

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HM ELECTRONICS, INC.,
Petitioner,

v.

3M INNOVATIVE PROPERTIES COMPANY,
Patent Owner.

Case IPR2015-00482
Patent 8,694,040 B2

Before JAMES P. CALVE, RICHARD E. RICE, and DAVID C. McKONE,
Administrative Patent Judges.

CALVE, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. BACKGROUND

Petitioner HM Electronics, Inc. (“HME”) filed a Petition (Paper 3, “Pet.”) seeking *inter partes* review of claims 1–32 of U.S. Patent No. 8,694,040 B2 (Ex. 1001, “the ’040 patent”). Patent Owner 3M Innovative Properties Company (“3M”) then filed a Preliminary Response. Paper 11 (“Prelim. Resp.”). Based on these submissions, we instituted trial as to claims 1–32 (all claims) of the ’040 patent. Paper 12 (“Dec. on Inst.”), 18–19. After our Institution Decision, 3M filed a Response. Paper 17 (“PO Resp.”). HME filed a Reply. Paper 23 (“Pet. Reply”).

An oral argument was conducted on March 10, 2016. A transcript of the argument is entered in the record. Paper 34 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a).

A. Related Proceedings

The parties identify the following proceeding as affecting or being affected by a decision in this proceeding: *3M Company and 3M Innovative Properties Company v. HM Electronics, Inc.*, No. 14-cv-01000 (D. Minn.). Pet. 2; Paper 4, 1–2. The ’040 patent also is the subject of an *inter partes* review in IPR2015-00491.

B. The ’040 Patent (Ex. 1001)

The ’040 patent discloses a wireless intercom system for commercial establishments, particularly quick service restaurants. Ex. 1001, 1:15–17, 21–37. Intercom system 12 includes base station 14, which communicates wirelessly with a plurality of headsets 16a, 16b, 16n worn by personnel or staff of establishment 10. *Id.* at 5:21–25. Figure 1, which is reproduced below, illustrates this arrangement.

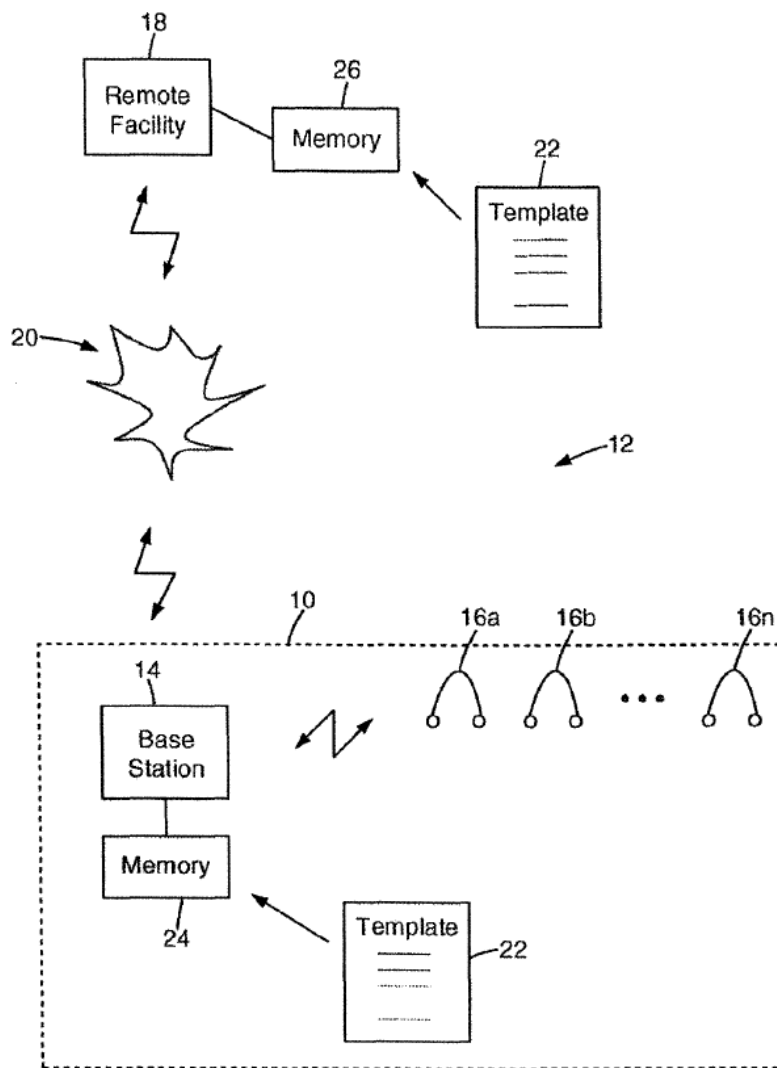


Fig. 1

Figure 1 is a block diagram of an intercom system. Headsets 16a, 16b, 16n can be in full duplex communication with base station 14 with separate volume or gain controls available for each headset and direction of communication. *Id.* at 5:38–44. Other adjustable parameters include receive and transmit volume, master volume for a main speaker of a drive-through facility, individual volume for each channel of the facility, and base station receive and transmit volume. *Id.* at 5:44–52, 6:15–50. A set of parameters may form template 22 stored locally or remotely for recall. *Id.* at 6:51–7:22.

To facilitate resolution of technical problems, intercom system 12 allows personnel at establishment 10 to call a technical service facility 18 that is located remotely from establishment 10. *Id.* at 6:12–14. Technical service facility 18 can access parameters controlling intercom system 12 remotely via wide area network 20 and review and adjust the parameters to place intercom system 12 back into operation or improve operation without sending a service technician to establishment 10. *Id.* at 6:15–25.

The '040 patent claims priority as a continuation of application No. 11/276,048, filed on February 10, 2006. Ex. 1001, 1:8–10. 3M asserts that the '040 patent thus has a 2006 priority date. PO Resp. 54; Ex. 2003 ¶ 11.

C. Illustrative Claim

Claims 1 and 18 are independent. Claim 1 is reproduced below.

1. An intercom system, said intercom system being configurable for a drive-through, quick service restaurant establishment having a staff, comprising:

- a base station having the ability to connect to a wide area communication network;

- at least one headset configured for two-way wireless communication with said base station;

- said wireless communication between the at least one headset and said base station being configurable with at least one parameter that adjusts a volume level of communications wirelessly received or wirelessly transmitted by the headset;

- said at least one parameter being locally adjustable at the establishment;

- said base station being configured to permit remote review and remote adjustment of said at least one parameter from a facility remote from the location of the establishment when said base station is connected to said wide area communication network; and

- wherein said at least one parameter can be saved into a template of parameters for later use.

D. Prior Art

HME relies on the following references:

Reference	Printed Publication	Date	Exhibit
HME Pro850	<i>Pro850 Wireless Intercom</i> , © HM Electronics, Inc.	Sept. 2003	1009
HME Wireless 6000	<i>Wireless 6000 Wireless Drive-Thru Audio System</i> , © HM Electronics, Inc.	Aug. 2003	1010
3M Wireless	<i>3M Wireless Intercom System Service Information</i> , 3M Food Services Trade Dep't., © 3M	Mar. 2003	1011
Telex Intercom Handbook	<i>Handbook of Intercom Systems Engineering</i> (1 st ed., rev. 4, 2002), © 2000 Telex Communications, Inc.	Mar. 2002	1012
Telex RadioCom	<i>Telex Operating Instructions, RadioCom™ BTR-800, TR-800 Professional Wireless Intercom System</i> , Telex Communications, Inc.	June 2002	1013

E. Asserted Grounds of Unpatentability

We instituted trial regarding the patentability of claims 1–32 of the '040 patent on the following grounds. Dec. on Inst. 18–19.

References	Basis	Claims Challenged
HME Pro850, Telex Intercom Handbook, HME Wireless 6000	§ 103	1–32
HME Pro850, Telex Intercom Handbook, 3M Wireless	§ 103	1–5, 9–21, 25–32
HME Pro850, Telex Intercom Handbook, 3M Wireless, Telex RadioCom	§ 103	6–8, 22–24

II. ANALYSIS

A. Claim Interpretation

In an *inter partes* review, claims of an unexpired patent are given their broadest reasonable construction in light of the specification in which they appear. See *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1278–1279 (Fed. Cir. 2015) (“Congress implicitly approved the broadest reasonable interpretation standard in enacting the AIA,” and “the standard was properly adopted by PTO regulation”), *cert. granted sub nom. Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 890 (mem.) (2016); 37 C.F.R. § 42.100(b). Claim terms are given their ordinary, customary meaning as understood by a skilled artisan in the context of the entire disclosure. See *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In instituting trial, we determined that it was not necessary to interpret any claim limitations to reach our decision. Dec. on Inst. 5. Based on the submissions of the parties and their respective positions, we determine that it is necessary to construe the following claim terms.

1. “remote” (claims 1, 18)

HME asserts that the broadest reasonable interpretation of “remote” is “not in the immediate vicinity, and accessible through a wide area network.” Pet. 10; Pet. Reply 3–4. 3M argues that HME’s interpretation of “remote” is incorrect because it does not capture the limitations in claims 1 and 18 that (1) remote review and remote adjustment occurs from a facility remote from the location of the establishment, (2) the base station is configured to permit remote review and remote adjustment of said at least one parameter, and (3) for remote review and adjustment, the base station is connected to said wide area communication network. PO Resp. 11; Ex. 2003 ¶¶ 31–32.

We interpret “remote” to mean “not at the site of.” This interpretation is consistent with an ordinary meaning of “remote,” which includes “[n]ot in the immediate vicinity, as a computer or other device located in another place (room, building, or city) and accessible through some type of cable or communications link.” See Pet. 9–10 (quoting MICROSOFT COMPUTER DICTIONARY (5th ed. 2002) (Ex. 1006 at APP2787)).

Our interpretation also is consistent with the ’040 patent specification, which discloses that the present invention “allow[s] the intercom system of an establishment to be remotely adjusted by a technician or other user without the need for such technician or other user to be dispatched to the establishment itself, saving both a considerable amount of both time and money.” Ex. 1001, 2:33–37; 6:15–20. A service technician can access the intercom system remotely via a wide area network 20 such as the internet “from great distances” (*id.* at 2:38–41), but the main advantage of the remote accessibility is that a technician may resolve an issue with intercom system 12 quickly, without traveling to the site of establishment 10 (*id.* at 6:26–38).

The ’040 patent specification also discloses that a location from which remote review and adjustment occurs can be a great distance away from the location of the quick service restaurant so a technician would have to fly or travel many hours, or even a day, to reach an establishment 10. *Id.* at 6:26–32. The ’040 patent refers to the location of the restaurant establishment 10 as “remote” from the technician. *Id.* The ’040 patent specification also discloses that the use of the internet permits a technician or other user to access the intercom system from “great distances” and review and adjust parameters of the intercom system. *Id.* at 2:38–41; *see also* Tr. 33:18–35:7 (“remote” means away from the location of the establishment).

In addition to using the term “remote” to refer to locations that are a great distance from the site of establishment 10, the ’040 patent specification uses the term “remote” to encompass remote adjustments by a service technician who does not have to make a site visit, i.e., a technician who is located other than at the site of the quick service restaurant establishment 10.

In this regard, the ’040 patent specification further discloses:

If the site of establishment 10 is remote, many hours of establishment down time may be saved, perhaps even a day if it is necessary to fly or otherwise transport a service technician to a very remote site. Even if the site of establishment is *not remote*, a service technician may be able to service many more establishments and solve many more issues more efficiently by making *remote adjustments* than by incurring site visits. Remote adjustment of parameters of intercom system 12 may minimize, or eliminate altogether, service interruption by establishment 10.

Id. at 6:28–38 (emphasis added). “Remote” adjustments can be made from any location that is not at the site of the restaurant to reduce down time that normally occurs if a technician has to travel to the site of the restaurant. *Id.*

Thus, the ’040 patent specification uses “remote” to encompass not only a service technician at remote facility 18 that is located a great distance from establishment 10, but also any other location that is away from the site of establishment 10. For example, the summary of the invention indicates that the intercom system can be “remotely adjusted” by a technician or other user so the technician or user does not have to travel to the establishment.

Id. at 2:33–36. Thus, a key consideration in remote adjustment capability is the ability to review and adjust intercom system parameters without having to visit the site of a quick service restaurant. Remote adjustment thus occurs anywhere other than at the site of the quick service restaurant establishment.

This interpretation becomes clearer when considered in the overall context of the '040 patent specification disclosure, which discloses that an advantage of remote adjustment capability is to reduce the loss of business and revenue that may occur from an inoperable intercom system.

The drive-through ordering system is vitally important for a quick service restaurant. In some quick service restaurants, the drive-through is sixty percent (60%) or more of the revenue of the establishment. Thus, there is a great need for a reliable intercom system for use, for example, in obtaining orders from the drive-through facility. If the intercom system develops a fault, becomes mal-adjusted or otherwise mal-functions, the establishment may be unable to process orders from the drive-through facility not only preventing the establishment from booking the revenue which otherwise would have been obtained but also potentially alienating customers.

Id. at 1:54–64.

The remote adjustment capability of the intercom system reduces the amount of time an intercom system is inoperable by allowing a technician who is “remote” from establishment 10 to adjust the system. This benefit accrues whether the technician is “remote” by a great distance or “remote” at a closer location that still is not at the site of the quick service restaurant. A site visit is required in both scenarios to restore the intercom system, and down time occurs until a technician visits the site and fixes the intercom.

For a technician located a significant distance geographically from the location of a quick service restaurant, remote adjustment saves “considerable amount of time for such service technician, once summoned, to arrive at the location of establishment 10 in order to begin repairs.” *Id.* at 6:1–5. Remote adjustment saves many hours of down time at establishment 10, even a day if it is necessary to fly a technician to a very remote site. *Id.* at 6:26–32.

The '040 patent specification discloses that similar advantages accrue for a service technician who is not located a great distance “remote” from a quick service restaurant establishment 10, but still is not on-site. Thus,

Even if establishment 10 is not located a significant distance from a qualified service technician, sending a service technician on-site to perform a repair can still be a significant expense in terms of both time and money.

Id. at 6:7–10. When a service technician is nearby, but not at the site of quick service restaurant establishment 10, the '040 patent specification discloses that a “remote adjustment” still is made and remote adjustments in this context allow a service technician “to service many more establishments and solve many more issues more efficiently by making remote adjustments than by incurring site visits.” *Id.* at 6:32–35. Remote adjustment addresses the need to save time and money for repairs in both cases. *Id.* at 2:13–29.

Our interpretation of “remote” also is consistent with the '040 patent specification’s use of the term “local” to mean on-site at establishment 10. The '040 patent specification contrasts “local” with “remote” such that a parameter is adjusted *locally* when it is adjusted on-site at establishment 10, and *remotely* when it is adjusted from a location away from the site of the establishment 10. *Id.* at 4:3–17 and 43–48, 8:21–24; *see* Pet. 10–11.

Our interpretation is consistent with claims 1 and 18. We reject the parties’ positions that the definition should include “accessible through a wide area network” (Pet. 10) or other limitations recited in claims 1 and 18 (PO Resp. 11). Including other claimed features in a definition of “remote” would render the recital of these claim features superfluous. *See Stumbo v. Eastman Outdoors, Inc.*, 508 F.3d 1358, 1362 (Fed. Cir. 2007) (denouncing claim constructions that render phrases in claims superfluous).

These other limitations—“remote review, “remote adjustment,” “a facility remote from the location of the establishment,”—also support our interpretation of “remote” to mean “not at the site of.” Thus, *remote* review and adjustment are provided “from a facility *remote* from the location of the establishment,” i.e., not at the site of the quick service restaurant, when the base station is connected to a WAN. Parameters also are “*locally* adjustable at the establishment,” i.e., at the site of the establishment, in claims 1 and 18.

3M’s expert, Mr. Gafford, testifies that “remote” is a location “remote from the drive-through, quick service restaurant establishment.” Ex. 2003 ¶ 32. Mr. Gafford testifies that this meaning follows from the ’040 patent’s disclosure that maintenance costs are controlled by allowing adjustment without having to travel to the establishment. *Id.*

Our interpretation is consistent with the interpretation of “remote” in Appeal 2015-004783 of Reexamination Control 95/002,239 for Patent No. 8,005,455, which issued from a parent application of the ’040 patent, and from which the ’040 patent claims priority as a continuation. Ex. 1017, 6–9.

2. “*a base station having the ability to connect to a wide area communication network*” (claims 1, 18)

HME asserts that “a base station “having the ability to connect to a wide area communication network” means “able to be communicatively joined to a wide area network.” Pet. 12. 3M argues that this limitation must be interpreted with other limitations in claims 1 and 18 such as “said base station configured to permit remote review and remote adjustment” . . . when said base station is connected to said wide area communication network.” PO Resp. 12. 3M argues that these limitations require the base station to have a necessary hardware and software configuration. *Id.*; Ex. 2003 ¶ 34.

We interpret “a base station having the ability to connect to a wide area communication network” to mean “able to be communicatively joined to a wide area network.” This interpretation is consistent with an ordinary meaning of “ability,” which is “[t]he quality of being able to do something [t]he quality of being suitable for or receptive to a specified treatment; capacity.” Pet. 12 (quoting THE AMERICAN HERITAGE COLLEGE DICTIONARY (4th Ed. 2002) (Ex. 1007, APP2791)). An ordinary meaning of “connect” includes “[t]o join to or by means of a communication circuit.” *Id.* (quoting Ex. 1007, APP2792).

This interpretation is consistent with language of claims 1 and 18, which recite “said base station being configured to permit remote review and remote adjustment of said at least one parameter” “when said base station is connected to said wide area communication network.” Ex. 1001, 9:39–43, 10:45–49; *see also* Pet. Reply 4. The base station’s ability to connect, i.e., to *communicate over*, a WAN allows remote review and remote adjustment of intercom system parameters, when the base station is connected to a WAN. Communications from a remote facility can be sent to the base station when the base station is connected to, i.e., in *communication with*, the WAN.

Claims 1 and 18 distinguish between “having the ability to connect” and “when said base station is connected.” We therefore decline to interpret “having the ability to connect” to mean “connected to the wide area communication network.” *See Dell Inc. v. Acceleron, LLC*, ___ F.3d ___, 2016 WL 1019075, *5 (Fed. Cir. Mar. 15, 2016) (meaning should be given to all claim terms); *Baran v. Med. Device Techs., Inc.*, 616 F.3d 1309, 1316 (Fed. Cir. 2010) (use of different terms implies different meanings unless evidence indicates patentee used terms interchangeably).

Our interpretation also is consistent with the '040 patent specification, which discloses a base station “*connectable* to a wide area communication network.” Ex. 1001, 2:49–50 and 59–60, 3:45–46 and 53–56, 4:39–42. The '040 patent specification also discloses that a plurality of parameters can be adjusted via the wide area network when the base station is “connected to a wide area network.” *Id.* at 4:8–10. Thus, the '040 patent specification does not use the terms “connectable” and “connected” interchangeably. The base station has the ability to connect to a WAN. When the base station is connected to a WAN, intercom system parameters can be adjusted remotely.

The prosecution history of the '040 patent supports this distinction and our interpretation of “a base station having the ability to connect to a wide area communication network” as “able to be communicatively joined to a wide area network.” Original claim 1 recited an intercom system for a drive-through quick service restaurant comprising a plurality of headsets, a base station, a speaker, and a microphone, “wherein the base station is *connectable* to a wide area communication network in order to enable remote adjustment of the plurality of parameters.” Ex. 1002, APP0391.

In response to an Office Action rejecting claims 1–5, 10–12, 17–20, and 25–27 under 35 U.S.C. § 103(a), 3M cancelled original claims 1–45 and submitted new claims 46–75. *See id.* at APP0319–APP0326 (Office Action, dated Sept. 4, 2012), APP0300–APP0305 (Amendment cancelling claims 1–45 and adding new claims 46–75). New independent claims 46 and 62 both recited “a base station *connectable* to a wide area communication network” and “remote review and adjustment of said at least one parameter when said base station is connected to said wide area communication network.” *Id.* at APP0301, APP0303, APP0306–APP0307.

The Examiner then rejected finally claims 46–75 on the grounds of obviousness-type double patenting but indicated that claims 46–75 would be allowable if they were amended to overcome the double patenting rejection. *Id.* at APP0266–APP0267. 3M filed a terminal disclaimer on May 10, 2013, and the Examiner issued a Notice of Allowance on May 20, 2013. *Id.* at APP0256–APP0259, APP0242–APP0246.

Subsequently, 3M filed an Amendment & Request for Continued Examination on August 20, 2013. *Id.* at APP0074–APP0081. In that paper, 3M presented the following amendments to claims 46 and 62:

“a base station **having the ability to connect** to a wide area communication network;”

“permit remote review and remote adjustment of said at least one parameter **from a facility remote from the location of the establishment** when said base station is connected to said wide area communication network;”

Ex. 1002, APP0075, APP0077.

In the remarks that accompanied this amendment, 3M emphasized that Applicants’ intent is not to change the claim scope with this amendment. Applicants assert that the word “connectable,” by itself, refers to the ability to connect. But this addition is made to further make clear that this is what the Applicant intends the claim to require. Applicants note that claims 46 and 62 do not require that the base station is actually connected to a wide area network, but that the base station has the ability to connect, in other words is connectable, to a wide area network.

Id. at APP0080.

3M clearly and unambiguously indicated that “having the ability to connect” in claims 46 and 62 (renumbered as claims 1 and 18, *see id.* at APP0054, APP0063) means “connectable” rather than connected to a WAN.

3M does not identify any disclosure in the '040 patent specification of any software or hardware that gives base station 14 the ability to connect to a WAN. *See* PO Resp. 11–12. Instead, 3M cites Mr. Gafford's declaration, but Mr. Gafford states only that the base station must have the necessary hardware and software without any citation to the '040 patent specification or any other authority. *See* Ex. 2003 ¶¶ 33–34.

We find no disclosure in the '040 patent specification of hardware or software that gives base station 14 an ability to connect to a WAN. Figure 1 illustrates base station 14 separated from wideband communication network 20.¹ An unnumbered lightning bolt is interposed between base station 14 and WAN 20, but the specification does not identify or discuss this element. Another lightning bolt is shown between base station 14 and headsets 16a–n. The '040 patent specification discloses only that base station 14 connects to headsets 16a–n via a wireless or a wired connection. Ex. 1001, 5:21–35. No disclosure is provided for any connection between base station 14 and WAN 20. It may be that base station 14 connects to WAN 20 by a wired or wireless local/LAN connection (lightning bolt) similar to headsets 16a–n. There is no disclosure whether base station 14 connects to WAN “directly” or indirectly via intermediary devices. Nor is there any disclosure of any software or software used to connect base station 14 and WAN 20, or base station 14 and headsets 16a–n. Mr. Gafford's testimony in reliance on “the teachings of the '040 patent” (Ex. 2003 ¶¶ 33, 36, 62) thus is not persuasive.

¹ The drawings “must show every feature of the invention specified in the claims.” 37 C.F.R. § 1.83(a). Applicants must furnish a drawing where necessary for an understanding of the subject matter sought to be patented when that subject matter admits of illustration. *See* 37 C.F.R. § 1.81.

The '040 patent specification discloses only that the parameters of intercom system 12 can be accessed “remotely via a wide area network 20, such as by way of the internet.” Ex. 1001, 6:19–20. 3M and Mr. Gafford do not cite any other disclosure of WAN 20 to help a skilled artisan determine what hardware or software may be needed or used to communicate over WAN 20 or connect to WAN 20. PO Resp. 6–7; *see* Ex. 2003 ¶¶ 23–28, 25 (the technician may access the intercom system via the Internet); Ex. 1016, APP3257:18–APP3258:4 (testifying that no other disclosure is provided).

Even if the '040 patent specification disclosed a particular connection between base station 14 and WAN 20, we would not limit the claims to such an embodiment when the language of claims 1 and 18 is broader. Claims 1 and 18 do not require the base station to have an ability to connect *directly* to a wide area communication network. The base station merely needs to have the ability to connect to, i.e., *communicate over*, a WAN in some unspecified manner. There is no disclaimer in the specification of intermediate devices or limitation on the means by which base station 14 is connectable to WAN 20. 3M does not identify any such disclosure either. PO Resp. 11–12, 25.

Mr. Gafford testifies that skilled artisans would understand certain hardware and software must be present in base station 14 so it has an ability to connect to a WAN, but he identifies only TCP/IP for an Internet, and cites no support for this assertion. Ex. 2003 ¶¶ 33–34, 59–62. We therefore accord little weight to his testimony, particularly in view of the silence of the '040 patent specification and claim language. *See* 37 C.F.R. § 52.65(a); *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (expert may explain terms of art and state of the art but cannot be used to prove the proper or legal construction of any instrument or writing).

3. “An intercom system . . . configurable for a drive-through, quick service [restaurant] establishment” (claims 1, 18)

3M argues that “[a]n intercom system . . . configurable for a drive-through, quick service restaurant establishment” in claim 1 and “a drive-through quick service establishment” in claim 18 is limiting because the preamble provides antecedent basis for “the establishment” recited in the body of claims 1 and 18. PO Resp. 14–16. 3M argues that the preamble is not a statement of intended use. *Id.* at 16–17. 3M argues that the preamble should be given weight, but does not indicate what scope or interpretation should be accorded to the preamble. *Id.* at 14–16; Pet. Reply 6.

In view 3M’s acknowledgement that the Wireless 6000 and 3M Wireless disclose intercom systems for quick service restaurants, as recited in claims 1 and 18,² it is unnecessary to determine whether the preambles of claims 1 and 18 should be given patentable weight. The issue is whether the teachings of the Wireless 6000 and 3M Wireless can be combined with those of the HME Pro850 and Telex Intercom Handbook to render obvious claims 1–32, as discussed below in HME’s asserted grounds.

4. “a template of parameters” (claims 1, 18)

HME argues that the limitation “a template of parameters” is “a plurality of parameters stored together as a group.” Pet. 14. 3M argues that

² 3M argues that the “HME Wireless 6000 discusses a wireless intercom system for use in a drive-through quick service restaurant establishment.” PO Resp. 21; Ex. 2003 ¶ 50. 3M argues that the “3M Wireless discloses a wireless intercom system for use in a drive-through quick service restaurant establishment.” PO Resp. 41; Ex. 2003 ¶ 53. 3M contends that wireless intercoms for quick service restaurants, such as HME Wireless 6000 and 3M Wireless are designed for simplicity of setup and operation. PO Resp. 49.

this phrase means “a plurality of parameters that can be stored and used to restore the intercom system to a working configuration.” PO Resp. 13–14.

We interpret “a template of parameters” to mean “a group of intercom system settings that control operation of the intercom system and can be saved together in a file.” This meaning is consistent with the ’040 patent specification, which discloses that the operation of intercom system 12 is governed by several parameters including a transmit or receive audio level (volume) for each headset 16a–n as well as separate volume or gain controls for each direction of communication. Ex. 1001, 5:36–44. The ’040 patent specification discloses that:

Many other parameters are also possible, such as lane assignment, receive volume, transmit 45 volume, master volume for a speaker associated with the drive-through facility, individual volume for each channel received by the drive-through facility, base station receive volume, base station transmit volume, page, greeter, vehicle detection alert, vehicle approaching alert, for examples. Many, if not all, of these parameters may be available to one or more staff members for individual adjustment.

Id. at 5:44–52.

Because multiple parameters may be used to set up, adjust, and balance intercom system 12, multiple parameters may be formed into sets of parameters. *Id.* at 6:51–55. “A given set of parameters for intercom system 12 may form a template 22, i.e., a set of parameters for intercom system 12 that, when implemented, will give rise to a particular operational characteristic for intercom system 12.” *Id.* at 6:55–59. Template 22 may be saved or stored for later recall to memory 24 that is local to establishment 10 or be saved remotely from establishment 10 in memory 26. *Id.* at 7:1–52.

Our interpretation also is consistent with the claims. Claim 1 recites that “at least one parameter can be saved into a template of parameters for later use.” Claim 18 recites that “at least one parameter for each of said plurality of headsets is grouped into a template of parameters that can be saved for later use.” Claims 4 and 20 depend, respectively, from claims 1 and 18 and recite “said template of parameters can be saved locally at the establishment.” Claims 5 and 20 depend from claims 1 and 18, respectively, and recite “said template of parameters can be saved to a location remote from the establishment.” Thus, one or more parameters can be grouped into a template of parameters and saved for a later *unspecified* use. *See* claim 2.

We decline to require a template of parameters to be “used to restore the intercom system to a working configuration” as 3M argues. PO Resp. 14. Claims 1 and 18 do not recite any particular “later use” of the template of parameters. The ’040 patent specification discloses that a template of parameters can be used to reset the intercom system, to change operational parameters, or to set up an intercom system initially and make it operational at a new location or new establishment. Ex. 1001, 7:1–49, 8:17–25, 42–61.

Claims 8 and 24 already recite that “said template of parameters is configured for recall to reset the system.” We, therefore, do not interpret “a template of parameters” in claims 1 and 18 to include a feature that is recited in dependent claims 8 and 24. *See Enzo Biochem Inc. v. Applera Corp.*, 780 F.3d 1149, 1156–57 (Fed. Cir. 2015) (independent claim should not be construed to require a limitation added by a dependent claim) (citations omitted); *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 910 (Fed. Cir. 2004) (claim differentiation is at its strongest where a limitation sought to be read into an independent claim already appears in a dependent claim).

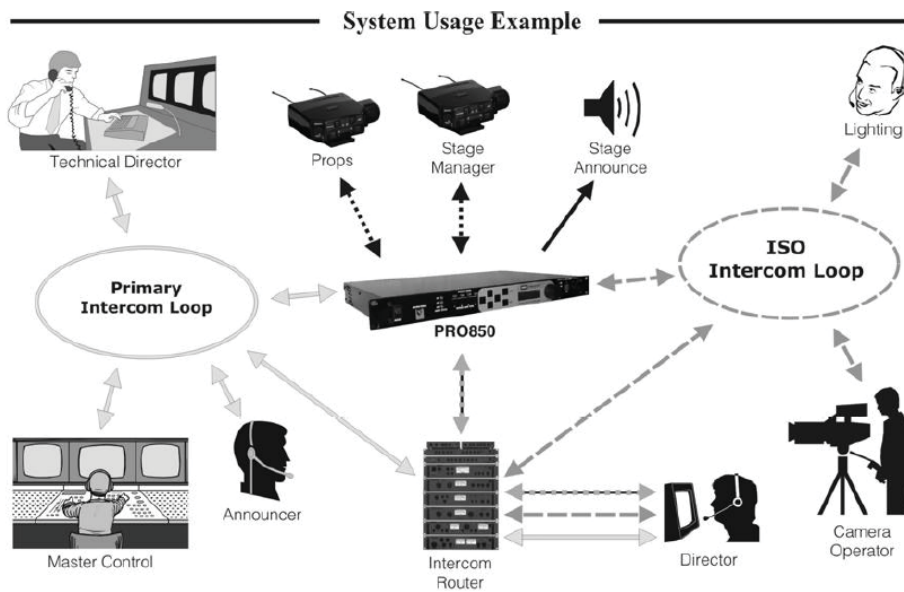
B. Asserted Grounds of Unpatentability

1. Obviousness of Claims 1–32 Over HME Pro850, Telex Intercom Handbook, and HME Wireless 6000

a. Overview of HME Pro850 (Ex. 1009)

The HME Pro850 Wireless Intercom Operating Instructions (“HME Pro850”) discloses a wireless intercom system including base stations that can be configured with up to four receivers and two transmitters that support up to four beltpacs and headsets in full-time transmit, full-duplex operation. Ex. 1009, APP2815, APP2817, APP2824–APP2841.

The base station and beltpacs can be configured on a PC using PC850 software and configuration settings can be saved to files. *Id.* at APP2849–APP2851. An RS-232 interface cable is used to connect the base station to the PC. *Id.* at APP2849. An illustration of the HME Pro850 system is reproduced below.



The figure above illustrates a system usage of the HME Pro850.

HME asserts that the HME Pro850 is prior art because it was publicly distributed to purchasers of HME's Pro850 intercom product, beginning in September 2003 (which is more than a year before the earliest effective filing date of the '040 patent, i.e., February 10, 2006). Pet. 8, 16; see 35 U.S.C § 102(b).³ HME cites the Declaration of Scott Hoeptner who is Chief Technology Officer of HME and participated in the development and release of the Pro850 wireless intercom. Ex. 1005, ¶¶ 1, 5. Mr. Hoeptner testifies that HME finalized "HM Electronics Pro850 Wireless Intercom Operating Instructions" and began distributing it with the Pro850 system in September 2003, as indicated by the September 2003 copyright date on page 2, and the September 11, 2003 date in the upper right corner of the cover page. *Id.* ¶ 6.

Mr. Hoeptner submitted a copy of the HME Pro850 manual with his Declaration. *Id.* Mr. Hoeptner testifies that, beginning in September 2003, a Pro850 manual was provided to each customer who purchased a Pro850 system. *Id.* ¶ 7. Approximately 140 Pro850 systems were sold to end users between September 11, 2003, and February 10, 2005. *Id.*

3M argues that the purported sales of 140 Pro850 systems asserted by Mr. Hoeptner does not demonstrate sufficient distribution to constitute publication without proof of sales from the actual sales records and proof of business practices to establish that the Pro850 manual was provided in such sales. PO Resp. 58. 3M also argues that Mr. Hoeptner's Declaration does not identify Exhibit 1009 as the document Mr. Hoeptner references as "this version of the Pro850 Manual." *Id.* at 58–59.

³ As the effective filing date of the claims is prior to March 16, 2016, the provisions of P.L. 112-29, which replaced the prior version of § 102, are not applicable.

We conclude that the HME Pro850 manual is a prior art printed publication under 35 U.S.C. § 102(b) and the version of the Pro850 manual referenced in Mr. Hoeptner's Declaration was submitted as Exhibit 1009 in this proceeding. Mr. Hoeptner testifies that a copy of the "HM Electronics PRO850 Wireless Intercom Operating Instructions" was submitted with his Declaration. Ex. 1005 ¶ 6. Mr. Hoeptner's Declaration was submitted as Exhibit 1005 to the Petition. Pet. Attachment B. Also submitted with the Petition was "HM Electronics, Inc., PRO850 Wireless Intercom Operating Instructions" as Exhibit 1009. *Id.* The title of Exhibit 1009 is "PRO850 Wireless Intercom Operating Instructions" published by "HM Electronics, Inc., 14110 Stowe Drive, Poway, CA 92064 USA," the same title identified in Mr. Hoeptner's Declaration and the Petition. See Ex. 1005 ¶ 6; Pet. 16, Attachment B. The upper right hand corner of the first page of Exhibit 1009 is inscribed "HME# 400520 Rev A 9/11/03" and the bottom of the next page is inscribed "*Copyright HM Electronics, Inc. – September 2003.*" This information also matches Mr. Hoeptner's description of the Pro850 manual. Ex. 1009, APP2812–13; Ex. 1006 ¶ 6.

We find that the HME Pro850 manual was publicly accessible to persons interested and ordinarily skilled in the art. The principal basis for this finding is Mr. Hoeptner's testimony that approximately 140 copies of the Pro850 manual (Exhibit 1009), were disseminated to the customers who purchased a Pro850 system, beginning in September 2003 and extending to February 10, 2005. Ex. 1005 ¶¶ 6–7. These copies of the Pro850 Manual (Exhibit 1009) were disseminated sufficiently at the time of its publication and more than one year before the February 10, 2006 critical date of the '040 patent (*id.*) to constitute a printed publication under 35 U.S.C. § 102(b).

In *Massachusetts Institute of Technology v. AB Fortia*, 774 F.2d 1104, 1109 (Fed. Cir. 1985), a paper delivered orally at a conference was held to be a printed publication where between 50 and 500 persons interested and of ordinary skill were informed of the existence of the paper and copies of the paper were distributed to at least six persons without any restrictions more than one year before the filing date of the patents-in-suit.

Similarly, a poster board presentation displayed for several days at an industry association meeting to those of ordinary skill in the art without any restriction on copying the information on it was sufficiently disseminated to be publicly accessible as a printed publication. See *In re Klopfenstein*, 380 F.3d 1345, 1350–51, 1352 (Fed. Cir. 2004). The reference was displayed more than two years before the filing date of the patent application at issue to be as a printed publication under 35 U.S.C. § 102(b). See *id.* at 1350.

A post on an Internet newsgroup was held to be a printed publication because it was disseminated sufficiently to those of ordinary skill in the art to be considered publicly accessible, as evidenced by at least six responses that were received to the article’s posting. See *Suffolk Techs., LLC v. AOL Inc.*, 752 F.3d 1358, 1364–65 (Fed. Cir. 2014).

We also find, based on Mr. Hoeptner’s Declaration, that copies of the Pro850 manual were sufficiently available to interested persons and persons of ordinary skill to constitute a printed publication. Customers who bought the Pro850 system received a Pro850 manual. Ex. 1005 ¶¶ 6–7. In *In re Enhanced Security Research, LLC*, 739 F.3d 1347, 1354–55 (Fed. Cir. 2014), a similar product manual was a printed publication because persons interested in buying or licensing the product could request a manual and the product was sold to or installed for a dozen customers. *Id.* at 1354–55.

In this case, approximately 140 customers received a Pro850 manual upon its publication and upon purchased of a Pro850 system. Ex. 1005 ¶ 7. The Pro850 manual provides safety, operating, and installation instructions for the Pro850 system. Ex. 1009, APP2813–14. Thus, persons receiving a copy of the Pro850 manual are interested persons and persons of ordinary skill in the art who install and operate the system.

This case is distinguishable from *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860 (Fed. Cir. 2010), where user manuals for a software product were not publicly accessible to qualify as printed publications. *Id.* at 866. One manual was marked “an unpublished work and is considered a trade secret belonging to the copyright holder” and the other manual was not marked with any indicium of either publication or secrecy. *Id.* at 865.

In this case, the HME Pro850 (Ex. 1009) includes a copyright notice of September 2003. Such a notice is evidence of publication of the Pro850 manual. See 17 U.S.C. § 401. Mr. Hoeptner testifies that HME published and began distributing copies of the Pro850 manual in September 2003, to customers who purchased the HME Pro850. Ex. 1005 ¶¶ 5–7. We credit Mr. Hoeptner’s testimony as evidence of accessibility. See *Orion IP, LLC v. Hyundai Motor Am.*, 605 F.3d 967, 974–75 (Fed. Cir. 2010) (an electronics parts catalog was a printed publication because it was accessible to persons interested in auto parts before the critical date based on its use by 150 to 200 sales persons for a sales and demonstrative pitch for car dealers of a system described in the catalog).

We find sufficient evidence of dissemination to interested persons and publicly accessibility to skilled artisans of the Pro850 manual to conclude that it qualifies as a printed publication under 35 U.S.C. § 102(b).

b. Overview of Telex Intercom Handbook (Ex. 1012)

The Handbook of Intercom Systems Engineering, First Edition (“Telex Intercom Handbook”), published by Telex Communications, Inc., 12000 Portland Ave S, Burnsville, Minnesota 55337 USA, in March 2002 as revision 4 and submitted as Exhibit 1012 to HME’s Petition, discloses a remote PC connecting over a WAN to a local PC that is connected to a base station (ADAM matrix) via a serial RS-232 interface. Ex. 1012, APP3024, Fig. 5.14. When both PCs run PC Anywhere software and the local PC runs intercom system software (AZ-EDIT), the remote PC can connect to the local PC over a wide area network and log into the intercom via the local PC to remotely control and diagnose the intercom. *Id.* This arrangement allows a user at a location remote from the intercom system to “have full ability to control and monitor the matrix [base station] remotely.” *Id.*

Figure 5.14 illustrates this arrangement below.

Figure 5.14 Matrix Intercom Remote Control

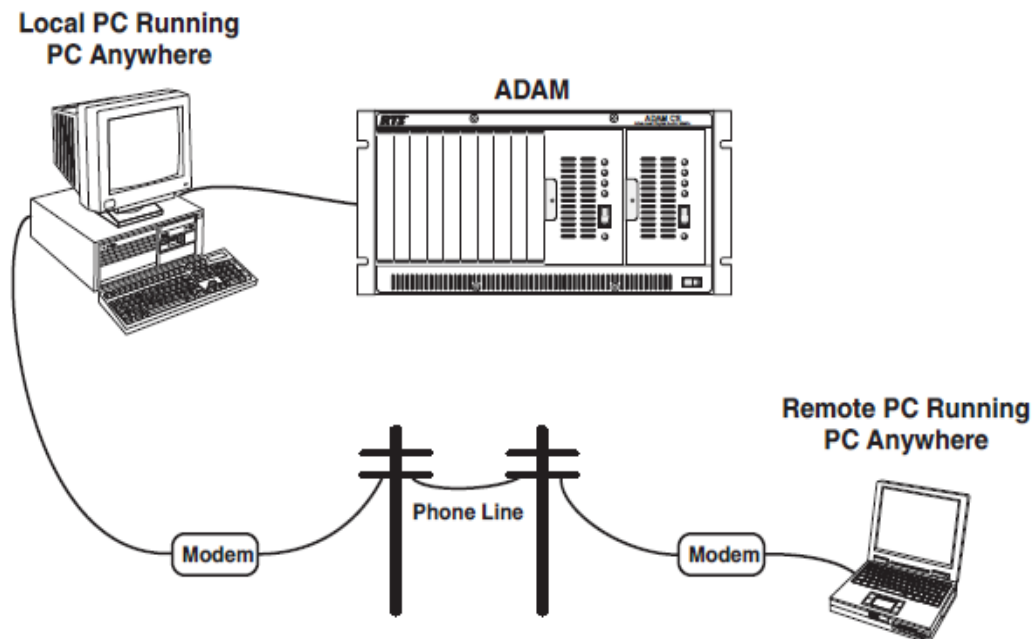


Figure 5.14 illustrates a remote control arrangement for an intercom.

c. Overview of HME Wireless 6000 (Ex. 1010)

The Wireless 6000 Installation Instructions (“Wireless 6000”) teach a wireless intercom for quick service restaurants. Ex. 1010, APP2861. A vehicle detector signals vehicle entry into a drive-in area. *Id.* at APP2861, 2880. The system controls outbound audio levels at an outside speaker and inbound audio levels from a speaker post microphone. *Id.* at APP2862.

d. Analysis

Whether an invention would have been obvious is a legal question based on underlying findings of fact, including (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness.⁴ *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966); *In re Gartside*, 203 F.3d 1305, 1319 (Fed. Cir. 2000).

Level of Ordinary Skill in the Art

HME asserts that a skilled artisan in the field of the ’040 patent in the 2006 time frame would have had a bachelor of science in either electrical engineering or computer science and between five and ten years’ experience in designing intercom systems. Pet. 8 (citing Ex. 1005 ¶ 10).

Mr. Gafford testifies that a skilled artisan would have had a bachelor’s degree in electrical, computer, or other information technology engineering and one-to-two years of experience developing, designing, implementing, or analyzing audio/telecommunication equipment and digital control systems. Ex. 2003 ¶ 13. Mr. Gafford testifies that a skilled artisan could have less

⁴ 3M does not assert any objective indicia for any grounds of unpatentability. *See* PO Resp. ii–v, 1–59.

education with more experience in developing, designing, implementing, or analyzing audio/telecommunication equipment/digital controls systems. *Id.*

We agree with HME's contention and adopt it as the level of ordinary skill. We find persuasive Mr. Hoeptner's testimony that at least five years of experience was desirable based on his experience designing and developing professional audio and quick service restaurant intercoms. Ex. 1005 ¶¶ 1, 5, 8–10. In contrast, Mr. Gafford lacks experience designing intercom systems and relies on experience as a litigation consultant and patron of quick service restaurants. *See* Ex. 1016, APP3217:17–APP3220:25; Ex. 2003 ¶¶ 4–10, 12.

HME's Contentions of Unpatentability

HME contends that claims 1–32 would have been obvious over HME Pro850, Telex Intercom Handbook, and HME Wireless 6000. Pet. 15. HME sets forth in the Petition with detailed claim charts and other contentions where these references disclose each limitation of claims 1–32. Pet. 16–22, 26–39. HME also asserts its reasons for combining the teachings of these references to render obvious the subject matter of claims 1–32. *Id.* at 22–25.

Obviousness of claims 1 and 18

Regarding independent claims 1 and 18, HME asserts that the HME Pro850 discloses a wireless intercom in Pro850's Figure 1 above (Ex. 1009, APP2815), with a base station that has the ability to connect to a wide area communication network ("WAN") because it is configured with a USB port and an RS-232 serial port to provide personal computer ("PC") interface capability. Pet. 17 (citing Ex. 1009, APP2815, APP2849), 26–27 (citing *id.* at APP2815). HME also asserts that the HME Pro850 discloses up to four belt-pacs configured for full-duplex operation to provide two-way wireless communication with the base station and configured to connect to a

headset where the wireless communication between the headsets and base station is configurable to adjust intercom system parameters to include the volume of communication transmitted and received at a headset by adjusting audio input and output levels and headset audio output at the base station, i.e., locally, or on a computer connected to the base station via an RS-232 connection. *Id.* at 17 (citing Ex. 1009, APP 2715, APP2817, APP2824, APP2838), 27–28 (citing *id.* at APP2838, APP2850). HME also contends that the HME Pro850 discloses that intercom system parameters including volume settings can be saved together in a single file on the base station or on a PC that is connected to the base station and this file groups the saved parameters as a template. Pet. 18–19 (citing Ex. 1009, APP2835, APP2840, APP2849–50), 29 (citing Ex. 1009, APP2835, APP2840, APP2849–50).

HME that asserts the Wireless 6000 discloses an intercom system configured specifically for use in a drive-through, quick service restaurant, as recited in the preambles of claims 1 and 18. Pet. 21 (citing Ex. 1010, APP2861), 26 (same), 35. HME asserts that the Wireless 6000 discloses wireless communication between the headsets and base station with at least one parameter that adjusts a volume level of communication between the headsets and ordering point, as recited in claim 18 (and claim 9). *Id.* at 21, 31–32 (citing Ex. 1010, APP2862, APP2880), 35–36.

HME contends that a person of ordinary skill in designing wireless intercoms would have been motivated to combine the advanced features of the HME Pro850 with quick service restaurant intercom systems, such as the Wireless 6000, to improve the functionality of the Wireless 6000 with these additional useful technologies, as expressly taught by the prior art such as Gosieski and confirmed by actual industry practice of HME. *Id.* at 23–25.

HME also asserts that it is well understood in the intercom industry that more advanced features appear first in higher-margin products, such as those sold to professional audio customers, and later find application in more cost-sensitive products such as intercoms for quick service restaurants, and such porting of more advanced technologies reflects actual industry practice. *Id.* at 23–24. To support this assertion, HME cites the Declaration of Scott Hoeptner, who testifies that a single team of engineers at HME designs all intercom products for all industry customers. *Id.* at 20 (citing Ex. 1005 ¶ 9).

HME contends that engineers who designed quick service restaurant intercoms around 2006 looked at professional audio intercoms for useful technologies. *Id.* at 24. Mr. Hoeptner describes HME’s practice of porting technologies from one intercom system to another to improve functionality of the other intercom systems. *Id.* (citing Ex. 1005 ¶¶ 3–4, 8, 9).

HME does not cite Gosieski for a limitation of the challenged claims, nor do we rely on Gosieski for a teaching of any such limitation. Rather, HME contends that Gosieski provides an example of a professional intercom system that can be used outside the professional audio market in other bi-directional wireless communications intercom applications. *Id.* at 24–25 (citing Ex. 1008 ¶ 79), 22. In other words, HME contends that Gosieski is an example of the migration, testified to by Mr. Hoeptner, of professional audio features to other markets. Specifically, HME asserts that the other applications disclosed in Gosieski as suitable for Gosieski’s advanced audio intercom features include wireless ultra-thin clients, digital walkie-talkies, digital hands-free headsets for the office, call centers, manufacture, construction, military environments, and hands-free VoIP telephone that interfaces with a business’s WAN/LAN intranet and VoIP. *Id.*

HME contends that it would have been obvious to modify the HME Pro850 wireless intercom system, as expressly taught by the Telex Intercom Handbook, to extend the configurability of the Pro850 system over a WAN using well-known PC Anywhere software, as taught in the Telex Intercom Handbook. *Id.* at 22. HME asserts that the modification is an obvious use of known techniques of extending the configurability of the Pro850 over a WAN to a remote computer to improve similar devices (other PC-connected intercoms) in the same way using PC Anywhere software. *Id.* at 22–23.

HME also asserts that it would have been obvious to upgrade a quick service restaurant intercom system of the Wireless 6000 with the advanced features of professional audio intercoms, including the remote monitoring and adjustability features disclosed in the Pro850, as extended over a WAN in the manner instructed in the Telex Intercom Handbook. *Id.* at 25. HME contends that modifying the Wireless 6000 with the advanced features of the Pro850 and Telex Intercom Handbook would have been obvious because it merely combines prior art elements according to known methods to yield predictable results where the core technology in a wireless intercoms is the same regardless of the customer or application. *Id.* (citing Ex. 1005 ¶ 9).

HME also contends that the teachings of Gosieski and actual industry practice indicate that this modification of the Wireless 6000 with features of the Pro850 and the Telex Intercom Handbook would have been obvious. *Id.*

We agree with HME that the Pro850, Telex Intercom Handbook, and Wireless 6000 teach each limitation of claims 1 and 18 and render obvious the subject matter of those claims in combination as proposed by HME. The reasons asserted by HME for combining the teachings of these references, as set forth above and in the Petition, are supported by rational underpinning.

Base Station Configured to Permit Remote Review and Adjustment

3M argues that claims 1 and 18 recite “a base station having the ability to connect to a wide area communication network” and “said base station being configured to permit remote review and remote adjustment . . . when said base station is connected to said wide area communication network.” PO Resp. 23. 3M argues that the plain language of claims 1 and 18 requires the base station to contain elements to permit remote review and remote adjustment of at least one parameter and the elements are in the form of software and/or hardware features within the base station. *Id.* at 27–28.

3M argues that a skilled artisan would understand this claim language to require the base station to have the necessary hardware and software to connect to a wide area communication network. *Id.* at 23. 3M argues that the Pro850 manual, in combination with the Telex Intercom Handbook and Wireless 6000, does not disclose a base station configured to permit remote review and adjustment of at least one parameter from a facility remote from the establishment when the base station connects to a WAN. *Id.* at 23–26.

3M argues that the Pro850 includes an RS-232 interface configured for local adjustments at a local facility and lacks the requisite hardware and software to connect to a wide area communications network. *Id.* at 23, 28–29. 3M argues that neither the ADAM base station disclosed in the Telex Handbook nor the Wireless 6000 has the necessary hardware and software to connect to a wide area communication network. 3M also argues that the remote and local computers using PC Anywhere in the Telex Handbook are not base stations and therefore they do not change the hardware or software programming of the base station to which they connect. *Id.* at 23–24, 29–31.

3M argues that the '040 patent specification describes a connection to a wide area network like the Internet and skilled artisans would understand the types of hardware and software that would be part of the base station to connect it to the Internet. *Id.* at 25. 3M further argues that the base station described in the '040 patent specification is not connected to a wide area network via an intermediate device so it must be connected directly to a WAN. *Id.* 3M argues that a skilled artisan would understand that a quick service restaurant intercom base station to be self-contained, easy to setup, cost effective, and compact and include the necessary hardware and software to connect to a WAN without a local PC running PC Anywhere. *Id.* at 25.

3M argues that the Wireless 6000 does not disclose a connection to a wide area network or an ability to connect over a wide area network. *Id.* at 26. 3M argues that HME Wireless 6000 does not remedy the deficiencies of HME Pro850 and Telex Handbook. *Id.* Finally, 3M argues that the claims require the base station to be configured to permit remote review and HME's proofs only focus on the ability of the base station to permit remote review and adjustment from a facility remote from the establishment rather than establishing that the base station actually is configured, designed, or made to permit remote review and remote adjustment. *Id.* at 31–33.

We agree with HME that HME Pro850, Telex Intercom Handbook, and Wireless 6000 disclose and render obvious a base station having the ability to connect to a WAN (and connected to a WAN) and configured to permit remote review and remote adjustment when the base station connects to a WAN via an RS-232 interface and a local PC running PC Anywhere and intercom system software like PC850.

Modified by teachings of the Pro850 and Telex Intercom Handbook, the Wireless 6000 has the ability to connect to, and is configured for remote review and adjustment over, a WAN. Their combined teachings modify the Wireless 6000 to include an RS-232 interface that can connect to a local PC running PC Anywhere software and intercom software, and then connect to a WAN, via the local PC, thus evincing an *ability to connect* to a WAN. The combined teachings configure the Wireless 6000 to permit remote review and adjustment of the base station over a WAN. As modified, the Wireless 6000 has necessary hardware and software to connect to, and communicate over, a WAN so it can be adjusted remotely, as claimed.

3M's arguments boil down to arguing that the base station must have an ability to connect *directly* to a WAN. PO Resp. 25 ("one of ordinary skill in the art in reading the '040 patent specification would realize the absence of any disclosure of the base station being connected to a WAN via an intermediate device—thus, the base station is directly connected to the WAN.") (citing Ex. 2003 ¶¶ 60, 62). As discussed above (*see supra* Section II.A.2), claims 1 and 18, however, do not require the base station to have the ability to connect directly to a WAN, only to *communicatively join* a WAN.

Mr. Gafford testifies that the Pro850 base station has an RS-232 interface, but lacks the hardware and software needed to connect to a WAN. *Id.* ¶ 60. Mr. Gafford testifies that the software appropriate for connecting to a WAN such as the Internet is a network stack such as the Transmission Control Protocol/Internet Protocol (TCP/IP) and a base station cannot communicate with other devices over the Internet without software such as TCP/IP. *Id.* Mr. Gafford also testifies that the remote and local computers using PC Anywhere in the Telex Intercom Handbook are not base stations or

part of a base station and would not result in a base station that is connected to a WAN. *Id.* ¶ 61. In addition, Mr. Gafford testifies that the very fact that the Pro850 intercom base station must be connected to a computer running PC Anywhere demonstrates that the base station cannot connect to a WAN without the additional apparatus. *Id.*

Mr. Gafford's testimony is not persuasive for the following reasons. First, Mr. Gafford appears to rely on the '040 patent disclosure to ascertain the types of hardware and software that would need to be part of the base station in order to connect it to the Internet. Ex. 2003 ¶ 62. Using a patent's description of the invention as evidence of what would have been known to skilled artisans at the time of the invention is improper. *See, e.g., W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 1547 (Fed. Cir. 1983) (error to attribute "that which only the inventor taught . . . to the prior art").

Second, Mr. Gafford does not identify any other hardware or software that would be needed to connect the base station to a WAN besides TCP/IP. Mr. Gafford also does not explain why in his opinion the base station of the Pro850 is not configured with the appropriate hardware and software to connect to a WAN such as the Internet, particularly in combination with PC Anywhere software according to teachings of the Telex Internet Handbook. Mr. Gafford appears to recognize that the Pro850 can communicate over a WAN via a local PC and PC Anywhere. *See* Ex. 2003 ¶¶ 48–49, 60–61.

Third, Mr. Gafford does not provide support for his testimony that a base station requires more than a hardware interface like an RS-232 serial interface of the Pro850 to connect to a WAN, because it requires a software protocol such as TCP/IP to communicate with other devices on the Internet. *Id.* ¶ 60. Mr. Gafford does not testify that a WAN is limited to the Internet.

As discussed above, the Pro850 teaches a base station configured with hardware and software to connect to a local PC running PC850 software and then to a WAN when teachings of the HME Pro850 are combined with those of the Telex Intercom Handbook. A skilled artisan would have recognized that it could connect to a WAN when teachings of the Pro850 and the Telex Intercom Handbook are combined as HME proposes.

The Pro850 base station thus has the ability to connect to a WAN, as claimed. Claims 1 and 18 do not require the base station to have the ability to connect *directly* or in a particular manner to a WAN. We decline to limit the scope of claims 1 and 18 to a particular connection in the absence of any disclosure in the '040 patent specification or any lexicographic definition or disclaimer that would limit the otherwise unconfined scope of those claims. *See Smith & Nephew, Inc. v. Rea*, 721 F.3d 1371, 1381 (Fed. Cir. 2013) (an unclaimed and undisclosed feature cannot be the basis for finding a patent to be non-obvious over the prior art); *Howmedica Osteonics Corp. v. Wright Med. Tech., Inc.*, 540 F.3d 1337, 1345 (Fed. Cir. 2008) (declining to impute a limitation into a disputed claim term in the absence of a clear requirement in the specification even where every disclosure of the disputed term in the specification shows the alleged limitation).

For these reasons, we do not credit Mr. Gafford's testimony on this point, or 3M's arguments in reliance thereon. PO Resp. 25 (citing Ex. 2003 ¶¶ 60, 62). 3M and Mr. Gafford acknowledge that the base station (ADAM) in the Telex Intercom Handbook, and the Pro850 and Wireless 6000 as modified by that teaching, would connect to a WAN, but would do so via an "intermediate device" or "additional apparatus." *Id.*; Ex. 2003 ¶ 61.

We agree with HME that the Pro850 base station has the ability to connect to a WAN through a serial RS-232 interface and a local PC with a modem. The local PC is an extension of the base station when it runs PC850 system software that allows a user to configure the Pro850 intercom system. When the local PC connects to a WAN, as taught by the Telex Intercom Handbook, the Pro850 base station can connect to the WAN. Essentially, the local PC is a node on the WAN to which the base station has the ability to connect. The local PC improves the user interface of the base station for easier configuration of the Pro850 intercom system. Ex. 1009, APP2849.

Even if the local PC is not considered as part of the base station, the base station itself has the ability to connect to a WAN by using its RS-232 interface to connect to a local PC that is connected to a WAN. Using PC Anywhere on the local PC and a remote PC, as taught by the Telex Intercom Handbook, allows the Pro850 base station to communication over the WAN with a remote PC and permit remote review and adjustment from a location remote from the site of the Pro850. Claims 1 and 18 require no more.

Motivation to Combine HME Pro850, Telex Handbook, and Wireless 6000

3M does not dispute that the Wireless 6000 discloses an intercom for a quick service restaurant. See PO Resp. 21–22; Ex. 2003 ¶ 93. Instead, 3M argues that a skilled artisan would not have been motivated to modify the Wireless 6000 in the manner suggested by HME. PO Resp. 49–50. 3M argues that a computer interface was not needed on quick service restaurant intercoms because their few controls were set by hand at the base station or belt pack once and not changed so they operate with minimal configuration. *Id.* at 49. Mr. Gafford provides testimony to the same effect. Ex. 2003 ¶ 93. 3M argues that HME relies on hindsight bias. PO Resp. 51.

3M's argument that quick service restaurant intercoms are set once and not changed (PO Resp. 49; Ex. 2003 ¶ 93) is inconsistent with the disclosure of the '040 patent, which describes how quick service restaurant intercom systems become unreliable or inoperable over time due to changing conditions, changing personnel, and inappropriate adjustment. Ex. 1001, 2:5–12. 3M does not describe the invention as their discovery or recognition of a problem that was unknown in the industry. See PO Resp. 5–7. Rather, 3M describes the innovation of the '040 patent as meeting a known need in the industry of maintaining and repairing quick service restaurant intercom systems in a way that saves time and money by avoiding the need for on-site visits by service technicians. *Id.*; Ex. 1001, 2:5–29. The Background of the Invention discloses that quick service restaurant intercom systems require periodic repairs and maintenance, and an establishment loses business and revenue when intercom systems develop faults that require an on-site visits by a service technician to repair and restore the system. *Id.* at 1:54–64.

Second, HME has provided reasons for modifying the Wireless 6000 with express teachings of the HME Pro850 and Telex Intercom Handbook that are supported by rational underpinning, and 3M's arguments do not persuade us otherwise. These references are from the same field as the '040 patent, which discloses the “present invention is generally related to wireless intercom systems and, more particularly, to wireless intercom systems for commercial establishments.” Ex. 1001, 1:15–17. The '040 patent discloses intercom system 12 with base station 14 in wireless communication with headsets 16a–n worn by staff of an establishment. *Id.* at 5:21–24, Fig. 1.

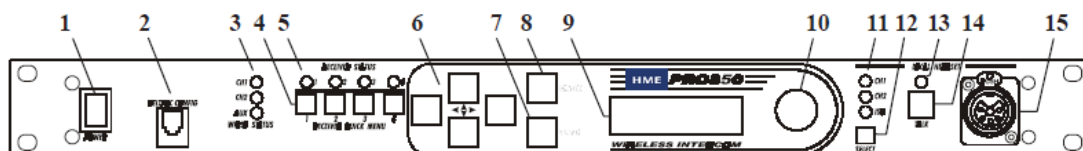
The Pro850 teaches a wireless intercom system with headsets, a base station, and beltpacs that provides duplex communication for environments

that include mobile operations. Ex. 1009, APP2815–APP2820. The HME Wireless 6000 discloses a wireless intercom system for use at a quick service restaurant with a base station, headsets, and body packs. Ex. 1010, APP2861. The Telex Intercom Handbook also teaches wireless intercom systems for many applications with a base station and headsets in two-way, wireless communication. Ex. 1012, APP2943–APP2944.

HME proposes to modify the Wireless 6000, which is a quick service restaurant intercom system, with an RS-232 digital interface so a computer can connect to the Wireless 6000 base station and operate the base station “remotely” with an RS-232 cable when the computer runs PC850 software. Pet. 23–24. The HME Pro850 teaches how to replicate a base station on a computer that is located away from the base station, and thereby automate the process of setting or adjusting intercom system settings on the computer, in lieu of setting all intercom parameters by hand using the knobs and tiny display of the Pro850 or Wireless 6000 base station. *Id.* at 23–29, 35–36.

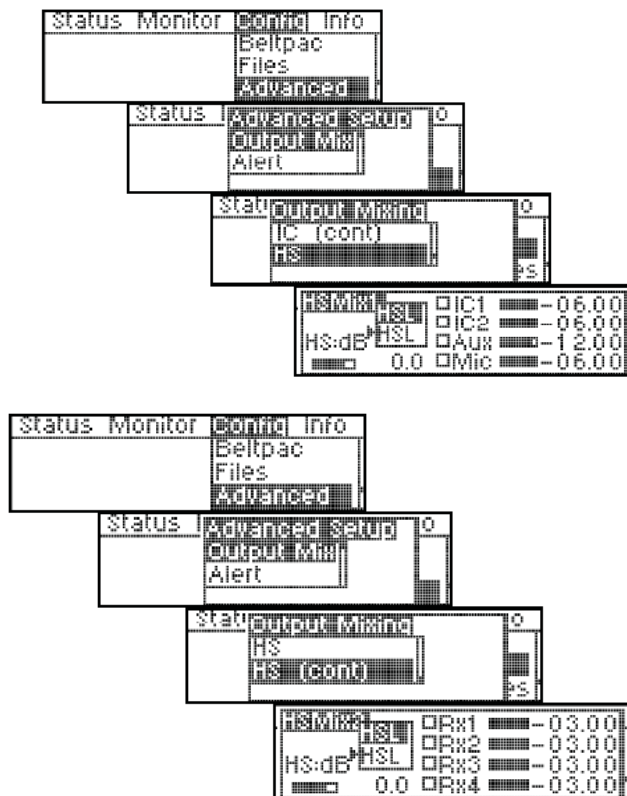
Therefore, the HME Pro850, itself, provides express teachings and rational underpinning to support the proposed modification of the Wireless 6000 so a computer running intercom software can control parameters of the intercom system. This technology provides a larger, user-friendly interface compared to the smaller display of the base station, reproduced below.

Base Station Front Panel Features



This figure illustrates the Pro850 base station front panel features.

Intercom system parameters are adjusted using the display screen 9 and multi-function knob 10 of the Pro850. Ex. 1009, APP2816. Exemplary displays that must be navigated in order to adjust a feature of the intercom system individually at the base station are reproduced below.



Headset Output Mixing:

Select HSL (headset left) or HSR (headset right), then select the box next to IC1, IC2, Aux and/or Mic to enable input. Use the control knob to adjust output level in 0.25dB or 2.25dB increments for the desired mix.

Place the cursor to the left of the bar below HS:dB and use the control knob to adjust the overall headset audio output level in 1.5dB increments.

Headset Output Mixing (continued):

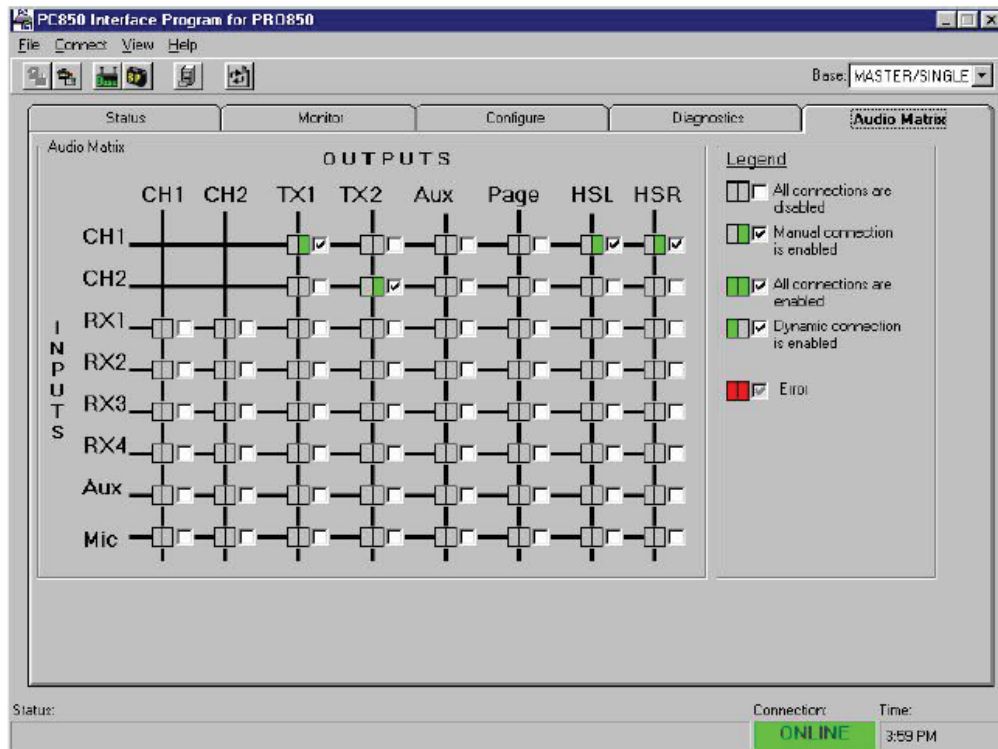
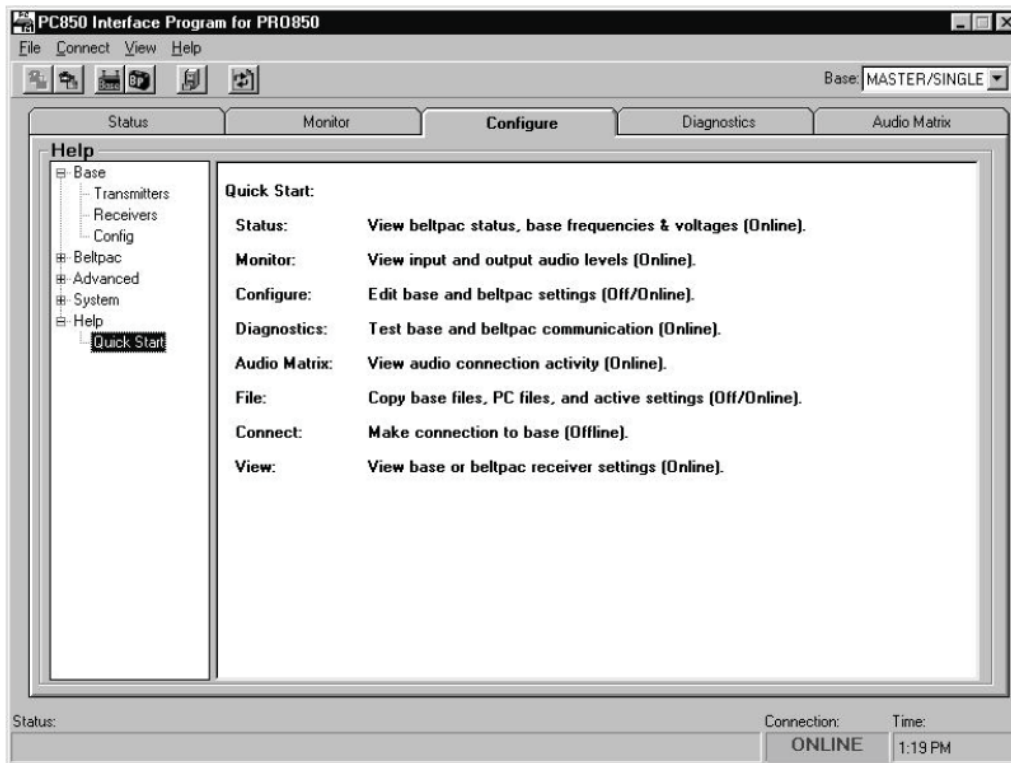
Select HSL (headset left) or HSR (headset right), then select the box(es) next to RX1-RX4 to enable input. Use the control knob to adjust output level in 0.25dB or 2.25dB increments for the desired mix.

Check these boxes only if you want receiver audio continuously fed to the Headset Output. Leave them unchecked for normal operation.

Place the cursor to the left of the bar below HS:dB and use the control knob to adjust the overall headset audio output level in 1.5dB increments.

The diagrams above show the multiple display windows that must be navigated just to adjust the headset volumes. *Id.* at APP2838; Pet. 19. Other parameters are adjusted the same way. *See id.* at APP2825–APP2841.

HME proposes to improve the Wireless 6000 base station with an RS-232 serial interface and accompanying intercom system software, as taught by the Pro850, so that a computer can be used to adjust intercom parameters of the Wireless 6000 in the same way as the Pro850, as shown below.



The first diagram illustrates the screen that opens on the PC that is attached to the base station via an RS-232 interface. The Pro850 discloses that this screen and drop-down menu have the same functions and settings as the Pro850 base station. *Id.* at APP2850; Pet. 18. The second diagram illustrates an audio connection matrix window for adjusting all active audio connections of the Pro850 using a PC connected to the base station with an RS-232 interface and running PC850. Ex. 1009, APP. 2850–2851; Pet. 18.

We agree with HME that a skilled artisan would have been motivated to modify the HME Wireless 6000 quick service restaurant intercom system to include this more “advanced” networking feature of the HME Pro850 to permit review and adjustment of intercom parameters on a computer that provides a better user interface. The improved computer interface allows a technician or other user to access all system parameters from a single screen, as shown above in the top first diagram reproduced above. *See* Pet. 18.

The HME Pro850 itself teaches that “[a] particularly useful feature of the PC850 is the ability to display (and alter) the audio connection matrix. This window shows all possible and active audio connections.” Ex. 1009, APP2850; *see* Pet. 18, 27–28. The HME Pro850 teaches that a user can make all Pro850 base station and beltpac settings, i.e., parameter settings, on the networked PC and “save the settings to files.” Ex. 1009, APP2849; Pet. 18. A person using the networked PC can “view input and output audio levels” and “edit base and beltpac settings.” Ex. 1009, APP2850; Pet. 28. We also agree with HME that a skilled artisan would have appreciated that adding this feature to the Wireless 6000 would have allowed intercom audio parameters to be set and adjusted more easily and saved in groups/files as a template(s) of parameters as taught by the Pro850. *See* Pet. 17–19, 23–25.

We agree with HME that this modification uses known technology and techniques to improve similar intercoms in the same way for predictable results. Pet. 22–23. Mr. Hoeptner testifies that core technologies of wireless intercoms are the same for different customers and applications. Ex. 1005 ¶ 9. He also testifies that the same engineers design all wireless intercoms using technologies from one intercom system in other systems. *Id.* ¶¶ 8–9.

Gosieski confirms this practice by teaching that its advanced wireless intercom technologies can be used in many other applications beyond the audio industry.

the IEM earpiece with integrated headset microphone can operate using standard wireless LAN protocols such as the 802.11 series and 802.16, thereby extending the application of the present invention beyond the audio industry for other uses which might employ a bi-directional communication system (e.g., wireless ultra thin client, digital “walkie-talkie”, digital hands-free headset for office, call center, manufacturing, construction, military and search and rescue environments, and a hands-free VoIP telephone that interfaces with a business’s intranet (WAN/LAN and VoIP system)).

Ex. 1008 ¶ 79. Thus, Gosieski provides an express teaching to use the IEM earpiece and advanced features of Gosieski’s intercom in applications that are similar to quick service restaurants such as walkie-talkies, digital hands-free headsets for the office, call center, manufacturing, and hands-free VoIP telephones that interface with a business’s WAN/LAN and VoIP. *Id.*

HME’s proposed modification of the Wireless 6000 merely automates the conventional process of manually setting intercom parameters at the base station by providing a computer interface in lieu of the small display screen and multi-function knob of the Pro850 base station to make setting and adjustment of audio parameters more convenient, more efficient, and easier.

See DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co., 464 F.3d 1356, 1368 (Fed. Cir. 2006) (“[W]e have repeatedly held that an implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the ‘improvement’ is technology-independent and the combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller more durable, or more efficient.”); *Sandt Tech., Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1355 (Fed. Cir. 2001) (motivation to alter prior art welded cover with studs existed because studs were “a cheaper, faster, and more convenient method of attachment”); *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1326–27 (Fed. Cir. 2008) (“The record in this case demonstrates that adapting existing electronic processes to incorporate modern internet and web browser technology was . . . commonplace at the time the [challenged] patent application was filed.”); *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161–62 (Fed. Cir. 2007) (Obvious to combine an electro-mechanical toy with a “more modern” toy made with electronic components “to update it using modern electronic components in order to gain the commonly understood benefits of such adaptation, such as decreased size, increased reliability, simplified operation, and reduced cost.”).

3M does not challenge the modification of the Wireless 6000 as being beyond the level of ordinary skill or unpredictable. Instead, 3M and its expert, Mr. Gafford, assert arguments against making the combination.

3M argues that there was no reason to modify the Wireless 6000 in the manner proposed by HME because the Wireless 6000 lacks an RS-232 or other digital communication interface. PO Resp. 52–53 (“Petitioner has

never explained why HME Wireless 6000 quick service establishment intercom did not include a digital computer interface.”). 3M argues that the Wireless 6000’s release during the same period as the Pro850 without an RS-232 interface is evidence that skilled artisans did not recognize the value of a digital interface for quick service restaurant intercom system. *Id.* at 53.

This argument is not persuasive because 3M has not explained why HME’s proposed improvements to the Wireless 6000 are inadvisable or beyond the level of ordinary skill in the art. Mr. Hoeptner testifies that the Wireless 6000 is a low cost alternative to the Pro850 and was adapted for use in the audio industry as a low cost alternative to the Pro850. Ex. 1005 ¶ 8. 3M seems to contend that a device cannot be improved or altered from its initial design. *See* PO Resp. 53–54. This is not the law of obviousness.

“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007); *accord Leapfrog*, 485 F.3d at 1161 (“Applying modern electronics to older mechanical devices has been commonplace in recent years.”); *In re Dance*, 160 F.3d 1339, 1344 (Fed. Cir. 1998) (“[T]he simplicity of the prior art is rarely a characteristic that weights against obviousness of a more complicated device with added function.”).

3M argues that the modification was not obvious because the Wireless 6000 was released in 2003 without an interface, while the interface was not added until 2010. PO Resp. 52–54. This argument is not persuasive. *See In re Kahn*, 441 F.3d 977, 990–91 (Fed. Cir. 2006) (the mere passage of time without claimed invention is not evidence of non-obviousness).

Mr. Hoeptner testifies that cost, rather than technological reasons, determined the features available on the Wireless 6000. Ex. 2004, 54:8–56:6. Mr. Hoeptner testifies that the Wireless 6000 is a low cost intercom for quick service restaurants and was used to design a low cost professional audio intercom. Ex. 1005 ¶ 8.

HME proposes to combine advanced features of the Pro850 with the Wireless 6000 to improve the functionality of the Wireless 6000 in the same way as the Pro850, i.e., to improve its user interface and configurability, not to save money or reduce costs. Pet. 23–25; *Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1013 (Fed. Cir. 1983) (“[T]hat the two disclosed apparatus would not be combined by businessmen for economic reasons is not the same as saying that it could not be done because skilled persons in the art felt that there was some technological incompatibility that prevented their combination.”). The Telex Intercom Handbook also teaches that the cost of intercom features, rather than technological factors, is a significant factor in determining which intercom system is used and what features are used, e.g., wireless vs. wired connections. Ex. 1012, APP2998, 3034.

3M’s arguments that the modification requires an additional computer at extra cost and would not be easy to setup, cost effective, compact, or more reliable than a base station and would add operational complexity (Ex. 2003 ¶¶ 94–96) are unsupported by any evidence of record. PO Resp. 50. Even if a modification is disadvantageous in some respect, the modification may be obvious if the advantages offset or outweigh potential disadvantages. See *DomePatent L.P. v. Lee*, 799 F.3d 1372 (Fed. Cir. 2015) (prior art did not teach away, particularly where prior art provided roadmaps of how to offset disadvantages of the combination). Here, the prior art provides a roadmap.

The Pro850 teaches the advantages of adding an RS-232 interface to the Wireless 6000 to give it the ability to be adjusted and controlled on a computer. This modification reduces the complexity and time needed to adjust or reset intercom parameters on a local PC and its improved interface. The ability to save audio parameters and settings in files on a PC also allows a restaurant staff to use saved files to reset the intercom system more easily.

3M and Mr. Gafford do not provide persuasive evidence or argument that a skilled artisan would have been discouraged or dissuaded from making the proposed modification. *See In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004) (where prior art's disclosure did not criticize, discredit, or otherwise discourage the claimed solution, it did not teach away); *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (same). Nor do 3M or Mr. Gafford address HME's reasons for modifying the Wireless 6000. Thus, we are not persuaded by their assertions that the combination lacks a credible rationale. *See* PO Resp. 51–51; Ex. 2003 ¶ 97.

3M's argument that not all features of professional audio systems are appropriate for a quick service restaurant is inapposite because HME only proposes to add an RS-232 interface to the Wireless 6000 to allow review and configuration from a remote computer. PO Resp. 52; Ex. 2003 ¶ 98.

The HME Pro850 and Telex Handbook disclose how to extend the configurability of the Wireless 6000 over a WAN. Mr. Hoeptner testifies that such modifications are within the level of ordinary skill. Ex. 1005 ¶¶ 5, 8, 9. The Telex Intercom Handbook also teaches how a serial RS-232 port on an intercom like the Pro850 or the modified Wireless 6000 can be used to adjust intercom parameters over a WAN simply by running PC Anywhere and intercom software on the local and remote PCs. Ex. 1012, APP3024.

Mr. Gafford's concerns about the system's security (Ex. 2003 ¶ 94) are addressed by the disclosure that PC-Anywhere software uses secure login and a security password. Ex. 1012, APP3024.

Mr. Gafford's testimony that the modification requires a computer at extra cost and the computer would not be easy to setup, cost effective, compact, or more reliable than the base station with the same capabilities (Ex. 2003 ¶¶ 94–96) is unsupported by any underlying facts and therefore is unpersuasive. *See* 37 C.F.R. § 42.65. HME offered this arrangement in 2010 for a restaurant intercom. Ex. 2006.

At deposition, Mr. Gafford testified that he had never (1) designed a wireless intercom system, (2) worked on a wireless intercom, (3) designed a product for sale to a quick service restaurant, (4) worked on a product for sale to a quick service restaurant, or (5) worked on a wireless intercom project. Ex. 1016, APP3220:3–25. Mr. Gafford testified that he lacks two years of experience as a skilled artisan in the '040 patent technology. *Id.* at APP3221:1–APP3224:25. Mr. Gafford testified that his “experience” with quick service restaurants comes from reading the '040 patent and prior art, and visiting quick service restaurants. *Id.* at APP3225:22–APP32333:22. Thus, we do not credit his testimony in these regards. *See* Pet. Reply 2.

Nor do we credit Mr. Gafford's testimony that a skilled artisan would understand that the Wireless 6000 is designed for local, manual adjustment, and a significant amount of re-engineering would be required to add remote monitoring and adjustment capabilities to the Wireless 6000. *See* Ex. 2003 ¶¶ 100–101. Mr. Gafford cites no basis for his opinion and admits to having no professional experience with quick service restaurant intercoms. *See* Ex. 1016, APP3217:17–APP3234:25.

Our reading of the same prior art leads us to conclude that the Pro850 and Telex Intercom Handbook describe how to configure intercom systems for remote adjustment over a WAN. The Pro850 discloses how to provide remote review via an RS-232 serial interface and PC850 software running on Windows™. Pet. 17–18; Ex. 1009, APP2815, APP2849–50. This teaching provides motivation and instruction to modify the Wireless 6000 intercom to include an RS-232 interface and Wireless 6000 software for a local PC so the Wireless 6000 intercom can be controlled and adjusted on a local PC running that same system software. A person of ordinary skill is a person of ordinary creativity, not an automaton. *See KSR*, 550 U.S. at 421.

The Telex Intercom Handbook also provides an express teaching and motivation for this modification. The Telex Intercom Handbook teaches that it is known for an intercom system (ADAM) to be controlled and adjusted from a local PC over a standard RS-232 serial interface. Pet. 20; Ex. 1012, APP3024, Fig. 5.14. Figure 5.14 of the Telex Intercom Handbook, which is reproduced above, illustrates a local PC connected to an intercom base station via an RS-232 interface. Ex. 1012, APP3024. This disclosure also supports HME’s proposal to configure the Wireless 6000 with an RS-232 interface of the HME Pro850, in addition to the express teachings of the Pro850 manual itself, by also teaching the advantages of this configuration.

The Telex Intercom Handbook provides further motivation to extend the configurability of the Pro850 and Wireless 6000 (as modified with a RS-232 interface of the Pro850) over a WAN by using PC Anywhere software on the local PC and on a remote PC, which connects to the local PC over a WAN. Ex. 1012, APP3024. The remote PC can control the intercom to the same extent as the local PC and base station can do. Pet. 20–21, 26–29.

That the Telex Intercom Handbook illustrates a remote review and adjustment capability over a WAN for a “matrix” intercom system is of no particular significance. The Telex Intercom Handbook discusses matrix intercoms as a type of intercom system that may be wireless. *See* Ex. 1012, APP2943–2944. The Telex Intercom Handbook teaches that wireless intercom systems can be designed, installed, configured, and operated in other configurations such as matrix or party-line. *Id.* at APP2943–2944.

The key point for purposes of our analysis and the unpatentability contentions of HME is that the Telex Intercom Handbook teaches that, in situations in which an intercom system is connected to a local PC that can control and adjust the intercom base station (e.g., ADAM), this control and adjustment capability of the local PC can be extended more remotely over a WAN (phone lines) to a remote PC at another location. *Id.* at APP3024.

The Telex Intercom Handbook teaches how to accomplish this feat – the local and remote PCs each run a copy of PC Anywhere software and the local PC runs the intercom system software (AZ-EDIT in the example of the ADAM intercom). *Id.* at APP3024. The Telex Intercom Handbook teaches that with this remote control configuration, “you have the full ability to control and monitor the matrix remotely.” *Id.* Thus, the Telex Intercom Handbook provides express teachings and motivation for HME’s proposed modification of the Wireless 6000 to include a serial RS-232 interface of the Pro850 and PC Anywhere software for WAN connectivity and remote configurability, as claimed. The Telex Intercom Handbook teaches that the availability of intercom system software that runs on Windows PC (as the Pro850 teaches) provides a number of possibilities for remote control and configuration, such as the PC Anywhere scenario described above. *Id.*

It is well settled that the reasons for combining teachings of the prior art and modifying the prior art to render a claimed invention obvious may differ from those of the inventors. *See, e.g., Alcon Research, Ltd. v. Apotex Inc.*, 687 F.3d 1362, 1368–69 (Fed. Cir. 2012) (“We have repeatedly held that the motivation to modify a prior art reference to arrive at the claimed invention need not be the same motivation that the patentee had.”) (citations omitted). HME has provided multiple rationales for combining teachings of the HME Pro850, HME Wireless 6000, and Telex Intercom Handbook. As discussed above, these reasons are supported by rational underpinning and, in many cases, are taught expressly in the prior art references themselves.

We agree with HME that the benefits of such modifications outweigh the costs such that skilled artisans would have been motivated to make the proposed combinations and modifications to achieve remote adjustment and review of intercom system parameters over a WAN, as claimed. Indeed, the Telex Intercom Handbook acknowledges the advantages and disadvantages of wireless intercom systems, but nonetheless endorses those systems and teaches remote adjustment over a WAN for intercoms. Ex. 1012, APP2943–APP2944, APP3031–APP3034, APP2994–APP3000 (matrix intercoms).

The Telex Intercom Handbook teaches that wireless intercom systems are not tethered by wires and “are employed where the limitation of wireless systems which can include fidelity, interference, lack of range, lack of security (real or perceived), and batter life limitations *are outweighed by the freedom of being cordless* [and] [t]his freedom can be essential in many applications.” *Id.* at APP2943. The Telex Intercom Handbook also teaches that the most basic accessory of an intercom system is the headset, which may include a noise-canceling microphone to reduce wind noise and other

necessary features that are “vital to creating an intercom system that meets the communications needs of the users.” *Id.* at APP2946. These teachings indicate that it is known in the art to design and modify intercom systems and their accessories for particular applications. They also support HME’s assertion that skilled artisans would have known how to include features of the Pro850 and Telex Intercom Handbook on the Wireless 6000 without affecting operations in quick service restaurants. *See KSR*, 550 U.S. at 421.

We agree with HME that the advantages of configuring the Wireless 6000 for remote review and adjustment of intercom system parameters, as taught by HME Pro850 and the Telex Intercom Handbook, include the ability to adjust and review system parameters remotely, as claimed, and also to provide an improved interface to that of the tiny display of the base station to make such adjustments more efficient and easier. Remote setting also allows parameters to be saved and used to reset an intercom system or set up a new system in a similar environment. We do not find the size and cost of a laptop PC to outweigh these benefits. We are not persuaded that storage and use of such a PC is incompatible with quick service restaurants. Indeed, HME subsequently provided just such a configuration for its drive-through restaurant intercom system. *See Ex. 2006*. The cost savings from using PCs to improve accuracy and ease of settings outweighs and offsets the costs of having a technician fix a system on site. *See In re Urbanski*, 809 F.3d 1237, 1243–44 (Fed. Cir. 2016) (a skilled artisan would have been motivated to pursue the desirable properties taught by one prior art reference for the proposed combination even at the cost of another desirable property taught by the other prior art reference). Here, 3M’s attorney argument is not a contrary teaching of the prior art or contrary evidence of any other type.

We also find motivation to extend the remote configurability of the Pro850 and Wireless 6000 over a WAN, as taught by the Telex Intercom Handbook, from the understanding of skilled artisans that reconfiguring known devices to operate over a WAN such as the Internet is obvious.⁵ See, e.g., *Western Union Co. v. Moneygram Payment Sys., Inc.*, 626 F.3d 1361, 1370–71 (Fed. Cir. 2010) (using internet-based communications protocols for networking systems would have been obvious); *Muniauction*, 532 F.3d at 1326–27 (obvious to use the Internet for existing electronic processes at a time when doing so was commonplace); *In re Mettke*, 570 F.3d 1356, 1360–61 (Fed. Cir. 2009) (it was obvious to add Internet access to a prior art kiosk with a fax machine).

Based on the foregoing, a preponderance of evidence supports HME's contentions that the combined teachings of the HME Pro850, the Wireless 6000, and the Telex Intercom Handbook, which combination is supported by rational underpinning, teach or suggest each limitation of claims 1 and 18 and render those claims obvious. Where 3M has not opposed HME's contentions that the Pro850, Wireless 6000, and Telex Intercom Handbook teach or suggest other elements of claims 1 and 18 (Pet. 16–22, 26–29, 35–36) (see PO Resp. 17–40), HME's allegations of material fact are considered to be admitted. 37 C.F.R. §§ 42.23(a), 42.120(a). We also find that HME's contentions are supported by a preponderance of evidence. We conclude that claims 1 and 18 would have been obvious in view of the Pro850, the Telex Intercom Handbook, and the Wireless 6000.

⁵ The '040 patent discloses that a technician may access intercom system 12 via a wide area network 20 like the internet. Ex. 1001, 6:15–20, 2:38–41.

Claims 5, 21

Claims 5 and 21 depend from claims 1 and 18 respectively and recite that “said template of parameters can be saved to a location remote from the establishment.” We are persuaded that the HME Pro850 and Telex Intercom Handbook teach these features. The HME Pro850 teaches that a PC attached to a base station via an RS-232 interface and running PC850 software can adjust intercom audio parameters to include a communication *volume level* and can save groups of these parameters in a file on the PC. Pet. 27–29, 30; Ex. 1009, APP2827, APP2830, APP2832, APP2835, APP2840, APP2838, APP2849–APP2850. Configuration settings can be saved as files on the base station or a connected PC, and the settings file provides a template of parameters that can be recalled and used. Ex. 1009, APP2835, APP2840, APP2849–APP2850. The Pro850 teaches that the RS-232 interface allows a local PC to make and save intercom settings in the same manner as the base station. *Id.* at APP2849–APP2850; Pet. 28–29. These files form a template of parameters, as claimed. See Ex. 1001, 6:51–59 (a template of parameters gives rise to a particular operational characteristic).

The Telex Intercom Handbook similarly teaches the use of intercom system software and PC Anywhere software on a local and a remote PC to allow the remote PC to connect to the local PC over a WAN and configure an intercom system that is connected to the local PC by an RS-232 interface and then save the settings on a remote PC. Ex. 1012, APP3024; Pet. 27–28; Pet. Reply 10–11; Pet. 21, 26–29, 30, 35–36, 37. Running intercom system software (AZ-EDIT) and PC-Anywhere on local and remote PCs gives users at remote locations “full ability to control and monitor the matrix remotely.” Ex. 1012, APP3024.

The remote PC has the ability to “remotely control and diagnose the intercom.” *Id.* This provides the same ability as the local PC to configure and save intercom system parameters in files as templates for later recall and use of the saved files/templates, including volume parameters, as claimed. *See* Ex. 2003 ¶ 76 (configuration files can be saved on a remote computer if it is running intercom system software).

In opposition, 3M raises two principal arguments. First, 3M argues that the HME Pro850 teaches that configuration settings for the base station and beltpacs can be set on a PC and saved to file, but does not disclose that the settings are saved to a location remote from the establishment. PO Resp. 34. 3M also argues that the HME Pro850 does not indicate that the settings that are saved to files include a parameter to adjust a communication volume level, or are saved for later use. *Id.* Mr. Gafford testifies to the same effect without citing any record evidence. Ex. 2003 ¶¶ 74–76. 3M further argues that the Telex Intercom Handbook does not remedy this deficiency because the configuration files of the Pro850 cannot be saved to a remote computer using PC Anywhere. *Id.* at 35. 3M argues that only mouse and keyboard commands are transferred. *Id.* Mr. Gafford testifies that files and templates of parameters cannot be transferred to a remote PC using PC Anywhere without running intercom system software. *Id.*; Ex. 2003 ¶ 76.

3M’s arguments do not acknowledge the pertinent teachings of the HME Pro850 and the Telex Intercom Handbook, discussed above, and thus are not persuasive. HME proposes to do exactly what Mr. Gafford explains. HME contends that the Pro850 teaches a configuration in which a local PC connects to a base station with an RS-232 interface and then runs PC850 software that allows the local PC to control and configure the Pro850 base

station. This configuration allows intercom parameters, including volume, to be saved in files as templates on the base station, or on a local PC, as claimed. *See* Pet. 17–19, 26–29, 35–36. Thus, the Pro850 manual teaches that the base station’s functions, including the ability to configure intercom system parameters such as volume and save the settings in files for later recall to configure the system, can be replicated on a PC that is connected to the base station via an RS-232 serial interface and that runs PC850 software – the Pro850 intercom software. Ex. 1009, APP2821–APP2841, APP2849–APP2851. This feature “enables the user to make all PRO850 base station and beltpac configuration settings on a PC and save the settings to files.” *Id.* at APP2849. 3M does not dispute these teachings. *See* PO Resp. 19, 34.

HME proposes to extend this capability to a PC situated at a location that is remote from the establishment where the intercom system is located, as claimed, based on the Telex Intercom Handbook, which teaches a local PC connected to a base station with an RS-232 interface can configure and control the base station when it runs base station software (AZ-EDIT). A remote PC connected to the local PC via a WAN can configure and control the intercom system through the local PC when the local and remote PCs both run PC Anywhere software. Ex. 1012, APP3024. The remote PC has “full ability to control and monitor the intercom remotely” just like the local PC to include setting and saving groups of parameters (templates) in files for later recall and use. *See id.*; Pet. 20–21, 26–29, 35–36; Pet. Reply 10–11.

Based on the foregoing, we conclude that claims 5 and 21 would have been obvious in view of the combined teachings of the Pro850, the Telex Intercom Handbook, and the Wireless 6000.

Claims 6, 7, 22, 23

Claims 6 and 7, and claims 22 and 23, depend respectively from claims 1 and 18 and recite that “said template of parameters is a default” (claims 6 and 22) or “a factory default” (claims 7 and 23). 3M argues that the Wireless 6000 discloses mechanical switches that are set at a factory and do not serve as a template of parameters to save or access a volume level of communication with the headset for later use, as claimed. PO Resp. 36–38.

We find the asserted prior art teaches or suggests these features. The Wireless 6000 teaches the concept of setting intercom parameters as a default through switches and 3M does not dispute this assertion of HME. PO Resp. 37. As discussed above, the HME Pro850 teaches parameters of the intercom system that can be adjusted and saved in groups for later recall and use in configuring and operating the intercom system. Pet. 27–29. HME relies on the Wireless 6000 to teach that intercom system parameters can be set as factory defaults. *Id.* at 30–31, 37. The Wireless 6000 does not teach away from presetting intercom system parameters in a data structure rather than using mechanical pins. Ex. 2003 ¶¶ 78–79. A skilled artisan aware of the teaching of the Wireless 6000 could preset intercom parameters on the Pro850 intercom system as a factory default and would have been motivated to do so based on the express teachings of the Wireless 6000. Thus, HME relies on the Wireless 6000 to teach presetting intercom system parameters in a group or template at a factory. *See* Pet. 21–22, 30–31. This teaching is readily combinable with the Pro850 intercom to preset audio and other parameters of the Wireless 6000 quick service restaurant intercom to include volume level settings, as discussed for claims 1 and 18.

In effect, 3M has attacked the teachings of the references individually where HME relies on the combined teachings of the references. The Pro850 teaches displays that “provide customized configuration settings for the base station and beltpacs” and “allow you to save your settings to a file for future access.” Ex. 1009, APP. 2827. Groups of customized settings could be saved as a “factory default” based on teachings of the Wireless 6000.

Based on the foregoing, we conclude that claims 6, 7, 22, and 23 would have been obvious in view of the combined teachings of the Pro850, the Telex Intercom Handbook, and the Wireless 6000.

Claims 14, 29

Claims 14 and 29 depend from claims 1 and 18 respectively and recite that the intercom system comprises “software configured to determine if a fault condition exists in the system.” 3M acknowledges that HME Pro850 discloses an Alert Relay that signals a high temperature in the base station, low battery in the beltpac, or catastrophic faults in the base station. See PO Resp. 38–39; Ex. 2003 ¶ 80; see Pet. 33–34, 39. However, 3M argues that this disclosure does not address whether these faults are detected by *software* configured to perform this function as claimed. PO Resp. 39; Ex. 2003 ¶ 81.

We find that this feature is obvious over the prior art. HME offers proof that the HME Pro850 operates under software control. As discussed above, the Pro850 base station is adjusted using a multi-function knob and display window on the base station. Pet. 16–17; Ex. 1009, APP2824–2841. The Pro850 base station also can be configured by a PC running *PC850 software* over an RS-232 interface. Pet. 18, 27–29; Ex. 1009, APP2849–2850. This evidence indicates that the Pro850 base station uses software to configure the system to include identifying a fault condition in the system.

Claims 2–4, 8–13, 15–17, 19–20, 24–28, and 30–32

A preponderance of evidence supports HME’s contentions that the Pro850, Wireless 6000, and Telex Intercom Handbook teach or suggest the limitations of claims 2–4, 8–13, 15–17, 19–20, 24–28, and 30–32 as set forth in the Petition, and that it would have been obvious to combine the teachings of these references to render obvious those claims. *See* Pet. 16–22, 26–39.

The Wireless 6000 discloses a quick service restaurant intercom with a speaker and microphone mounted on a speaker post/menu board and hard-wired to the base station, and the volume levels emitted by the speaker and captured by the speaker post microphone can be adjusted at this “ordering point,” as recited in claims 9, 11–13, 18, 19, 26, and 28. Pet. 31–33, 35–37, 39; Ex. 1010, APP2862, 2880, 2873, 2885–88. The Wireless 6000 also discloses a vehicle alert parameter for the drive through lane that alerts a staff member when a customer enters a drive-thru lane by emitting an alert tone in a headset, as recited in claims 3 and 27. Pet. 30, 38–39; Ex. 1010, APP2878, 2881. The Wireless 6000 also discloses how to set this feature as an intercom system parameter. Ex. 1010, APP2880–APP2881.

The Pro850 discloses that a plurality of parameters adjusts volume levels of wireless communication of headsets and can be adjusted by the staff at the establishment and saved locally using the multi-function knob and base station display or a local PC, as recited in claims 2 and 4, 20, and 25. Pet. 29–30, 37–38; Ex. 1010, APP2815, 2835, 2838, 2840, 2849–50.

3M does not oppose HME’s contentions for these claims. *See* PO Resp. 17–40. Thus, we consider HME’s contentions of material fact to be admitted. 37 C.F.R. § 42.23(a). We also find that the Pro850, Wireless 6000, and Telex Intercom Handbook teach or suggest these features.

Conclusion

Having considered all of the evidence and contentions of the parties as set forth above and in the papers filed in this proceeding, we determine that HME has established by a preponderance of evidence that claims 1–32 are obvious over HME Pro850, Telex Intercom Handbook, and Wireless 6000 and the combination of their teachings is supported by rational underpinning.

2. Obviousness of Claims 1–5, 9–21, and 25–32 Over HME Pro850, Telex Intercom Handbook, and 3M Wireless

a. Overview of 3M Wireless (Ex. 1011)

3M Wireless Intercom System (“3M Wireless”) discloses a wireless intercom system that provides two-way communication for quick service drive-through restaurants and convenience stores. Ex. 1011, APP 2913. The system includes a base station, headset, and battery charger. *Id.* The base station contains logic, analog circuits, related controls and a transceiver to receive and transmit signals to and from headsets. *Id.* A vehicle alert signals when customers arrive at a menu sign. *Id.* at APP2914.

b. Analysis

HME contends that claims 1–5, 9–21, and 25–32 would have been obvious over HME Pro850, Telex Intercom Handbook, and 3M Wireless. Pet. 40. HME sets forth in the Petition with detailed claim charts and other contentions where each reference discloses each feature of claims 1–5, 9–21, and 25–32. *Id.* at 16–22, 40, 42–49 (also citing contentions at *id.* at 26–39). HME provides reasons for combining teachings of each reference to render obvious the subject matter of claims 1–5, 9–21, and 25–32. *Id.* at 41–42 (also citing contentions at 22–25).

Claims 1 and 18

Regarding claims 1 and 18, HME relies on the HME Pro850 and Telex Intercom Handbook to disclose the same features of claims 1 and 18 as in the first ground, and the 3M Wireless to disclose an intercom system for a drive-through, quick service restaurant, in much the same way that HME relied on the Wireless 6000 to disclose features of a quick service restaurant intercom in the first ground for claims 1 and 18. *Id.* at 40, 42–49.

HME asserts that a skilled artisan would have been motivated to combine the advanced features of the HME Pro850 intercom system and Telex Intercom Handbook with a known quick service restaurant intercom system like the 3M Wireless for the reasons asserted in the first ground, i.e., based on the express teachings of the Pro850, Telex Intercom Handbook, and Gosieski, and based on industry practice as explained by Mr. Hoeptner and confirmed by Gosieski. *Id.* at 41–42 (citing rationales in *id.* at 22–25). We find HME’s reasons to be supported by rational underpinning for the reasons discussed above for the first ground of unpatentability.

Regarding claims 1 and 18, 3M argues that the Pro850 and Telex Intercom Handbook fail to teach or suggest a base station connected to a wide area communication network or configured to permit remote review and adjustment for the same reasons as the first ground. PO Resp. 42–44. 3M argues that the 3M Wireless discloses a wireless intercom system for a drive-through, quick service restaurant and does not remedy the deficiencies of the other references because it has no provision for remote adjustment or external connections to a network. PO Resp. 41–44. Mr. Gafford makes similar assertions. Ex. 2003 ¶¶ 83–86. 3M argues against the combination for the same reasons as the first ground of unpatentability. *See id.* at 48–56.

3M's arguments are not persuasive for the same reasons discussed above for the first ground. We find that the Pro850, 3M Wireless, and Telex Intercom Handbook teach or suggest each limitation of claims 1 and 18.

Motivation to Combine

We agree with HME that a skilled artisan would have been motivated to combine advanced features of the Pro850 and Telex Intercom Handbook with the 3M Wireless for the same reasons asserted by HME for combining the teachings of the Pro850 and Telex Intercom Handbook with the Wireless 6000 in the first ground of unpatentability, as discussed above. Pet. 22–25, 41–43. HME's reasons are equally applicable to the Pro850, Telex Intercom Handbook, and 3M Wireless. Indeed, 3M combines its arguments against both combinations and makes no distinction between the 3M Wireless and Wireless 6000 in arguing against combining the Pro850 and Telex Intercom Handbook with either quick service restaurant intercom. PO Resp. 49–50.

We conclude that claims 1 and 18 would have been obvious in view of the Pro850, the Telex Intercom Handbook, and the Wireless 6000.

Claims 5, 21

3M argues that the Pro850, Telex Intercom Handbook, and 3M Wireless do not save a template of parameters to a remote location. PO Resp. 44. We find that the Pro850 and Telex Intercom Handbook render this feature obvious, as discussed in the first ground, and their teachings would have been combined with the 3M Wireless, which adjusts audio parameters (Ex. 1011, APP2915–APP2918), to save audio parameters for later recall to configure the intercom system. 3M does not address these teachings. We conclude that claims 5 and 21 would have been obvious over the Pro850, Telex Intercom Handbook, and the Wireless 6000.

Claims 14, 29

3M argues that the Pro850 and Telex Intercom Handbook do not teach software for determining a fault condition and 3M Wireless does not cure this deficiency. PO Resp. 44–45. We find that the Pro850 teaches such software, as discussed in the first ground, and this teaching would have been combinable with the 3M Wireless to provide similar alerts, where the 3M Wireless also provides vehicle alerts. Pet. 43 (citing Ex. 1011, APP2913–APP2914), 48. We thus conclude that claims 14 and 29 would have been obvious over the Pro850, Telex Intercom Handbook, and Wireless 6000.

Claims 2–4, 9–13, 15–17, 19, 20, 25–28, and 30–32

We agree with HME’s contentions that the Pro850, 3M Wireless, and Telex Intercom Handbook teach or suggest the limitations of claims 2–4, 9–13, 15–17, 19, 20, 25–28, and 30–32 as set forth in the Petition, and that it would have been obvious to combine the teachings of these references for the reasons discussed in the first ground, such as a combination of prior art elements according to known methods to yield predictable results. Pet. 40–49. Intercom parameters of the 3M Wireless could be set and saved locally and remotely in templates for later recall and use to configure the system.

The 3M Wireless discloses a quick service restaurant intercom system with a speaker and microphone mounted on a speaker post/menu board and hard-wired to the base station, and the volume levels emitted by the speaker and captured by the speaker post microphone can be adjusted at this “ordering point,” as recited in claims 9, 11–13, 18, 19, 26, and 28. Pet. 40, 46–49; Ex. 1011, APP2915, 2916, 2918, 2921. The 3M Wireless discloses a vehicle alert parameter for the drive through lane, as recited in claims 3 and 27. Pet. 40, 43, 48; Ex. 1011, APP2913–14.

The Pro850 discloses that a plurality of parameters adjusts volume levels of wireless communication of headsets and can be adjusted by the staff at the establishment and saved locally using the multi-function knob and base station display or a local PC, as recited in claims 2 and 4, 20, and 25. Pet. 29–30, 37–38; Ex. 1010, APP2815, 2835, 2838, 2840, 2849–50.

3M does not oppose HME’s contentions regarding these claims. See PO Resp. 17–40. Thus, we consider HME’s contentions of material fact to be admitted by 3M. See 37 C.F.R. § 42.23(a). We also find that the Pro850, 3M Wireless, and Telex Intercom Handbook teach the limitations of these claims. We conclude that claims 2–4, 9–13, 15–17, 19, 20, 25–28, and 30–32 would have been obvious over the combined teachings of the Pro850, Telex Intercom Handbook, and Wireless 6000.

Conclusion

Having considered all of the evidence and contentions of the parties as set forth above and in the papers filed in this proceeding, we determine that HME has established by a preponderance of evidence that claims 1–5, 9–21, and 25–32 would have been obvious over the HME Pro850, Telex Intercom Handbook, and the 3M Wireless, and the combination of these teachings is supported by rational underpinning.

3. Obviousness of Claims 6–8 and 22–24 Over HME Pro850, Telex Intercom Handbook, 3M Wireless, and Telex RadioCom

a. Overview of Telex RadioCom (Ex. 1013)

Telex RadioCom Operating Instructions (“Telex RadioCom”) teaches operating instructions for professional wireless intercom systems. Ex. 1013, APP3098. Telex RadioCom discloses resettable factory default settings that erase user-programmed frequencies. Ex. 1013, APP3137.

b. Analysis

HME contends that claims 6–8 and 22–24 would have been obvious over the HME Pro850, Telex Intercom Handbook, 3M Wireless, and Telex RadioCom. Pet. 49–52. HME provides claim charts with its contentions that HME Pro850, Telex Intercom Handbook, 3M Wireless, and Telex RadioCom disclose each element of claims 6–8 and 22–24. *Id.* at 51–52.

HME asserts that it would have been obvious to combine teachings of the HME Pro850, Telex Intercom Handbook, and 3M Wireless for the same reasons discussed above in the previous ground of unpatentability. Pet. 50. HME also asserts that it would have been obvious to designate a particular group of saved parameters of the Pro850 as factory default settings given the ability of the Pro850 to save templates of parameters as a file on the base station or a connected computer, and the Telex RadioCom’s teaching to save groups of parameters as factory default settings. *Id.* at 50–51. HME asserts that the combination merely combines prior art elements according to known methods to yield predictable results. *Id.*

3M argues that the Telex RadioCom’s factory default settings relate to communication frequencies of beltpacks, and none of the references disclose default templates for a volume level. PO Resp. 47; Ex. 2003 ¶¶ 90–92.

We agree with HME that the Pro850 teaches a group of parameters to include volume level being saved as a template for later recall and use, and the Telex RadioCom teaches that such parameters can be saved as a factory default. Pet. 50–52. A skilled artisan would have been motivated by these teachings to preset a template of parameters of the Pro850 as factory default settings to initialize or configure the Wireless 6000 or Pro850 as an obvious combination of prior art elements by known methods for predictable results.

The Pro850's displays "provide customized configuration settings for the base station and beltpacs" to "allow you to save your settings to a file for future access." Ex. 1009, APP. 2827. The Pro850 can save customized settings as a group and could do so as a factory default. HME's contentions are supported by a preponderance of evidence and rational underpinning.

Conclusion

Having considered all of the evidence and contentions of the parties in this proceeding, we determine that HME has established by a preponderance of evidence that claims 6–8 and 22–24 would have been obvious over the Pro850, Telex Intercom Handbook, 3M Wireless, and Telex RadioCom, and the proposed combination is supported by rational underpinning.

4. Additional Reasons for Non-Obviousness

a. Reliance on Gosieski (Ex. 1008)

3M argues that HME's reliance on Gosieski to teach the practices of intercom manufacturers and provide motivation to combine other references is improper because Gosieski is not used in a ground of unpatentability and relates to in-ear monitoring systems, rather than intercoms. PO Resp. 54–56.

HME's reliance on Gosieski as evidence of industry practice to use features of professional audio intercoms in other environments is proper and relevant as evidence of the understanding of skilled artisans of the industry practice of using features of professional audio intercom systems in other applications and environments that are less advanced and similar to quick service restaurant intercoms, as discussed *supra* in Section II.B.1.d. This evidence supports Mr. Hoeptner's testimony about industry practice at HME and HME's contentions that it would have been obvious to use features of the Pro850 in the Wireless 6000 and 3M Wireless quick service intercoms.

The motivation to combine teachings of references may come from common knowledge, *the prior art as a whole*, or the nature of the problem itself. *See Alcon Research*, 687 F.3d at 1368–69 (citing *DyStar Textilfarben GmbH*, 464 F.3d at 1361). Prior art such as Gosieski provides evidence of the understanding of skilled artisans in late 2004, close to the February 10, 2006 filing date of the '040 patent. Obviousness analysis allows and even requires consideration of evidence of common knowledge, common sense, and the knowledge that skilled artisans would bring to bear in reading prior art identified as producing obviousness. *See, e.g., Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015) (a prior art brochure must be considered even though it was not presented as a basis for obviousness if it could help document the knowledge that a skilled artisan would have brought to bear in reading the asserted prior art to determine the obviousness of the asserted combination); *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362–63 (Fed. Cir. 2013) (prior art references not cited in obviousness rejection were relevant evidence of the knowledge of skilled artisans at the relevant time to “explain why a skilled artisan would have been motivated to combine or modify the cited references to arrive at the claimed inventions.”).

HME cites Gosieski as evidence of industry practice of using intercom technologies in different intercom systems. Pet. 24, 41. HME asserts that Gosieski provides express teaching and motivation to use its features beyond the professional audio intercom market in other applications. *Id.* HME also asserts that Gosieski reflects industry practice described in Mr. Hoeptner’s Declaration that the same engineers design intercoms for a broad range of customers and port features from one intercom system to other intercom systems for different customers and applications. *Id.* (citing Ex. 1005 ¶ 9).

We also agree with HME that Gosieski's teachings are relevant to the '040 patent intercom system. Gosieski integrates wireless audio, visual, and IEM systems into a single communication system with a base station and many transceivers worn by personnel. Ex. 1008 ¶ 17. Control surface 20 disseminates incoming signals to channels designated by an engineer, and an audio engineer can blend incoming signals into individualized IEM signals for performers. *Id.* ¶ 35. Signals received by a base station can be blended to create an IEM mix that is routed back to the base station and transmitted to each IEM ear piece via the transceiver. *Id.* ¶ 51. Gosieski thus teaches an "intercom system" that allows performers and others to communicate with one another via headsets, microphones, and IEM ear pieces. *Id.* ¶ 35.

Gosieski teaches an IEM earpiece and integrated microphone headset that connect wirelessly to the system and can be used in walkie-talkie, digital hands-free headset for office, call center, manufacturing, construction, and hands-free VoIP telephone over a WAN/LAN or VoIP environments. *Id.* ¶ 79. These applications are similar to a quick service restaurant intercoms and hands-free headsets. *See* Ex. 1001, 5:21–44, Fig. 1. Gosieski confirms testimony of Mr. Hoeptner that intercom features are portable and used in different applications for different customers. Ex. 1005 ¶¶ 8, 9. Gosieski also teaches that remote review and adjustment, as taught by the Pro850 and Telex Intercom Handbook, is beneficial to allow audio engineers and others to control an intercom system remotely over a WAN or the Web, and to use preset templates of audio and intercom parameters to initialize and configure an intercom system. *See* Ex. 1008 ¶¶ 41–42, 67–72, 79–80.

HME Licensing Terms for Pro850

3M argues that licensing terms of the PC850 software that allow a PC to control the Pro850 base station teaches away from a combination with the Telex Intercom Handbook. PO Resp. 56. 3M argues that the license terms allow an individual to use one copy of PC850 software on a single computer. *Id.* 3M argues that use of the PC Anywhere software of the Telex Intercom Handbook causes the PC850 software to interact with multiple computers in violation of the licensing terms. *Id.* at 56–57.

We do not view the licensing terms of the PC850 as teaching away from its use on local and remote PCs with PC Anywhere software to allow remote review and adjustment of audio intercom parameters over a WAN. *See Fulton*, 391 F.3d at 1201; *DePuy Spine*, 567 F.3d at 1327.

3M cites no authority for its argument that a licensing restriction on the use of a party's intellectual property is evidence of non-obviousness. Pet. Reply 14. Even if licensing terms of the PC850 applied to a situation of the Pro850 and Telex Intercom Handbook, it is not clear that more than one copy of PC850 is being run. PC850 is installed only on the local PC. The remote PC uses that copy to control and configure the intercom remotely.

Even so, the problem could be alleviated by purchasing a second license of the software. We also are persuaded by HME's arguments and evidence that a software license for PC850 software allows the software to be installed on a network server or storage device and run on a user's other computers over an internal network. *Id.* In either case, we do not view the license terms as discouraging a skilled artisan from adding PC850 to a local PC that also runs PC Anywhere to allow remote review and adjustment of intercom system parameters. *See Orthopedic Equip.*, 702 F.2d at 1013.

III. CONCLUSION

Having considered all of the evidence and contentions of the parties as set forth above and in the papers filed in this proceeding, we determine that HME has demonstrated by a preponderance of evidence in this proceeding that claims 1–32 of the '040 patent are unpatentable.

IV. ORDER

Accordingly, it is

ORDERED that claims 1–32 of the '040 patent are unpatentable; and

FURTHER ORDERED that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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