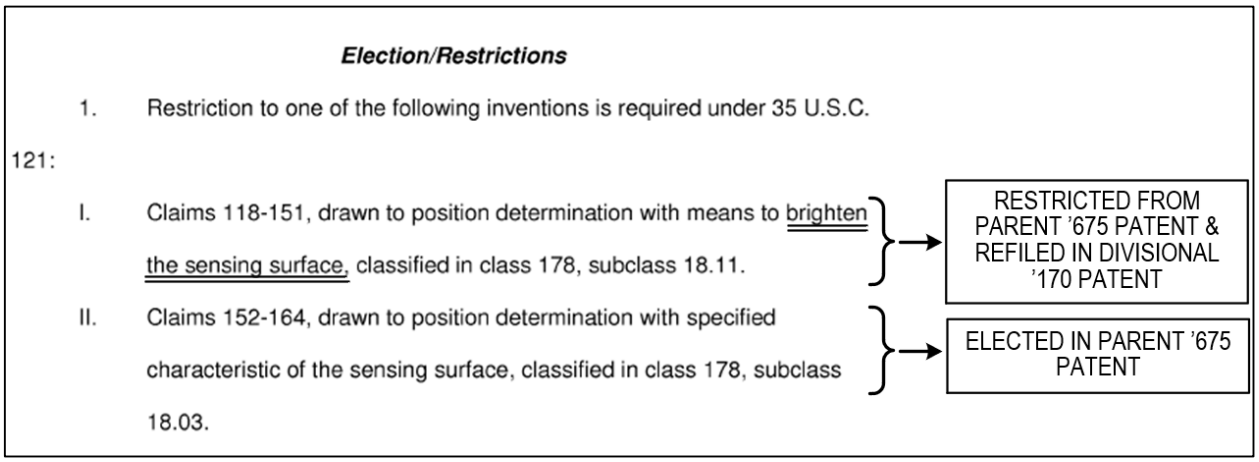
[13] *See* Opinion at 11-12 n3 (referencing new Figure 18B disclosures); Resp. at n3 (identifying new arguments regarding Figure 18B); *compare* Appx8267-8272 (Samsung did not discuss Figure 18B before the Board), *with* Opening at 21-22 (Samsung introduced arguments that Figure 18B represented an excluded "blocking or interrupting" embodiment).

[14] *See* Appx50, code (62); Appx27 ("Indeed, the '170 patent issued from a divisional application").

light spot or "radiation spot" on that surface. Thus, the disputed recital does not encompass the absence of radiation on that surface.

A. The scope of the disputed recital is drawn to embodiments that "brighten the sensing surface, classified in class 178, subclass 18.11."

During prosecution of the parent '675 patent, the Examiner issued a restriction requirement and identified two groups of inventions:[15]



Ex18 (Sep. 12, 2012 Restriction Requirement)
(annotated by Power2B)

[15] For convenience, the USPTO records are referenced by Bates numbered Exhibit pages ("Ex__"), which are being filed with Power2B's concurrent motion requesting judicial notice. The USPTO records are also available at: https://patentcenter.uspto.gov/applications/12531039.

Power2B elected Group II claims for the ’675 patent and re-filed the restricted, non-elected Group I claims in the divisional ’170 patent.[16]

In accordance with this Court’s precedent, the ’170 patent claims are “consonant” with the restricted prosecution claims because every recital, without exception, corresponds to the prosecution claims restricted from the parent ’675 patent.[17] *See Gerber*, 916 F.2d at 688. For example, claim 1 in the divisional ’170 patent incorporates the same recitals from the restricted prosecution claims 118, 126, 136, 138, and 143 from the parent ’675 patent.[18]

At the time of restriction, the only recital in prosecution claim 118 (Group I) drawn to “brighten the sensing surface” was the exact same recital disputed here—*i.e.*, “an impingement of an electromagnetic radiation spot on […] the at least one interactive surface element”:

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[16] *See* Ex33 (Oct. 29, 2012 Election) (“Applicant hereby provisionally elects group II, claims 152-165”); Ex40-42 (Jan. 16, 2013 Office Action) (the Examiner examined Group II claims); Ex47 (Jun. 26, 2013 Amendment) (Power2B refiled the restricted prosecution claims for the divisional ’170 patent and canceled non-elected Group I prosecution claims 118-151); Ex54 (Dec. 16, 2013 Original Claims) (the ’170 patent prosecution records are available at: https://patentcenter.uspto.gov/applications/14108242)).

[17] *Compare* Ex3-9 (Oct. 1, 2009 Preliminary Amendment) (’675 patent prosecution claims 118-152), *with* Appx127-128 (’170 patent, claims 1-30).

[18] *Compare* Ex3-9 (Oct. 1, 2009 Preliminary Amendment) (’675 patent prosecution claims 118-152), *with* Appx127-128 (’170 patent, claims 1-30).

> 118. (New) An interactive assembly comprising:
>
> at least one interactive surface element, at least a first region of the at least one interactive surface element having first user sensible functionality and at least a second region of the at least one interactive surface element having second functionality, different from the first user sensible functionality, and
>
> at least one input sensor located in propinquity to at least one of the at least one interactive surface element, each of the at least one input sensor being configured to provide an output indicative of ***an impingement of an electromagnetic radiation spot on*** at least one of the at least one first region and the at least one second region of ***the at least one interactive surface element***.[19]

The only construction of the disputed recital that results in a ***brighter*** sensing surface affirmatively requires light impinging on that surface, which supports the Panel's first definition. Indeed, overlooked, consistent, and unequivocal disclosures likewise confirm the claimed "electromagnetic radiation spot" or light spot is "***defined by the impingement of light on the interactive surface or a layer thereof***."[20]

Under this Court's precedent, the correct scope for restricted claims pursued in a divisional patent must be drawn to only the non-elected, "other" invention. *Gerber*, 916 F.2d at 687 ("Plain common-sense dictates that a divisional

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[19] Ex3 (Oct. 1, 2009 Preliminary Amendment) (including original prosecution claim 118).

[20] Appx125 (69:35-39); *see also* Appx97 (14:25-28) ("light…causes impingement of a spot of light on" the display).

application filed as a result of a restriction requirement may not contain claims drawn to the invention set forth in the claims elected and prosecuted to patent in the parent application. The divisional application must have claims drawn only to the 'other invention.'").

Only the first definition aligns with this Court's precedent because it requires light on the surface, which ***brightens*** the sensing surface. The second definition incorrectly broadens the disputed recital to encompass non-elected embodiments that do the opposite—*e.g.*, interrupting or preventing light from reaching the sensing surface.

In view of the complete record, the second definition is inconsistent with this Court's precedent, the elected embodiments, and the overlooked, unequivocal disclosures. Thus, the Panel's construction should be modified to remove the second definition.

B. Overlooked unequivocal disclosures confirm the disputed recital is "*defined* by the impingement of light on the interactive surface," not the absence thereof.

The disputed recital requires "an impingement of an electromagnetic radiation spot on [...] the at least one interactive surface element."[21] As discussed, the Panel overlooked clear and consistent disclosures that state the claimed

[21] Appx127 (claim 1).

"electromagnetic radiation spot" or light spot is "***defined by the impingement of light on the interactive surface or a layer thereof***."[22] This overlooked disclosure alone confirms the scope of the restricted, disputed recital is directed only to embodiments that have light impinging on the surface itself, and not embodiments that cause the wholesale interruption or absence of light on the surface.

In fact, consistent with this Court's precedent, the '170 patent consistently uses the word "spot" in conjunction with a "light spot" or "radiation spot," and further, the '170 patent uses the term "light spot" or "radiation spot" "throughout the entire specification, in a manner consistent with only a single meaning" that requires light impinging on the surface element. *See Homeland*, 865 F.3d at 1377. Additional overlooked disclosures state the "*light spot* [is] formed by impingement of the light from an input object upon the interactive surface,"[23] "directing a beam of light in a direction [] causes impingement of *a spot of light* on" the display,[24] "[t]he *light spot* […] corresponds to the portion of the light beam which is nearer the interactive surface,"[25] and characteristics of the light spot on that surface (*e.g.*,

[22] Appx125 (69:33-39).
[23] Appx125 (70:41-43).
[24] Appx97 (14:25-28).
[25] Appx126 (71:8-12).

size, shape, etc.) change depending on the distance between the object and the surface.[26]

Thus, the unequivocal and overlooked disclosures consistently state the claimed "an electromagnetic radiation spot on […]" the surface element is indeed a light spot on the surface itself and results from light impinging on that surface. The overlooked disclosures align with the Panel's first definition but undermine the foundation of the second, which rests on the incorrect notion that claimed "spot" (on the surface element) does not require light or "electromagnetic radiation."

2. The Court should grant rehearing *en banc* or Panel rehearing to affirm the controlling claim differentiation caselaw.

The Panel incorrectly assumed new hardware ("array processing circuitry") and new output ("array detection output") in dependent claim 28 must be encompassed by the disputed recital in independent claim 1.[27] In context:

- independent claim 1 recites "an input sensor" hardware that provides an output indicating "an impingement of an electromagnetic radiation spot";
- interdependent claim 27 introduces new "array processing circuitry" hardware that receives "individual" outputs from each detector and then provides "an array detection output" based on the same; and

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[26] Appx125 (70:25-28) ("It is thus appreciated that the smaller the distance S, the smaller the light spot impinging on the interactive surface and conversely, the larger the distance S, the larger the light spot.").

[27] *See* Opinion at 10.

- dependent claim 28 depends from claim 27 and recites the "array detection output includes information corresponding to a location of an impingement point of the object on the interactive surface element."

Under this Court's precedent, "[t]he presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim." *Phillips*, 415 F.3d at 1314-15. Applying this precedent, the new hardware/new output in dependent claims 27-28 gives rise to a presumption they are not present in independent claim 1. The Panel incorrectly assumed the opposite and concluded the new "array detection output" in claim 28 must be encompassed by the "output" from the "input sensor" in independent claim 1 because both use the word "impingement."[28] This is incorrect. The plain claim language requires different outputs from different hardware and uses a different antecedent basis to describe the distinct information included in each respective output—*e.g.*, "***an*** impingement of an electromagnetic radiation spot" (claim 1) and "***an*** impingement point of the object" (claim 28).

Finally, even if the presumption was rebutted (it was not) and the input sensor "output" in claim 1 is construed to encompass the "array detection output" in claim 28, the Panel still erred by overlooking disclosures that address this exact embodiment. For this embodiment, the '170 patent expressly states the "array

[28] *See* Opinion at 10.

detection output," which can include information regarding the object's "impingement point," represents "***a light spot defined by the impingement of light on the interactive surface***."[29]

The overlooked embodiment confirms the object's "impingement point" can be derived from the light spot impinging on the surface itself, which further aligns with this Court's precedent because the "impingement point" in dependent claim 28 represents narrower coordinate information computed from the light or "electromagnetic radiation spot" impinging on the surface in claim 1.[30] *See Sprint Spectrum L.P. v. Gen. Access Sols., Ltd.*, 812 F. App'x 999, 1003 (Fed. Cir. 2020) (dependent claims are presumed to be narrower in scope than the independent claims from which they depend).

Thus, the new hardware, new output, and new antecedent basis in claims 27-28 do not rebut the presumption they are not present in independent claim 1, and further, even if rebutted (it was not), the overlooked embodiment still confirms the object's "impingement point" is calculated from light impinging on the surface—

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[29] Appx125 (69:35-48); *see* Appx115 (50:9-17) (discussing the object's 2D "impingement point").

[30] *See* Appx28 ("[t]he disclosure in the '170 patent of calculating an impingement point of the user's fingers, however, does not exclude the embodiment from falling under Patent Owner's propose construction").

i.e., the "electromagnetic radiation spot on" that surface. The second definition is unsupported in either scenario.

CONCLUSION

For the foregoing reasons, Power2B respectfully requests the Court grant this petition for rehearing and modify the Panel's construction and remove the Panel's second definition because (1) the second definition violates this Court's precedent and improperly construes the disputed recital to encompass all embodiments, not the restricted embodiments for the elected group; and (2) the misapprehended and overlooked disclosures demonstrate the inclusion of the second definition in the Panel's construction is untenable. The balance of the remaining issues relate to the substantial evidence that supports the Board's factual findings regarding the deficiencies in the references and should be affirmed without remand.

March 14, 2025

Respectfully submitted,

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ADDENDUM

NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC.,
Appellants

v.

POWER2B, INC.,
Appellee

2023-1630

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2021-01257.

Decided: February 12, 2025

BENJAMIN HABER, O'Melveny & Myers LLP, Los Angeles, CA, argued for appellants. Also represented by ABIGAIL GRACE MCFEE, NICHOLAS WHILT, RYAN KEN YAGURA; WILLIAM FINK, Washington, DC; THOMAS MCCLINTON-HARRIS, Newport Beach, CA.

MARK THOMAS DEMING, Polsinelli PC, Chicago, IL, argued for appellee. Also represented by ADAM PETER DANIELS, Los Angeles, CA; JASON WIETJES, Dallas, TX.

Before HUGHES, MAYER, and STARK, *Circuit Judges*.

STARK, *Circuit Judge*.

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, "Samsung") filed for *inter partes* review ("IPR") of a patent owned by Power2B, Inc. ("Power2B"), which is directed to interaction with an interactive screen on a device. Central to the appeal is the Board's construction of "an impingement of an electromagnetic radiation spot," which the Board construed as requiring electromagnetic radiation to perform the impingement. J.A. 29-30. Applying this construction, the Board found that Samsung's asserted prior art did not disclose this limitation of the challenged claims. Samsung appeals, arguing that "impingement" should be given its plain and ordinary meaning, which includes an object interrupting or blocking electromagnetic radiation without that object having to project or reflect radiation. We conclude that the Board construed the claim language too narrowly. Accordingly, we vacate and remand for the Board to consider Samsung's challenges under the correct construction.

I

A

Power2B's U.S. Patent No. 9,317,170 (the "'170 patent") is entitled "Interactive Devices." J.A. 50. It claims priority to an application with a priority date of March 14, 2007. The '170 patent is directed to interactive devices, including Personal Digital Assistants, and methods for users to interact with those devices. In some embodiments, a user interacts with the device using a light-emitting stylus or remote, beaming light onto the surface of the device. In other embodiments, a user interacts with the device using a non-light-emitting stylus or the user's finger to select items on the interactive surface. For example, a device

may emit beams of light, i.e., electromagnetic radiation, that are interrupted by the user's finger when the finger approaches the screen, and the device then detects the interruption of those beams of light.

At issue in this appeal is claim 1, which recites:

> An interactive assembly comprising:
>
> > at least one interactive surface element, at least a first region of the at least one interactive surface element having first user sensible functionality and at least a second region of the at least one interactive surface element having second functionality, different from the first user sensible functionality;
> >
> > at least one input sensor located in propinquity to at least one of the at least one interactive surface element, each of the at least one input sensor being configured to provide an output indicative of *an impingement of an electromagnetic radiation* spot on at least one of the at least one first region and the at least one second region of the at least one interactive surface element;
> >
> > . . .
> >
> > wherein the at least one input sensor includes a detector assembly arranged at at least one edge of the interactive surface element;
> >
> > . . . and wherein the arrangement of detector elements is configured to detect electromagnetic radiation at a baseline level and to sense a position of at least one object with respect to the interactive surface

> element and wherein the utilization circuitry is further configured to provide an output according to a location of at least one detector element in the arrangement for which at least one of an amount of radiation detected and a change in the amount of radiation detected exceed a first predetermined threshold.

J.A. 127 (emphasis added).

Also involved in this appeal is claim 28, which depends from claims which depend from claim 1, and recites:

> An interactive assembly according to claim 27, wherein the array detection output includes information corresponding to a location of an *impingement point* of the object on the interactive surface element coinciding with a viewing plane.

J.A. 128 (emphasis added). Claim 30, also at issue, similarly claims "impingement of an electromagnetic radiation spot." *Id.*

B

Samsung's petition challenges the patentability of Power2B's claims based on prior art including U.S. Patent App. Pub. No. 2002/0118177 ("Newton"), "Protected Touch Panel Display System." J.A. 1643. Newton is directed to a display screen located inside a protective barrier, where sections of the screen are touch activated. Emitters along the protective barrier emit energy beams, and detectors detect when a user touches the display screen by interrupting the energy beams. Newton states that "[a] finger, stylus or other pointing device placed on or adjacent to the touch panel display screen will interrupt the energy beams emitted by the emitters. In response to detecting the interruption of the energy beams, the detectors may generate signals from which the touch panel display system is able

to calculate the location of the touch on the touch panel display screen." J.A. 1652 ¶ 25.

The second prior art reference Samsung relies on is U.S. Patent App. Pub. No. 2003/0034439 ("Reime"), entitled "Method and Device for Detecting Touch Pad Input." J.A. 1600. Reime is directed to "[a] method and system for detecting the presence of an object at a touch pad device" having designated interaction areas on the screen and "optical sensor components, each including an optical receiver and . . . emitters positioned at opposite sides of the receiver such that when an object is present at the touch pad device, the changes in the receiver output can be used to determine the location of the object." J.A. 1600. Reime depicts pencils and fingers interacting with the touchpad and explains:

> When a user uses an object such as a pencil **100** or a finger **100' (FIG. 2A)** to touch the touch pad **5,** some light **110** emitted from the emitter **10** encounters the surface of the object **100**. Part of the light **110** reflects off the object **100** and is received by the receiver **30**. Likewise, some light **120** emitted from the emitter **20** encounters the surface of the object **100** and then reflects off the object **100** to receiver **30**.

J.A. 1620. In short, Reime's receivers rely on light reflected from objects to determine the location of the object over the touch pad.

C

Samsung petitioned for IPR of claims 1, 2, 6-8, 13-14, 16, 18, 19, 21-23, 26, and 30 of the '170 patent. In its petition, Samsung contended that the claim terms did not need explicit construction. Samsung also argued that the impingement limitation was met by references, including Newton, which disclosed a user's finger interrupting beams of light over portions of an interactive surface. Samsung alternatively argued that Reime disclosed the relevant

limitation because it disclosed light hitting an impinging object and then reflecting back to a detector element.

In its Institution Decision, the Board agreed with Samsung that the claim terms did not need to be construed but added that Samsung's implicit construction, which would allow an *object* to *impinge*, was correct. The Board also made a "preliminary determination to clarify that a showing of 'an impingement' requires an act of touching, and additionally, a user touching the 'electromagnetic radiation spot' is sufficient without a separate requirement that light is reflected as a result of that touching." J.A. 7567.

In its Final Written Decision, however, the Board reconsidered its understanding of the claims. It expressly construed "impingement of an electromagnetic spot" as "an area of reflected or projected radiation," requiring that the electromagnetic radiation do the impinging – and, crucially, *not* allowing that an object (such as a finger) do the impinging merely by interrupting or blocking electromagnetic radiation. J.A. 17-18. In doing so, the Board aligned itself with a construction adopted by a district court in parallel litigation. *See Power2B, Inc. v. Samsung Electronics Co.*, No. 6-20-cv-01183 (W.D. Tex. Nov. 10, 2021), ECF No. 63 (construing "impingement of an electromagnetic radiation spot" to mean "an area of reflected or projected radiation").

Turning to the obviousness analysis, the Board noted that Samsung had conceded that Newton did not teach the impingement limitation under Power2B's construction, which the Board was adopting. It then found that Reime also did not teach that limitation. Therefore, the Board found, Samsung had not shown that the challenged claims were unpatentable as obvious.

Samsung timely appealed. The Board had jurisdiction under 35 U.S.C. §§ 6, 316(c). We have jurisdiction under 28 U.S.C.§ 1295(a)(4)(A) and 35 U.S.C. §§ 141(c), 319.

II

Claim construction is a question of law we review de novo when, as here, it is based solely on intrinsic evidence. *See Arendi S.A.R.L. v. Google LLC*, 882 F.3d 1132, 1133 (Fed. Cir. 2018); *see also Trustees of Columbia Univ. v. Symantec Corp.*, 811 F.3d 1359, 1362 (Fed. Cir. 2016) ("The construction of claim terms based on the claim language, the specification, and the prosecution history are legal determinations.").

III

Samsung argues that the Board's construction of "an impingement of an electromagnetic radiation spot" is improperly narrow, as it encompasses only impingement by reflection and projection of electromagnetic radiation while excluding impingement by interruption or blocking of electromagnetic radiation. We agree with Samsung.

A

As an initial matter, we reject Power2B's contention that Samsung forfeited the claim construction position it presses upon us. It is true, as Power2B emphasizes, that Samsung did not expressly propose a claim construction to the Board. However, Samsung consistently advanced the position before the Board, as it does here, that the '170 patent's claims use "impingement" in a manner broad enough to capture an object interrupting or blocking an electromagnetic radiation spot. Samsung also consistently argued against Power2B's narrower "implied construction" precisely on the basis that Power2B "would exclude impingement that causes the absence or interruption of radiation." J.A. 7523 n.3. Samsung further argued, as it does here, that Power2B's construction is too narrow and would exclude embodiments described in the specification.

The Board understood Samsung's position as a proposed claim construction. *See* J.A. 19 ("[Samsung] argues that [Power2B]'s proposed construction 'is not required by

the claim language.' [Samsung] also argues that the recitations of touching or contacting in dependent claims 12, 15, and 28 support [Samsung]'s position because independent claim 1 must include touching within its scope.") (internal citation omitted); *see also* J.A. 15-16. In its Institution Decision, the Board preliminarily adopted Samsung's understanding of the claims. *See* J.A. 7567. And in the Final Written Decision, although siding with Power2B, the Board recognized the parties had a claim construction dispute and resolved it. J.A. 17-18 ("[Samsung] has provided responsive argument disputing [Power2B]'s claim constructions.").

In these circumstances, there is no forfeiture. *See generally Summit 6, LLC v. Samsung Electronics Co.*, 802 F. 3d 1283, 1290 (Fed. Cir. 2015) (holding that claim construction argument was not forfeited or waived when consistent with arguments below).[1] Thus, we will review the Board's claim construction.

B

In its Final Written Decision, the Board construed "an impingement of an electromagnetic radiation spot" as limited to "an area of projected or reflected radiation." J.A. 17-18. That is, the Board construed the claim term as limited to electromagnetic radiation impinging on the surface, while finding that interrupting or blocking the

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[1] Power2B points to purported inconsistencies between the claim construction Samsung proposed in district court litigation and the position Samsung took at the Board. However, even Power2B does not contend that Samsung should be judicially estopped from pressing the construction it is advocating to us, and any inconsistency (if there was any) in its positions does not support a finding of forfeiture, given the record before us.

electromagnetic radiation is outside the scope of the claims. The Board's construction further requires that the reflected or projected electromagnetic radiation must land on the interactive surface element. J.A. 20-21. Otherwise, according to the Board, nothing would be "impinged upon." J.A. 20 ("[I]ndependent claims 1 and 30 require that either the first or second region on the interactive surface element be impinged on."). We disagree with the Board.

As properly construed, in the context of the challenged claims, "impingement of an electromagnetic radiation spot" must include "reflected, projected, and interrupted or blocked radiation." Oral Arg. at 00:40-58, 3:46-57.[2] In other words, when a finger or non-light-emitting stylus interrupts or blocks a beam of electromagnetic radiation, and does so over a certain spot on the surface of a device, the claim limitation is satisfied. Contrary to the Board's construction, as articulated by Power2B on appeal, the "electromagnetic radiation spot on . . . [the] interactive surface element" does not "require[that] radiation imping[e] on the surface element" and, hence, does not exclude interrupting or blocking radiation. Response Br. at 19.

In reaching a different conclusion, the Board relied on the doctrine of claim differentiation, pointing to claim 28, which depends from claims depending from claim 1. The Board emphasized that claim 1 requires "that either the first or second region on the interactive surface element be impinged on," J.A. 20, while claim 28, by contrast, claims "an impingement point of the object on the interactive surface" element, J.A. 22. To the Board, this meant that "[t]he applicant knew how to claim an 'object' and used the term in claim 28 to require impingement by an object." J.A. 22. As a result, the Board read claim 28, but not claim 1, as

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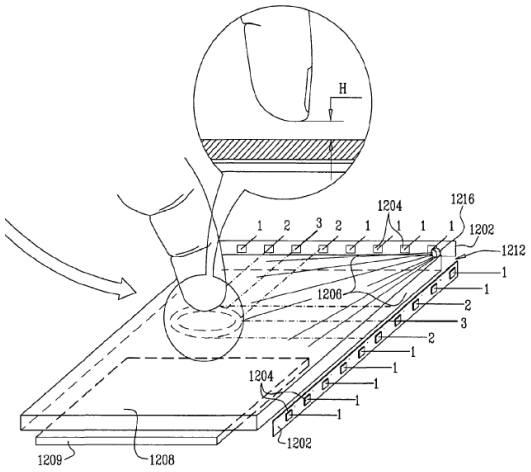
[2] *Available at* https://oralarguments.cafc.uscourts.gov/default.aspx?fl=23-1630_11042024.mp3.

allowing an object to do the impinging, by interrupting or blocking the electromagnetic radiation.

However, as Samsung persuasively argues, claim 28 actually supports Samsung's construction, not the Board's. Samsung writes: "if claim 28 requires impingement by an object, then claim 1's impingement must [also] be broad enough to encompass impingement by an object." Opening Br. at 26. We agree. *See Littelfuse, Inc. v. Mersen USA EP Corp.*, 29 F.4th 1376, 1380 (Fed. Cir. 2022) ("By definition, an independent claim is broader than a claim that depends from it, so if a dependent claim reads on a particular embodiment of the claimed invention, the corresponding independent claim must cover that embodiment as well.").

The '170 patent's specification provides further support for our construction, especially as the specification discloses embodiments that appear to be excluded under Power2B's narrower construction, an outcome our precedents disfavor. *See Oatey Co. v. IPS Corp.*, 514 F.3d 1271, 1277 (Fed. Cir. 2008) ("[W]here claims can reasonably [be] interpreted to include a specific embodiment, it is incorrect to construe the claims to exclude that embodiment, absent probative evidence on the contrary."). For example, Figure 18A, reproduced below, shows a finger interrupting beams projected from a corner of the interactive screen, without showing those beams being reflected or projected back onto the device:



J.A. 73 (Fig. 18A).[3] This embodiment, then, appears to fall outside the scope of the claims under the Board's

[3] The patent describes Figure 18A as showing "one or more electromagnetic radiation emitting sources" and a finger that interrupts light projected out from "a single [infrared] emitting LED **1216** . . . at or generally adjacent to an intersection of the mutually perpendicular edges **1206** along which detector elements **1204** are arranged." J.A. 114 ('170 patent, 48:54-57, 64-67). This is further expected with respect to a similar figure, Figure 18B: "When the user's finger touches or is located in propinquity to interactive surface element **1228,** the amount of light detected by one or more of detector elements **1224** is typically changed relative to the baseline . . . . [The circuitry then] determines whether the absolute amount of light detected by each of the detector elements **1224** is below a predetermined threshold, or whether the change in the amount of light detected by each of the detector elements **1224** exceeds a predetermined threshold." J.A. 116 ('170 patent,

construction. *See also* J.A. 55, 97 ('170 patent, 13:14-20) (Fig. 1E depicting embodiment in which user's finger may "Point to Buy" as sensors on device surface detect "impingement" in form of interruption or blocking of electromagnetic radiation).

To be sure, the specification also discloses embodiments in which electromagnetic radiation is reflected or projected onto the device. *See* J.A. 56, 58 (Figs. 1F, 2B). We agree that these embodiments must be within the scope of the claims as properly construed – and they are captured by the claims under Samsung's proposed construction. The claims are properly understood as including these embodiments (in which the impingement is the result of reflecting or projecting electromagnetic radiation onto the surface of a device), but not as limited to them, as the claims also include embodiments in which electromagnetic radiation is merely interrupted or blocked instead. *See generally Hill–Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014) ("[W]e do not read limitations from the embodiments in the specification into the claims."). Fundamentally, nothing in the specification would cause a person of ordinary skill in the art to read the claims as excluding from "impingement" those instances in which electromagnetic radiation is interrupted or blocked.

Nothing in the prosecution history alters our conclusions. In particular, as the Board also recognized, at no point during prosecution did the patentee disclaim the Figure 18 embodiments. J.A. 30 ("Further, based on the current record, we preliminarily find that the prosecution

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51:42-53). While the finger may, therefore, reflect light, the patent explains that the detectors would also detect the *absence* or *decrease* of light, which would result from, for example, interrupting or blocking the light.

history does not reveal an intentional disclaimer or disavowal of claim scope by the inventors.").

In sum, we agree with Samsung as to the proper construction: impingement includes both (1) electromagnetic radiation being reflected or projected onto the interactive surface of a device, and (2) interrupting or blocking electromagnetic radiation from reaching the surface, without reflecting or projecting radiation onto the surface.

C

Samsung requests that if we agree with its claim construction, as we do, we vacate and remand for the Board to reevaluate whether Newton and Reime render obvious the impingement limitation of the challenged claims. Oral Arg. at 8:41-54 ("If you agree on the claim construction issue, . . . you just remand it back to . . . the Board for further proceedings because that claim construction error, I think, infected both of the grounds."). We will do so. The Board will also need to evaluate, in the first instance, whether other limitations of the challenged claims are disclosed in Samsung's asserted prior art.

IV

We have considered Power2B's remaining arguments and find them unpersuasive. Accordingly, we vacate and remand to the Board to evaluate Samsung's obviousness contentions under the correct claim construction.

VACATED AND REMANDED

COSTS

Costs awarded to Samsung.

FORM 19. Certificate of Compliance with Type-Volume Limitations **Form 19**
July 2020

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITATIONS

Case Number: 23-1630

Short Case Caption: Samsung Electronics Co., Ltd, et al. v. Power2B, Inc.

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Date: 03/14/2025

Signature: /s/ Adam P. Daniels

Name: Adam P. Daniels