NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

EMERSON ELECTRIC CO.,
Appellant

v.

SIPCO, LLC,
Cross-Appellant

2019-1301, 2019-1490

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2017-00359.

Decided: September 30, 2020

DOUGLAS HALLWARD-DRIEMEIER, Ropes & Gray LLP, Washington, DC, for appellant. Also represented by JAMES RICHARD BATCHELDER, JAMES LAWRENCE DAVIS, JR., DANIEL W. RICHARDS, East Palo Alto, CA; STEVEN PEPE, New York, NY.

GREGORY J. GONSALVES, Gonsalves Law Firm, Falls Church, VA, for cross-appellant.

Before LOURIE, MOORE, and O'MALLEY, *Circuit Judges*.

O'MALLEY, *Circuit Judge*.

This is an appeal from an inter partes review proceeding requested by Emerson Electric Co. ("Emerson"). The U.S. Patent Trial and Appeal Board (the "Board") concluded that claims 32, 34, 37–38, 55–57 and 59 (the "Ground 3 claims") of U.S. Patent No. 6,437,692 ("the '692 patent") are unpatentable because they are anticipated, or would have been obvious over the Cunningham reference. J.A. 33–51. The Board concluded, however, that Emerson failed to establish, by a preponderance of the evidence, that claims 1, 3–8, and 11–14 (the "Ground 1 claims") and claims 24–31, 42, 43, 46–49, 51–54 and 60–64 (the "Ground 2 claims") are unpatentable. J.A. 51. Emerson appeals the Board's findings of patentability with respect to the Ground 2 claims. Patent Owner SIPCO, LLC ("SIPCO") cross-appeals the Board's invalidity findings with respect to the Ground 3 claims. Because we agree with the Board's claim construction of the "low-power radio frequency signal" limitations and conclude that substantial evidence supports the Boards underlying factual findings, we *affirm*.

I. BACKGROUND

A. The '692 Patent

The '692 patent, entitled "System and Method for Monitoring and Controlling Remote Devices," relates to a computerized remotely operated system for monitoring, reporting on, and controlling remote systems. '692 patent, col. 1, ll. 26–28. At the time of the invention, existing monitoring and controlling systems typically implemented a local network of hard-wired sensors and actuators, and a local controller. *Id.*, col. 2, ll. 18–21. According to the patent, however, these prior art systems were costly to operate. *Id.* They involved expenses associated with developing and installing local components, as well as operational expenses associated with connecting functional

sensors and controllers with the local controller. *Id.*, col. 2, ll. 22–24. These systems were also susceptible to a single point of failure because of their reliance on local controllers. *Id.*, col. 5, ll. 39–40. The claimed invention of the '692 patent does not require a local controller, and transfers system information from the remote system to a wide area network ("WAN") gateway interface with integrated software applications to process that information. *Id.*, col. 2, ll. 47–51.

As relevant to Emerson's appeal of Ground 2, independent claims 24, 42, 49, and 60 recite a method and system for controlling remote devices and control systems implementing the above-recited system information transfer. Claims 24, 42, 49 and 60 all contain limitations directed to a computer on a WAN issuing a control signal in response to data originating from a sensor on the side of a gateway (the "control signal" limitation). J.A. 23. Independent claim 24 is illustrative and recites:

> 24. A method for controlling a system comprising:
>
> remotely collecting data from at least one sensor;
>
> processing the data into a radio-frequency (RF) signal;
>
> transmitting the RF signal, via a relatively low-power RF transceiver, to a gateway;
>
> translating the data in the RF signal into a network transfer protocol;
>
> sending the translated data to a computer, wherein the computer is configured to appropriately respond to the data generated by the at least one sensor by *generating an appropriate control signal*;
>
> sending the control signal via the network to the gateway;

> translating the control signal from a network transfer protocol into an RF control signal;
>
> transmitting the RF control signal;
>
> receiving the RF control signal;
>
> translating the received RF control signal into an analog signal; and
>
> applying the analog signal to an actuator to effect the desired system response.

'692 patent, col. 20, ll. 43–63 (emphasis added). All of the Ground 2 claims include the control signal limitation.

As relevant to SIPCO's cross-appeal of Ground 3, independent claims 32 and 55 recite a system for monitoring remote devices and a method for collecting information and providing data services, respectively. Independent claim 32 recites:

> 32. A system for monitoring remote devices comprising:
>
> at least one sensor adapted to generate an electrical signal in response to a physical condition;
>
> at least one wireless transmitter configured to encode the electrical signal, the wireless transmitter further configured to transmit the encoded electrical signal and transmitter identification information in a *low-power radio-frequency (RF) signal*;
>
> at least one gateway connected a wide area network (WAN) configured to receive and translate the RF signal, the gateway further configured to deliver the encoded electrical signal and transmitter identification information to a computer on the WAN; and

> a computer configured to execute at least one computer program that formats and stores select information responsive to the electrical signal for retrieval upon demand from a remotely located device.

'692 patent, col. 21, ll. 19–36 (emphasis added). Claims 34, 36, 37, and 38 depend from claim 32. Independent claim 55 recites:

> 55. A method for collecting information and providing data services comprising:
>
> adaptively configuring a data translator at the output of a local controller, wherein the data translator converts the output data stream into an information signal consisting of a transmitter code and an information field;
>
> adaptively configuring at least one transmitter with the data translator, *wherein the transmitter converts the information signal into a low-power RF signal*;
>
> placing a plurality of relatively low-power radio frequency (RF) transceivers dispersed geographically wherein the low-power RF signal is received and repeated as required to communicate the information signal to a gateway, the gateway providing access to a WAN;
>
> translating the low-power RF signal within the gateway into a WAN compatible data transfer protocol;
>
> transferring the translated low-power RF signal via the WAN to a computer wherein the computer is configured to manipulate and store data provided in said signal; and
>
> granting client access to the computer.

'692 patent, col. 23 l. 43–col. 24 l. 5 (emphasis added). Claims 56–57, and 59 depend from claim 55.

B. Cunningham

U.S. Patent No. 6,124,806 ("Cunningham"), entitled "Wide Area Remote Telemetry," issued on September 26, 2000. Cunningham relates to "the fields of automatic meter reading of electric, gas, water meters and other systems," including systems that can communicate with data collection modules via wireless transmission. J.A. 1045, col. 1 ll. 15–18; J.A. 1047, col. 6 ll. 11–50. The reference discloses a remote-device monitoring system that uses a sensor interface module, a data collection module, commercially available information transmission systems, and a host module. J.A. 1046, col. 4 ll. 51–53.

According to Cunningham, the monitoring system operates as follows: (1) the sensor interface modules gather customer demand and usage information; (2) the sensor interface modules transmit the information to the data collection module over unlicensed radio frequency bands; (3) the data collection module transmits information to the host module over commercially available information transmission systems; (4) the host module gathers, stores, and processes the information; and (5) the host module communicates the processed information as needed to appropriate consumers using commercially available information transmission systems. J.A. 1046, col. 4, ll. 54–67. Cunningham asserts that the above-described system allows for near real-time information processing that is simplified relative to then-existing systems. J.A. 1046, col. 4, ll. 42–46.

C. Procedural History

On November 30, 2016, Emerson filed a petition requesting inter partes review of claims 1, 3–8, and 11–14, 24–32, 34, 36–38, 42, 43, 46–49, 51–57, and 59–64, presenting three grounds of unpatentability. J.A. 2, 93. On June

1, 2017, the Board determined that Emerson had a reasonable likelihood of prevailing on Ground 3 but not Grounds 1 and 2. J.A. 3. Accordingly, the Board instituted an inter partes review on the Ground 3 claims, but did not institute review on the claims challenged under Grounds 1 and 2. *Id.* The Board held an oral hearing on January 24, 2018. *Id.*

After the Supreme Court issued its decision in *SAS Institute v. Iancu*, 138 S. Ct. 1348 (2018), the Board modified its institution decision to include all challenged claims on all grounds presented in Emerson's petition. J.A. 597. The Board denied Emerson's request to obtain and file additional evidence, but authorized the parties to file additional briefing with respect to the newly instituted grounds. J.A. 608. The Board held a supplemental oral hearing on September 27, 2018. J.A. 718–759.

On November 28, 2018, the Board issued its Final Written Decision. J.A. 1–52. The Board determined that Emerson failed to prove, by a preponderance of the evidence, that the Ground 1 and Ground 2 claims are unpatentable. J.A. 19–33. The Board, however, concluded that the Ground 3 claims are unpatentable because they are anticipated or would have been obvious in light of Cunningham. J.A. 33–51. In reaching this determination, the Board held that the "low-power radio frequency (RF) signal" and "low-power RF signal" terms (the "low-power RF signal" limitations) should be given their "plain and ordinary meaning," or "construed to encompass transmitters/transceivers that transmit low power signals." J.A. 14–15. Applying this construction, the Board found that the Cunningham reference discloses "low power, radio frequency transmissions." J.A. 14.

Emerson timely appeals the Board's Final Written Decision with respect to the Ground 2 claims. SIPCO cross-appeals the Board's final decision with respect to the

Ground 3 claims. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

II. DISCUSSION

Emerson appeals the Board's determination with respect to the Ground 2 claims. It challenges the Board's (1) factual findings that Cunningham does not disclose the "control signal" limitation and that the prior art does not disclose a "translating" limitation and (2) refusal to grant Emerson's request to submit new evidence. Appellant Br. 25–27. SIPCO cross-appeals the Board's obviousness determination with respect to the Ground 3 claims. It objects to the Board's (1) claim construction of the "low-power RF signal" limitations and (2) factual findings that Cunningham discloses relatively "low-power" transceivers and a gateway that delivers an "encoded electrical signal" to a computer on the WAN. Appellee Br. 25–26. We address each issue in turn.

A. Substantial Evidence Supports the Board's Findings that Cunningham Does Not Disclose the "Control Signal" or "Translating" Limitations of the Ground 2 Claims

We review the Board's legal determination of obviousness de novo, and its underlying factual findings for substantial evidence. *PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC*, 815 F.3d 747, 751 (Fed. Cir. 2016). Substantial evidence is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000).

In its Final Written Decision, the Board found that the Ground 2 claims were not obvious, because, *inter alia*, Cunningham does not satisfy the "control signal" or "translating" limitations. J.A. 24–29. Per the language of the claims, the "control signal" must be capable of being "translated" into an analog signal so that it can control a device. *See, e.g.*, '692 patent, col. 20 ll. 54–63; *id.*, col. 22 ll. 24–37;

id., col. 23 ll. 8–27. Cunningham's "controlling information," however, refers to "varying utility prices," and the Board determined that these utility prices do not constitute a "control signal" because they "do not cause a controlling action to be done to the device." J.A. 27. The Board also concluded that Emerson failed to establish how these utility prices could be "translated" from a network transfer protocol into an RF control signal, and then from an RF control into an analog signal. J.A. 27–28. Emerson argues that the Board's factual findings are erroneous because they are unsupported by substantial evidence.

We disagree. Cunningham discloses a device adjustment module ("DAM") that monitors and controls the operation of various devices and applications. J.A. 1067, col. 46 ll. 64–67. The reference explains, as an example, that a DAM can be used to control a thermostat, and that by receiving "controlling information," *i.e.*, "varying utility prices," from a host module, the DAM can "adjust the operation usage to stay below increased billing increment costs for energy supply and usage." J.A. 1067–68, col. 46 l. 64–col. 47, l. 10. The disclosed "utility prices," however, only serve as *information*, not control signals. In the context of the thermostat example, "some calculation must be done on those prices outside of the HVAC device to determine whether a change to a device setting should be made." J.A. 27 (quoting J.A. 1067–68, col. 46 l. 62–col. 47 l. 10). "While 'utility prices' may be information related to controlling the device or even used in determining whether to control the device[,] they do not cause a controlling action to be done to the device." J.A. 27. Thus, substantial evidence supports the Board's finding that the "controlling information" in Cunningham is not a "control signal."

Emerson posits that, even if the Cunningham reference is deficient, the missing limitation is satisfied by U.S. Provisional Application No. 60/058,978 (the "'978 provisional"), which is incorporated to Cunningham. Appellant Br. 49. Emerson maintains that the Board improperly

"disregard[ed] the disclosures of the '978 [p]rovisional," and accordingly, its conclusions are unsupported by substantial evidence.

Reading Emerson's opening brief, one might be led to believe that the Board's consideration of the '978 provisional was cursory. But a review of the Board's Final Written Decision establishes the opposite—that the Board *did* consider the reference and, over five pages, explained why the disclosure was lacking. *See* J.A. 28–33. As the Board recognized, the '978 provisional discloses "routines to reduce the amount of energy used by monitoring and controlling HVAC and lighting usage," J.A. 1435, but it does not disclose sending any control signals from the computer to the actuator, as required by the claims. J.A. 30. And even if we assume that the disclosed "Williams Network Control Center" creates control signals, the reference does not disclose how those signals are translated from network transfer protocol to RF signals, and then from RF signals to an analog signal. *See* J.A. 14. We also find that substantial evidence supports the Board's finding that a POSA would not have been motivated to combine the '978 provisional embodiment with Cunningham's "utility prices" embodiment, such that the host module sends "control signals" instead of mere "controlling information." As the Board noted, "in Cunningham, the [DAM]—which is not on the network but rather on the other side of the asserted gateway—uses the price information, along with locally-obtained energy usage information, to generate control signals." J.A. 32–33. Thus, substantial evidence supports the Board's findings that Cunningham does not disclose the "control signal" limitation.

Because substantial evidence supports the Board's findings that Cunningham fails to disclose a "control signal," Emerson's arguments with respect to the "translating" limitation necessarily fail. The Ground 2 claims recite "translating *the control signal* from a network transfer protocol into an RF control signal" and "translating the

received RF control signal into an analog signal." '692 patent, col. 20 ll. 54–63 (emphasis added); *see also id.*, col. 22 ll. 24–37; *id.*, col. 23 ll. 8–27. Thus, if the prior art reference fails to disclose a "control signal," the "translating" limitation cannot be met. Emerson argues that the Board failed to consider other references, such as McGowan and Mason, that allegedly teach "translating control signals from a network transfer protocol into an RF control signal" and from an "RF control signal into an analog signal." Appellant Br. 54–59. But these references only teach the translating process—they do not disclose the "control signal" itself. *See, e.g.*, J.A. 991, col. 1 ll. 10–13 ("The present invention provides a method and system by which a fixed network radio frequency (RF) communication system is made compliant with the standard CEBus protocol."); J.A. 1069 (disclosing the digital to analog conversion). Indeed, Emerson's petition relied on these references, not for their disclosure of a "control signal," but for their teachings directed to the translating a signal into an RF signal, and from an RF signal to an analog signal. *Compare* J.A. 150 (citing to Cunningham for its alleged disclosure of "generating an appropriate control signal"), *with* J.A. 152–53 ("To the extent that the Board does not believe that Cunningham's gateway (data collection module) performs the claimed translating and transmitting of claim elements [24h] and [24i], it would have been obvious to do so . . . Alternatively, Mason discloses that a gateway (node 18) translates a control signal from a network transfer protocol (TCP/IP) into a RF control signal (CEBUS RF protocol signal), which is thereafter transmitted to the appropriate meter.") *and* J.A. 154–55 ("Cunningham, however, does not explicitly disclose translating the received RF control signal into an analog signal and thereafter applying the analog signal to an actuator to effect the desired system response. McGowan teaches this concept.").

Accordingly, we conclude that the Board's factual findings that Cunningham failed to disclose the "control signal"

and "translating" limitations are supported by substantial evidence.

B. The Board Did Not Abuse its Discretion in Denying Emerson's Expert Declaration

"We review the Board's evidentiary ruling for abuse of discretion which may be found if the Board violated governing law." *Belden Inc. v. BerkTek LLC*, 805 F.3d 1064, 1077-78 (Fed. Cir. 2015). "An abuse of discretion is found if the decision: (1) is clearly unreasonable, arbitrary, or fanciful; (2) is based on an erroneous conclusion of law; (3) rests on clearly erroneous fact finding; or (4) involves a record that contains no evidence on which the Board could rationally base its decision." *Bilstad v. Wakalopulos*, 386 F.3d 1116, 1121 (Fed. Cir. 2004).

After the Board amended its institution decision to include all challenged claims on all grounds presented in Emerson's petition, the petitioner indicated that, in addition to supplemental briefing, it would like "to obtain and submit additional evidence." J.A. 605. The Board authorized Emerson to submit supplemental briefing, but denied its request to obtain and file additional evidence. J.A. 608. Citing to 37 C.F.R. § 42.23(b), the Board explained that a petitioner is generally "limited to the petition and associated evidence with regard to the ground, and may not submit a reply or additional evidence." J.A. 606. It also noted that Emerson's reliance on cases such as *Genzyme Therapeutic Products v. Biomarin Pharm. Inc.*, 825 F.3d 1360 (Fed. Cir. 2016) was inapposite, because those cases considered whether the *introduction* of new evidence prejudiced the patent owner, not whether the Board was required to allow the petitioner to introduce new evidence. J.A. 606. Emerson now argues on appeal that the Board's refusal to allow Emerson to submit new evidence "violated the APA and Due Process," and speculates that the Board "would almost certainly not have repeated its erroneous

reading of Cunningham's disclosures." Appellant Br. 31, 61.

We find that the Board acted within its discretion. As we explained in *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359 (Fed. Cir. 2016), "[i]t is of the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify 'with particularity' the 'evidence that supports the grounds for the challenge to each claim.'" *Id.* at 1369 (quoting 35 U.S.C. § 312(a)(3)). "All arguments for the relief requested in a motion must be made in the motion. A reply may only respond to arguments raised in the corresponding opposition, patent owner preliminary response, or patent owner response." 37 C.F.R. § 42.23(b). Accordingly, Emerson's failure to present evidence regarding "new claim construction proposals relevant to the [originally-denied grounds]," cannot be cured by the Board's modified institution decision. As the Board noted, "Petitioner did not propose an express construction for any limitation in its Petition." J.A. 606. Thus, this is not the type of case in which the evidence is allowable because it "is a legitimate reply to evidence introduced by the patent owner." *Anacor Pharm., Inc. v. Iancu*, 889 F.3d 1372, 1381 (Fed. Cir. 2018).[1]

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[1] We also note that, while the Board refused to allow Emerson to submit new evidence, it allowed the petitioner "to comment on the sufficiency of the Petition, [the Board's] determination in the original Institution Decision, and any impact caused by the amended Institution Decision and subsequent proceedings." J.A. 607. It then allowed the petitioner to submit a 10-page supplemental brief, as well as a reply to the patent owner's response, and it afforded the parties another oral hearing on these newly instituted grounds. J.A. 607–609.

We conclude that the Board did not abuse its discretion in denying Emerson's request to submit new evidence.

C. The Board Did Not Err in its Construction of the "Low-Power Radio Frequency (RF) Signal" Limitations

This court reviews the ultimate construction of a claim de novo, with subsidiary factual findings involving extrinsic evidence reviewed for substantial evidence. *Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1361–62 (Fed. Cir. 2018). Once a patent expires, the Board must apply the claim construction standard set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005). *In re CSB-Sys. Int'l, Inc.*, 832 F.3d 1335, 1342 (Fed. Cir. 2016). That is, the words of a claim "are generally given their ordinary and customary meaning," as the term would have been understood by a person of ordinary skill in the art at the time of the invention. *Phillips*, 415 F.3d at 1312–1313.

In its cross-appeal, SIPCO contends that the Board's invalidity findings with respect to Ground 3 are erroneous because, *inter alia*, the Board (1) improperly construed the "low-power radio frequency (RF) signal" limitations under the "broadest reasonable interpretation" (BRI) standard; and (2) based on this standard, adopted an erroneous construction. Appellee Br. 25, 61.

We disagree. We do not believe the Board applied the wrong standard. In construing the "low-power radio frequency[/RF] signal" limitations, the Board agreed with Emerson that these terms "should be given their plain and ordinary meaning." J.A. 14. It rejected SIPCO's proposed construction of "low power" to mean "signals having a 'limited transmission range,'" explaining that the text of the claim language says nothing of "transmission range." J.A. 14–15. It did not do so because that construction was not the broadest reasonable one. While the Board acknowledged that the '692 patent specification describes a relationship between power and transmission range, the Board pointed out that "the specification does not equate these

two distinct transmission properties." J.A. 14. Accordingly, the Board concluded that, consistent with their "plain and ordinary meaning," the disputed limitations "encompass transmitters/transceivers that transmit low power signals." J.A. 14–15. That language and conclusion are consistent with the framework set forth in *Phillips*. *Phillips*, 415 F.3d at 1312–15 ("We have frequently stated that the words of a claim 'are generally given their ordinary and customary meaning."), not BRI. *See also In re CSB-Sys.*, 832 F.3d at 1340 ("Typically, claims in issued patents are construed using the framework set forth in *Phillips v. AWH Corp.*, which emphasizes considering the plain meaning of the claim terms themselves in light of the intrinsic record.").

We acknowledge that the Board's Final Written Decision contains certain inconsistencies. For example, in reciting the legal standard for claim construction, the Board stated that "[a] claim in an unexpired patent that will not expire before a final written decision is issued shall be given its broadest reasonable construction in light of the specification of the patent in which it appears." J.A. 10 (quoting 37 C.F.R. § 42.100(b) (2016)). The parties also do not dispute that the Board mistakenly declared that the '692 patent claims priority to August 2, 1999, as opposed to June 22, 1998. J.A. 4; Appellant Br. 62–63; Appellee Br. 46. But the Board's reference to the "broadest reasonable construction" does not clearly establish that it applied the wrong standard. Indeed, it was in that same paragraph that the Board explained that "we generally give claim terms their ordinary and customary meaning." J.A. 10. Thus, despite the Board's apparent confusion as to the '692 patent's priority date, the fact remains that the Board construed the "low-power RF signal" limitations according to their "plain and ordinary meaning." Accordingly, we conclude that these statements, while flawed, were harmless.

We also conclude that the Board's claim construction of the "low power RF signal" limitation is not erroneous under the *Phillips* framework.

First, the claim language does not support SIPCO's narrowly proposed construction of "low-power RF signal" to have "a limited transmission range." Appellee Br. 63. For example, independent claim 32 recites "at least one wireless transmitter . . . configured to transmit the encoded electrical signal and transmitter identification information in a low-power radio-frequency (RF) signal." '692 patent, col. 21 ll. 27–32. It does not, however, mention the signal's range, let alone disclose a "limited transmission range." Similarly, independent claim 55 discloses "a low-power RF signal" and a plurality of low-power RF transceivers "dispersed geographically wherein the low-power RF signal is received and repeated," but it does not characterize the transmission range of this signal. '692 patent, col. 23 l. 50–col. 24 l. 4. The "claim language upon which [SIPCO] relies does not mention transmission range;" rather, the claim limitations refer only to "power." J.A. 13. Accordingly, the claims, which "define the metes and bounds of the patentee's invention," do not suggest a restriction on the transmission range of the claimed "low-power RF signal." *Thorner v. Sony Comput. Entertainment Am. LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012) (citing *Phillips*, 415 F.3d at 1313).

The written description also does not support SIPCO's proposed construction. As the Board recognized, the written description describes a relationship between power and transmission range, but it "does not equate these two distinct transmission properties." J.A. 13. For example, in describing a preferred embodiment, the '692 patent states that the control system's transceivers "are relatively small in size and transmit a relatively low power RF signal. As a result, in some applications, the transmission range of a given transceiver *may* be relatively limited." '692 patent, col. 5 ll. 50–54 (emphasis added). The written description

also states that, when stand-alone transceivers are dispersed so that only one transceiver picks up a transmission from a given integrated transceiver, this is "due *in part* to the low power transmission nature of each transmitter." '692 patent, col. 6, l. 67–col. 7 l. 4 (emphasis added). But neither of these statements suggest that that low power RF signals necessarily have a limited range. That a low power RF signal *may* have a limited transmission range in "*some* applications" does not mean that it always has this characteristic. '692 patent, col. 5 ll. 53–54 (emphasis added). The Board correctly recognized this distinction, concluding that limited transmission range does "not necessarily correlate with low power, but instead may depend on multiple factors beyond power, such as frequency, hardware design, and environment." J.A. 13–14. In this context, descriptions of embodiments comprising transceivers of a "relatively limited transmission range" say little about the plain and ordinary meaning of a "low-power RF signal." *See* '692 patent, col. ll. 50–57. And in any event, "it is . . . not enough that the only embodiments, or all of the embodiments contain a particular limitation to limit a claim term beyond its ordinary meaning." *Aventis Pharma S.A. v. Hospira, Inc.*, 675 F.3d 1324, 1330 (Fed. Cir. 2012). *See also Innova/Pure Water, Inc. v. Safar Water Filtration Sys., Inc.*, 381 F.3d 1111, 1117 (Fed. Cir. 2004) ("[E]ven where a patent describes only a single embodiment, claims will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope." (internal quotation omitted)).

SIPCO also argues that the Board's construction is erroneous because it is inconsistent with this court's claim construction in *SIPCO, LLC v. Emerson Electric Co.*, 939 F.3d 1301 (Fed. Cir. 2019), which involved similar subject matter, but a different patent—U.S. Patent No. 8,908,842 (the "'842 patent"). Appellee Br. 54. In that case, we construed the term "low-power" in "low-power transceiver" to correlate with "limited transmission range." *See SIPCO,*

939 F.3d at 1308. Pointing to our prior holding, SIPCO argues that the "low-power RF signal" limitations in the '692 patent must correlate with a "limited transmission range." *Id.*

From the outset, we are not bound by our prior construction because that decision has been vacated on other grounds. *See Emerson Elec. Co. v. SIPCO, LLC*, 207 L.Ed. 2d 1049 (U.S. June 15, 2020). But even if that decision had not been vacated, it offers little support for SIPCO's position with respect to the '692 patent. As we have frequently explained, claim construction issues presented in patent cases are highly fact and case-specific because they rely on the intrinsic evidence: the claim language, the written description, and the prosecution history. *Phillips*, 415 F.3d at 1312–1317. Accordingly, the construction of a particular term in one patent will not necessarily bear on the interpretation of the same term in a subsequent patent because the factual context is different. The term may be identical, but the intrinsic evidence is not. *See also Phillips*, 415 F.3d at 1319 ("In sum, extrinsic evidence may be useful to the court, but it is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence."). Accordingly, in a case such as the one before us—where the two patents are unrelated and do not share any intrinsic evidence—our prior holding in *SIPCO* is neither controlling nor afforded substantial weight.

Even if we were to consider our prior construction of "low power" in the prior proceeding, moreover, the inferences we drew in that earlier proceeding cannot be imputed to the current appeal. The written descriptions of the '842 patent and the '692 patent differ, and the '692 patent does not contain the disclosures that we relied on to construe the claims of the '842 patent. In *SIPCO*, we construed "low-power transceiver" to mean "a device that transmits and receives signals at a power level corresponding to limited transmission range" because the '842 patent "repeatedly

ties" the device to this characteristic. *Id.* For example, the '842 patent written description states that, in the context of "an extremely low power transmitter," the user "will have to be in close proximity, (e.g., several feet) to the receiver," '842 patent, col. 5, l. 67–col. 6 l. 3, and that the invention's "extremely low-power operation also helps to prevent the unlawful interception of the electromagnetic signals." *Id.*, col. 6 ll. 4–11. The patent also states that "it may be desirable to use a cellular transmitter, instead of a low-power RF transmitter . . . because the automobile may break down a relatively significant distance from the nearest pay-type telephone (e.g., location of the nearest transceiver)." *Id.*, col. 14 ll. 15–21. We determined that these repeated references to "distance" were significant, and that these disclosures supported our conclusion that a low-power transmitter, as opposed to a cellular transmitter, has a limited transmission range. *SIPCO*, 939 F.3d at 1308–09.

The '692 patent written description does not contain any similar language. It does not state that low-power RF signals have "limited transmission range," or include any of the proximity language that was significant to our determination in the prior appeal. In describing a preferred embodiment, the specification acknowledges that "in some applications, the transmission range of a given transceiver may be relatively limited," '692 patent, col. 5 ll. 53–54, but it also states that in other instances, the low-power RF signal may be sufficient. *Id.*, col. 7 ll. 5–6 ("However, in certain instances two, or even more, stand-alone transceivers may pick up a single transmission."). Without more, we see no reason to depart from the plain and ordinary meaning of the term. *Phillips*, 415 F.3d at 1312. Accordingly, we determine that the intrinsic evidence does not limit the term such that the "low-power RF signal" limitations should be construed to have a "limited transmission range." We conclude that the Board's construction of the "low-power RF signal" limitations in accordance with their

plain and ordinary meaning, "to encompass transmitters/transceivers that transmit low power signals," is correct.

D. Substantial Evidence Supports the Board's Factual Findings that Cunningham Discloses the "Low-Power RF Signal" and "Encoded Electrical Signal" Limitations of the Ground 3 Claims

In light of our claim construction determination above, we conclude that substantial evidence supports the Board's factual findings that Cunningham discloses the "low-power RF signal" limitation because: (1) Cunningham discloses wireless transmitters; (2) the wireless transmitters can be configured to transmit a "low-power RF signal" according to the correct claim; and (3) the wireless transmitters can alternatively be configured to transmit a low-power transmission over a limited range according to SIPCO's proposed construction. J.A. 35–36.

Cunningham discloses a sensor interface module ("SIM") that "communicate[s] with data collection modules 110 through a hardwire or wireless transmission 108." J.A. 1047 col. 6, ll. 11–13. The Federal Communications Commission ("FCC") Bulletin, which SIPCO relies upon, defines a "low power transmitter" as one which complies with the FCC regulations. J.A. 2486. Cunningham identifies that "the preferred embodiment communicates by using a frequency-hopping spread-spectrum transmission in an unlicensed range, such as 902–928 MHz." J.A. 1047 col. 6, ll. 16–18. The FCC regulations state, that for a transmitter in this frequency range, the maximum power output for a "low-power transmitter" is 1 Watt. J.A. 2502. Cunningham discloses the transmission power for the SIM is 100 mW, significantly below the FCC maximum. J.A. 1053 col. 18, ll. 56–62. Cunningham also appreciates that the SIM could operate with a transceiver that is both low-power and limited range. J.A. 1047 col. 6, ll. 13–16 ("various types of

known, low-power, radio-frequency transmissions may be utilized").

We also conclude that substantial evidence supports the Board's findings that Cunningham discloses a gateway that delivers an "encoded electrical signal" and transmitter identification information to a computer on the WAN (the "encoded electrical signal" limitation). J.A. 35–36. As the Board noted, Cunningham's data collection module ("DCM"): (1) receives an encoded cumulative sensor reading; and (2) sends the reading and transmitter identification information identifying the SIM to the host computer, J.A. 1048, col. 7, ll. 19–21 ("The data collection modules 110 transmit the information received from the sensor interface modules 102 over a data module connection 116 to a network system 118."); J.A. 1060, col. 31, ll. 6–8 ("Information from the sensor interface module 102 is decoded and processed in the data collection module 110 and prepared for transmission to the host module 122"). Cunningham also discloses that this transmission is in the form of an internet protocol signal. J.A. 1067, col. 45, ll. 60–67 ("The data collection module will send and receiv[e] information to and from the host module as an Internet protocol (TCP/IP) signal."). J.A. 36.

Because the Board's factual findings with respect to the "low-power RF signal" and "encoded electrical signal" limitations are supported by substantial evidence, we agree that the Ground 3 claims are unpatentable because they would have been obvious as a matter of law.

III. CONCLUSION

For the foregoing reasons, we *affirm* the Board's determinations.

AFFIRMED

COSTS

No costs.