

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

EMPIRE TECHNOLOGY DEVELOPMENT LLC,
Patent Owner.

Case No. IPR2024-00896
U.S. Patent No. 8,798,120

**PETITIONER'S RESPONSE TO PATENT OWNER'S DIRECTOR
REVIEW REQUEST**

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I. INTRODUCTION

This is at least the third time Patent Owner Empire Technology Development LLC has made this claim construction argument. It was correctly rejected the first two times (by the district court judge and the Board panel), and should similarly be rejected here. Empire does not dispute the correctness of the adopted district court construction for the claim term “idle power consumption”: “power consumed by the mobile station when the mobile station is powered on and waiting to send.” Final Written Decision (“FWD”), Paper 33, at 11 (Dec. 9, 2025) (citing Ex-1050, 12). Instead, Empire invites the Director to further construe the construction in a way that contradicts the prior decisions and all evidence of record. Solely to avoid prior art, Empire seeks to further construe “waiting to send” to require the claimed “first and second circuitry” be *fully* powered on when idling. But nothing in the technology, much less the claims, specification, prosecution history, or record, supports its view.

After carefully considering Empire’s arguments, both the district court and the panel explained that the claimed “idle power consumption” means the “power consumed by the *mobile station*” when it is powered on. To be clear, this construction does not contemplate where on the “continuum of power” between fully off and fully on the other constituent circuits and components (like the claimed “first and second circuitry”) may lie. The Director should decline Empire’s invitation to further construe the construction.

Beyond its flawed claim construction argument, Empire also asserts that the Li-Siam combination does not disclose the claimed invention. But Empire is wrong for all the reasons Samsung already explained and the Board panel already accepted. Notably, Empire merely attacks the references individually, rather than properly addressing what the combination discloses.

Finally, the circumstances of this proceeding are not exceptional. Instead, Empire disagrees with the Board panel; there is nothing exceptional about that. And the proceeding is plainly not subject to the Interim Processes for PTAB Workload Management, including consideration of any alleged “settled expectations.”

The Director should deny Empire’s Director Review request.

II. THE PANEL PROPERLY CONSTRUED “IDLE POWER CONSUMPTION” TO REQUIRE ONLY THAT THE “*MOBILE STATION* IS POWERED ON” AND REJECTED EMPIRE’S ATTEMPT TO IMPORT ADDITIONAL REQUIREMENTS

In an attempt to undo the final, well-reasoned claim construction of the panel, which adopted the district court’s similarly well-reasoned construction, Empire selectively quotes disparate portions of the record, omitting from its request portions that undermine its position. But the record is clear: the panel/district court’s construction is consistent with the intrinsic and extrinsic evidence.

A. The panel adopted the district court’s construction and reasoning, which explicitly stated that “idle power consumption” does not require *the circuitry* to be turned on.

The district court construed the term “idle power consumption” to mean

“power consumed by the mobile station when the *mobile station* is powered on and waiting to send.” Ex-1050, 12 (emphasis added). This construction addresses the idle mode power usage of the entire mobile station, rather than that of the subsidiary components, like the “first and second circuitry.” Notably, Empire omits a key portion of the district court’s *Markman* order: “[n]or must *all the circuitry* of the mobile station be turned on for it to be ‘idle.’” Ex-1050, 12. In other words, the district court explicitly construed this term to require only that the *mobile station* is powered on, not that all the *circuits* must also be powered on. This is the same way the Board construed the term. FWD at 11 (adopting district court’s construction).

Contrary to Empire’s suggestion that the panel contravened the district court’s construction, the panel wholly adopted that court’s construction, just as it said it did. Both the district court and the panel determined that the *mobile station* must be powered on when idling and noted that not all the mobile station’s *circuitry* must be fully powered on when idling. These determinations are entirely consistent.

B. The construction is supported by the claims and specification, neither of which require the claimed *first and second circuitry* to be on when idling.

As the Board explained, claim 25 recites a mobile station having multiple components, including “first and second [transmission]¹ circuitry” and a

¹ Each of the first and second circuits is “configured to process signals *for transmission* by” the respective first and second antenna. Ex-1001, 19:4–8.

“controller.” FWD at 12. The claimed controller receives a control signal, which is “based, at least in part, on a power consumption of the first and second circuitry” and “at least in part[] on *an idle power consumption of the mobile station*.” Ex-1001, cl. 25. Giving the clear words of claim 25 their “ordinary and customary meaning,” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005), the claimed “idle power consumption” plainly refers to the recited mobile station, not its subsidiary transmission circuits (which are discussed elsewhere in the claim).

The specification similarly does not require that the claimed circuitry be powered on when the mobile station is idling. The specification includes several disclosures about “idle power consumption,” some describing the transceivers and others describing the mobile station. Regarding the mobile station, the panel pointed to one disclosure that “idle time may include times during which the mobile station 410 is waiting to send data over the communications channel.” FWD at 13 (citing Ex-1001, 8:55–58). As the panel correctly observed, this exemplary disclosure aligns with the claim language, which places no limit on the power-state of the mobile station’s constituent “first and second circuitry” when idling. FWD at 13–14. Moreover, the specification explains that certain subsidiary circuits may even be turned off when idling: “Even if the *idling transceivers turn off their transmission chains*, some idle power may be consumed due to leakage current or other effects.” Ex-1001, 3:5–7 (emphasis added). Thus, transceiver circuits may be on and idling

even while their “*transmission* chains,” *i.e.*, the first and second circuits (further recited as “configured to process signals *for transmission*”), may be turned off.

Even if it were true that, in some disclosed examples, the “first and second circuitry” were powered-on in an idle mode, this would not undermine the panel’s determination. The Federal Circuit has “repeatedly warned against confining the claims to” examples in the specification. *Phillips*, 415 F.3d at 1323; *see also, e.g., GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (vacating construction that read limitations from embodiments into claim). There is simply no support in the specification to limit “idle power consumption of the mobile station” only to instances where all of the mobile station’s subsidiary circuits are fully powered on. Indeed, such a construction would exclude the specification’s example of idling powered-off transceivers. *See GE Lighting*, 750 F.3d at 1311 (claims should not be construed to exclude a disclosed embodiment).

Instead of pointing to anything in the claim language or specification requiring that the “first and second circuitry” be fully powered on when the mobile station is idling (because it cannot), Empire sets up a circular argument—that the mobile station “cannot be waiting to send” “if the transceivers are powered off (and thus not idling).” Request at 6. The premise of this argument presupposes that the mobile device cannot be idling when the transmitters are powered off. But, consistent with the district court, the panel construed “idle power consumption” to require only that

the mobile station was powered on and waiting to send data, regardless of the power-state of the subsidiary circuits, including every transmit chain. Empire just ignores that electronic devices can and do exist in states that are neither fully powered-on nor fully powered-off, *i.e.*, on a continuum of power. *See, e.g.*, Ex-2013, 50:12–13 (“[P]owering is a continuum.”).

In sum, the panel properly observed that the claims and specification do not support Empire’s narrow interpretation of “idle power consumption.”

C. The panel’s construction is consistent with the petition, which Empire misrepresents in its request.

Empire cites a taken-out-of-context quote in Samsung’s petition that it believes confirms Samsung’s position that the claimed “first and second circuitry” must be powered on when the mobile station is idling. *See* Request for Director Review (“Request”), Paper No. 34, at 6–7 (Jan. 8, 2026). But this is not, and never has been, Samsung’s position. In context, that quote follows a description that the *mobile station* consumes some power while idling. *See, e.g.*, Petition (“Pet.”) at 41 n.12. This includes many “circuits” (which of course encompasses far more than just the claimed “first and second circuitry” for transmission) and “leakage current” effects in turned-off circuits. The panel properly understood Samsung’s claim construction argument, which it made consistently from its petition throughout briefing and oral argument. *See, e.g.*, Petitioner’s Reply, Paper 22, at 2–9 (June 10, 2025); Hearing Transcript, Paper 32, at 9:13–11:19 (Oct. 14, 2025).

To be clear, despite Empire's misleading quotes, Samsung's expert Dr. Valenti did *not* agree that the all of the mobile station's circuitry must be "powered on" when the mobile station was idling. Empire omits from its request Dr. Valenti's full testimony (immediately after the statement Empire cites):

Q: So under the plain and ordinary meaning of "idle power consumption," the circuits are powered on, right?

A: No. I would say they are not powered off, which may sound strange, but powering is a continuum. So fully — they are certainly not fully powered on. They are not consuming their maximum power, but they are also not fully powered off in the sense that they are not consuming zero power. So it is something in between.

Ex-2013, 50:8–18. In other words, consistent with Dr. Valenti's testimony, Samsung's petition identified that while the mobile station is idling, certain components may still draw leakage current and thus consume some amount of power—but nothing in the '120 Patent specifically requires the claimed "first and second circuitry" be wholly powered on when the mobile station is idling. The panel understood Samsung's position and appropriately adopted it.

D. The panel's construction is consistent with the prosecution history, which includes no express statements relating to "idle mode."

Empire repeats the same prosecution history argument the panel rightfully rejected: that a "reasonable interpretation" of the examiner's statements is that the "sleep mode" described in the prior art differs from the "idle power consumption" required by claim 25. Request at 8; FWD at 14. But the examiner said no such thing.

While consideration of the prosecution history may in some cases inform the claim construction inquiry, “it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Phillips*, 415 F.3d at 1317. Here, the panel explained the ’120 Patent’s prosecution history did not clarify the meaning of the disputed term because the examiner did not “particularly address[] the claimed idle power consumption of the mobile station as compared to a ‘sleep mode.’” FWD at 14. Thus, the panel correctly found the statements Empire pointed to were less useful to claim construction than the claim language and specification. *See Netcraft Corp. v. eBay, Inc.*, 549 F.3d 1394, 1401–02 (Fed. Cir. 2008) (noting prosecution history less helpful where the examiner’s statements were “not entirely clear”).

E. The panel’s construction is supported by expert testimony.

To clarify Empire’s mischaracterization of the expert testimony, Samsung’s expert repeatedly and consistently testified that the electronic components claimed in claim 25 exist “in any of a continuum amount of power usage states.” Ex-2013, 60:19–61:9; *see also id.* at 50:12–13. In other words, Dr. Valenti testified that a certain component could draw some amount of power despite not being fully powered on. *Id.* at 50:14–18 (“[The claimed circuits] are not consuming their maximum power, but they are also not fully powered off in the sense that they are not consuming zero power. So it is something in between.”). Further, as Dr. Valenti explained, the ’120 Patent describes that even when a component is off, it may still

be consuming some power through leakage current. *See, e.g., id.* at 56:3–22; 60:5–11; ’120 Patent at 3:5–7 (“Even if the idling transceivers turn off their transmission chains, some idle power may be consumed due to leakage or other effects.”).

Accordingly, Dr. Valenti testified that claim 25 requires only that when the mobile station is idling and waiting to send data, the mobile station itself is powered on. The power status of the mobile stations subsidiary components—*i.e.*, where each component falls on the continuum of power between “off” and “on”—is not claimed. *See* Ex-2013, 53:13–54:1. This testimony is consistent with the construction adopted by the panel, which declined to further limit its construction to require that the first and second circuitry be in a particular power state.

* * *

Although Empire misleadingly cites disparate portions of the ’120 Patent and omits key disclosures and context, the panel’s careful and detailed claim construction analysis is consistent with the district court’s, Samsung’s petition, the expert testimony, and indeed is required by the patent’s intrinsic record.

The Director should thus decline Empire’s desperate third attempt for someone, anyone, to rewrite the claim language.

III. EMPIRE’S INDIVIDUAL ATTACKS ON LI AND SIAM CANNOT DEFEAT THE LI-SIAM COMBINATION

In addition to its flawed arguments regarding the panel’s claim construction, Empire argues that the Li-Siam combination does not disclose “a control signal

based, at least in part, on an idle power consumption of the mobile station.” Request at 10. Specifically, Empire argues that (1) Li does not disclose an idle device, waiting for signals, changing from MIMO mode to SIMO mode, and (2) Siam does not disclose “idle mode” or idle power consumption. But these arguments improperly attack the references individually, rather than considering what the Li-Siam *combination* teaches the ordinarily skilled artisan. In other words, “[t]hat the proposed *combination* of [Li] and [Siam]—rather than one of the individual references—discloses the disputed claim limitation[] does not defeat the Board’s conclusion of obviousness.” *Fleming v. Cirrus Design Corp.*, 28 F.4th 1214, 1222 (Fed. Cir. 2022) (emphasis in original).

These arguments are not only legally unsound, they are also inconsistent with the record. As the panel explained, the Li-Siam combination discloses “a control signal based, at least in part, on an idle power consumption of the mobile station.” FWD at 28–29. Specifically, the panel considered identical arguments from Empire regarding Li but found them unpersuasive, noting that Empire improperly sought to “isolat[e] Li’s discussion of ‘idle mode’ from the reference as a whole.” FWD at 28 (citing *In re Gorman*, 933 F.2d 982, 986 (Fed. Cir. 1991) (“[T]he test is whether the teachings of the prior art, taken as a whole, would have made obvious the claimed invention.”). Li describes the problem of the power consumed by “a station in idle mode waiting for incoming signals,” a problem that Li discloses can be solved by

sending a control signal to switch operating modes, *e.g.*, from MIMO to SIMO. *See* Ex-1005 ¶¶ 18, 19, 24, 25. The panel appropriately understood these disclosures as suggesting the disputed limitation. FWD at 28–29. The panel then went further, explaining, “[t]o the extent Li does not teach inputs or other variables relevant to power consumption, Siam provides those teachings.” FWD at 29 (citing Ex-1006, 876–77). In the portion cited by the Board, Siam discloses methods of “improv[ing] the power efficiency” of a wireless system by dynamically selecting between “one out of four modes (SISO, SIMO, MISO, or MIMO).” Ex-1006, 877.

Understanding both Li and Siam in context, the panel correctly determined that the skilled artisan, seeking to minimize a wireless system’s power consumption, “would have considered the inefficient energy use in [Li’s] idle mode along with Siam’s transmission and circuit power” to switch between operating modes. FWD at 29. This finding is supported by the both references’ disclosures, and Empire’s individual attacks on isolated disclosures from each reference cannot undercut it.

Empire further argues that because the panel disagreed with Samsung’s expert analysis on the separate independent claim 29, the panel should have wholly disregarded his testimony regarding claim 25 or any other issue. Request at 11–12 (citing *Interactive Commc’ns Int’l, Inc. v. Blackhawk Network, Inc.*, IPR2024-00465, Paper 40, at 4 (PTAB Oct. 9, 2025)). But *Blackhawk* cannot be read so broadly. In that case, the panel specifically found the expert was “not credible as to

multiple material aspects of his testimony.” *Blackhawk*, IPR2024-00465, Paper 40, at 4. On the contrary here, the panel simply disagreed with Dr. Valenti’s conclusions on claim 29, finding they were based on hindsight. The panel did not make the type of expert credibility determination at issue in *Blackhawk*. Indeed, no portion of the panel’s determination on claim 29 turned on whether Dr. Valenti was “not credible”; the word “credible” does not even appear anywhere in the FWD. *See generally* FWD at 41–49. Instead, the panel simply found that the record did not support Dr. Valenti’s argument that the Li-Siam-Tiirola combination rendered claim 29 obvious.

IV. CUI-2003 DISCLOSES “IDLE POWER CONSUMPTION”

As an initial matter, Empire admits that its primary argument regarding Cui-2003 rises and falls with its claim construction arguments. Request at 13 (asserting “[t]he Board’s failure to follow the district court’s construction led to its erroneous finding” regarding Cui-2003). Its challenge to Cui-2003, specifically that “[u]nder the district court’s construction,” Cui-2003 does not disclose a mobile station “waiting to send data,” thus fails for the same reasons explained *supra*, II.A. Again, the district court’s and the panel’s constructions identically require only that the claimed “mobile station be powered on and waiting to send.” Neither construction says anything about the required power status of the subsidiary components, including the claimed “first and second circuitry.” And again, as the district court explained (omitted in Empire’s brief), the construction does not require “all the

circuitry of the mobile station [to] be turned on for it to be ‘idle.’” Ex-1050, 12.

Empire argues that when in “sleep mode,” Cui-2003’s system does not consume sufficient power for it to be “idling” in the context of the ’120 Patent. Request at 14. As the Board explained, however, this argument presupposes limitations not present in the claim; nothing in the claim language nor the construction requires some particular level of power consumption. FWD at 39. And “[i]t is improper for a court to add ‘extraneous’ limitations to a claim.” *Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 950 (Fed. Cir. 1993) (internal quotation omitted). Empire’s challenges to Cui-2003 are thus similarly unsupported by the record.

V. NO EXCEPTIONAL CIRCUMSTANCES WARRANT REVIEW

This is not an exceptional proceeding. *First*, Empire raises “settled expectations” arguments that the Director has explicitly clarified do not apply to this proceeding. Specifically, the Memorandum setting forth the processes that would consider “settled expectations” stated that those processes would “be implemented in IPR and PGR proceedings where the deadline for the patent owner to file a preliminary response has not yet passed.” Interim Processes for PTAB Workload Management Memorandum at 3 (Mar. 26, 2025). As of that date, Empire’s deadline to file a preliminary response had long since passed—six months prior, on September 18, 2024. *See Crowdstrike, Inc. v. GoSecure, Inc.*, IPR2025-00068, Paper 25, at 2 n.3 (June 25, 2025) (noting patent owner’s request to file discretionary

denial briefing was denied “because these proceedings are not subject to the Interim Processes”); *see also* FAQs for Interim Processes for PTAB Workload Management, FAQ 5, *available at* <https://www.uspto.gov/patents/ptab/faqs/interim-processes-workload-management> (“Interim Workload FAQs”) (for proceedings in which the patent owner filed a preliminary response before March 26, 2025, “[t]he panel will not address any new factors outlined in the Process Memorandum.”).

Second, Empire bizarrely takes issue with Samsung waiving its invalidity defenses in district court. But this is an action contemplated by (indeed, encouraged by) the IPR statutes and Office guidance. Specifically, before the panel issued its Institution Decision, and consistent with then-current precedent, Samsung submitted a *Sotera* stipulation stating that it would “not pursue in district court any ground of invalidity raised or that could have been reasonably raised in the corresponding IPR.” Institution Decision, Paper 15, at 11 (Dec. 13, 2024) (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 16–19 (PTAB Dec. 1, 2020) (then precedential as to § II.A)). Pursuant to that stipulation, Samsung then did not raise any invalidity defenses in the district court trial. In other words, Samsung did exactly as it was supposed to under then-standard precedent. As the Office has explained, in proceedings like this one (in which the patent owner filed a preliminary response before March 26, 2025), panels will “address any discretionary considerations . . . as enumerated in previously existing Board precedent (including

Fintiv, *General Plastic*, and *Advanced Bionics*) and the Consolidated Trial Practice Guide (Nov. 2019).” Interim Workload FAQs at FAQ 5.

Furthermore, this process ensured that invalidity was not litigated in two forums—the exact purpose of the IPR system contemplated by Congress. *See, e.g.*, 35 U.S.C. § 315(e)(2) (describing that an IPR petitioner is estopped from asserting invalidity grounds in district court that it raised or could have raised in an IPR proceeding). Contrary to Empire’s assertions, Samsung’s election to litigate invalidity only before the Board was consistent with “the purpose of an IPR proceeding.” Request at 15. And Empire’s suggestion that the Director de-institute this nearly-concluded proceeding, over a year after its institution and after the Board and the parties have expended significant resources in reaching a final decision, plainly undermines Empire’s alleged concerns for judicial efficiency.

VI. CONCLUSION

The Director should decline Empire’s invitation to re-construe the panel’s construction, which is consistent with the district court’s construction and the intrinsic and extrinsic evidence. Similarly, the Director should deny Empire’s request to reconsider the Board’s well-supported obviousness findings, as well as its suggestion that the Director de-institute the proceeding based on considerations that do not apply to this proceeding.

In sum, the Director should deny Empire’s Director Review request.

Date: January 16, 2026

Respectfully submitted,

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

I hereby certify that on January 16, 2026, I caused a true and correct copy of the foregoing PETITIONER'S RESPONSE TO PATENT OWNER'S DIRECTOR REVIEW REQUEST to be served electronically on counsel for Patent Owner at the following addresses:

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