

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

**Before the Honorable Cameron Elliot
Administrative Law Judge**

In the Matter of

**CERTAIN SMART CEILING FANS,
COMPONENTS THEREOF, AND
ASSOCIATED SYSTEMS AND
SOFTWARE THEREOF**

Investigation No. 337-TA-1374

**COMPLAINANT WANGS ALLIANCE CORPORATION
D/B/A WAC LIGHTING'S CLAIM CONSTRUCTION BRIEF**

TABLE OF CONTENTS

	PAGE
I. INTRODUCTION	1
II. THE ASSERTED PATENTS	1
III. BACKGROUND OF RELEVANT TECHNOLOGY	6
A. Wireless Communication Technology.....	7
B. DC Powering Technology.....	9
IV. A PERSON OF ORDINARY SKILL IN THE ART	9
V. LEGAL STANDARDS	10
VI. RESPONDENTS’ ATTEMPT TO IMPORT LIMITATIONS INTO THE CLAIMS SHOULD BE REJECTED.....	11
A. “Interface” Terms (’854 and ’345 Patents).....	11
1. Respondents’ Constructions Are Contrary to the Plain Meaning of the Claims	13
2. No Lexicography or Disclaimer Supports Respondents’ Construction.....	15
3. The Intrinsic Record Teaches Wireless Interfaces Sharing Components	16
4. Complainant intentionally broadened the claims during prosecution to not recite a “receiver” and only uses that language in dependent claims	17
B. “Frequency” Terms (’854 Patent).....	20
1. Respondents’ Constructions Are Contrary to the Plain Meaning of the Claims	20
2. No Lexicography or Disclaimer Supports Respondents’ Construction.....	22
3. Respondents’ Proposed Construction Is Technically Imprecise.....	24
C. “Indication” Terms (’854 and ’345 Patents).....	26
1. Limiting the Claims to Require an Indication that an Operation Has	

Been Performed Is Improper.....	27
2. Respondents’ Insertion of “Message” into the Claim Language Should Be Rejected.....	31
D. “a DC power supply configured to provide DC power to the DC fan motor” (’345 Patent, claim 1)	32
VII. CONCLUSION.....	35

TABLE OF AUTHORITIES

Cases	Page(s)
<i>Akzo Nobel Coatings, Inc. v. Dow Chem. Co.</i> , 811 F.3d 1334 (Fed. Cir. 2016).....	34
<i>Applied Med. Res. Corp. v. U.S. Surgical Corp.</i> , 448 F.3d 1324 (Fed. Cir. 2006).....	14
<i>Bd. of Regents of the Univ. of Tex. Sys. v. BENQ Am. Corp.</i> , 533 F.3d 1362 (Fed. Cir. 2008).....	22
<i>Blackboard, Inc. v. Desire2Learn, Inc.</i> , 574 F.3d 1371 (Fed. Cir. 2009).....	27
<i>CCS Fitness, Inc. v. Brunswick Corp.</i> , 288 F.3d 1359 (Fed. Cir. 2002).....	15, 22
<i>Certain Electronic Anti Theft Shopping Cart Wheels, Components Thereof And Systems Containing The Same</i> , 337-TA-1357, Order No. 11 (August 14, 2023)	21, 29
<i>Continental Circuits LLC v. Intel Corp.</i> , 915 F.3d 788 (Fed. Cir. 2019).....	10
<i>Epistar Corp. v. Int’l Trade Comm’n</i> , 566 F.3d 1321 (Fed. Cir. 2009).....	10, 15, 33
<i>Hoganas AB v. Dresser Indus., Inc.</i> , 9 F.3d 948 (Fed. Cir. 1994).....	11, 14
<i>IBSA Institut Biochimique, S.A. v. Teva Pharm. USA, Inc.</i> , 966 F.3d 1374 (Fed. Cir. 2020).....	28
<i>Intamin Ltd. v. Magnetar Techs, Corp.</i> , 483 F.3d 1328 (Fed. Cir. 2007).....	31
<i>Interactive Gift Express, Inc. v. Compuserve, Inc.</i> , 256 F.3d 1323 (Fed. Cir. 2001).....	10
<i>K-2 Corp. v. Salomon S.A.</i> , 191 F.3d 1356 (Fed. Cir. 1999).....	10
<i>Laryngeal Mask Co. v. Ambu A/S</i> , 618 F.3d 1367 (Fed. Cir. 2010).....	19, 31
<i>Merck & Co. v. Teva Pharm. USA, Inc.</i> , 395 F.3d 1364 (Fed. Cir. 2005).....	22

<i>NTP, Inc. v. Research in Motion, Ltd.</i> , 418 F.3d 1282 (Fed. Cir. 2005).....	14
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	10
<i>Resonate Inc. v. Alteon Websystems, Inc.</i> , 338 F.3d 1360 (Fed. Cir. 2003).....	11, 16, 24
<i>SimpleAir, Inc. v. Sony Ericsson Mobile Commc'ns AB</i> , 820 F.3d 419 (Fed. Cir. 2016).....	19, 24
<i>Thorner v. Sony Computer Entm't Am. LLC</i> , 669 F.3d 1362 (Fed. Cir. 2012).....	10, 15, 22
<i>Unwired Planet, LLC v. Apple Inc.</i> , 829 F.3d 1353 (Fed. Cir. 2016).....	10, 16, 24, 29

I. INTRODUCTION

The dispute here is a simple one: should Respondents be permitted to import new unrecited features into the asserted claims? As demonstrated below, none of Respondents' proposed constructions actually interpret or clarify any claim terms. Rather, Respondents seek to gratuitously insert additional language thereby limiting the scope of the claims to specific examples in the specification or adding entirely unsupported limitations. Respondents can point to no disclaimer nor lexicography supporting their aggressive constructions. Complainant Wangs Alliance Corporation d/b/a WAC Lighting respectfully requests that, consistent with the governing case law, the asserted claims be construed according to the language of the claims which have an unambiguous plain and ordinary meaning.

II. THE ASSERTED PATENTS

At issue here are U.S. Patent Nos. 11,028,854 ("the '854 Patent") (Ex. 1) and 11,598,345 ("the '345 Patent") (Ex. 2) (collectively, "the Asserted Patents").¹ The Asserted Patents, which share the same specification and figures, disclose and claim "smart" fans that can be controlled through multiple control mechanisms that also report their status to a remote server. By utilizing innovative configuration of hardware and functional solutions, the patents provide improved and more functional smart fans.

Certain embodiments disclose that the smart fan may be controlled via several alternative means including: local Radio Frequency (RF) devices (such as a wall controller), a local WiFi device such as a phone, or through a server. *See* Ex. 1 at 2:1-5. Some examples of such control include setting or changing "fan status and speed and/or fan light on/off status and intensity." *Id.*

¹ U.S. Patent No. 10,488,897 ("the '897 patent") is also asserted in this Investigation but, as none of its terms are disputed at the *Markman* stage, "Asserted Patents" is limited herein to the '854 and '345 Patents.

In embodiments where “communications can be sent from a WiFi capable device, e.g., a cell phone, to control the fan device and its various functions,” *id.* at 2:8-10, “WiFi control is possible without the need for a connection to an external network or server.” *Id.* at 2:10-14. This is because “WiFi control” can be accomplished “via WiFi router in the home, [and] the control signals [from the phone] normally do not traverse the Internet or another external network.” *Id.*

Further, the disclosed smart fan is capable of “report[ing] its state and/or changes in state to a server, e.g., located outside the customer premises.” *Id.* at 2:34-39. This functionality enables the off-premises server to manage the status of the smart fan. *Id.* at 11:55-12:7.

Commands to the fan may also be sent from an off-premises server. *Id.* at 3:5-24; 19:10-55.

These commands can be initiated by a user logging into the server or alternatively by a cellular device off-premises sending a command to the server, which is subsequently relayed by the server to the smart fan over the Internet. *Id.* at 3:5-24; 19:10-55.

Figure 1, shown below, discloses one embodiment in which one or more fan devices 110, 112 communicate over WiFi with a wireless terminal 120 such as a smartphone. *Id.* 5:30-44.

at (60), Ex. 2 at (60). The application that led to the '854 Patent was filed on January 14, 2018 and issued June 8, 2021. Ex. 1. The application that led to the '345 Patent, which is a continuation of the '854 Patent, was filed on June 7, 2021 and issued on March 7, 2023. Ex. 2.

Independent claim 1 of the '854 Patent is shown below.

1. A system comprising:

- a fan motor;
 - a fan motor control circuit;
 - a processor in electrical communication with the fan motor control circuit;
 - a radio frequency interface configured to receive, at a first frequency, a signal; and
 - a WiFi interface configured to communicate at a second frequency that is different from the first frequency;
- wherein;
- the fan motor control circuit is configured to cause the fan motor to perform an operation in response to the signal; and
 - the processor is configured to transmit, via the WiFi interface, to a server, an indication corresponding to the operation.

Among other things, the claim recites a smart fan device having a radio frequency interface for receiving signals. The signals may cause the fan motor to perform operations (*e.g.*, speed up, turn off). The claimed system is also configured to use a WiFi interface to send an indication corresponding to the operation to a server. The WiFi interface communicates on a different frequency than the RF interface. As discussed below, claim 1 of the '854 Patent does not restrict the type of hardware for the RF and WiFi interfaces and does not limit the range of available frequencies used other than that they be different. Further, claim 1 does not recite specific limitations on the content of the indication transmitted to the server.

Claim 1 of the '345 Patent further recites certain communication and structural limitations.

1. A fan device comprising:

- a DC fan motor;
- a fan motor control circuit;
- a processor in electrical communication with the fan motor control circuit;
- a first wireless interface configured to receive from a user controller a first signal corresponding to a first user command conforming to a first communications protocol;
- and
- a second wireless interface configured to receive from a user controller a second signal corresponding to a second user command and configured to receive from a server a third signal corresponding to a third user command, the second signal and the third signal conforming to a second communications protocol that is different from the first communications protocol; wherein:

- the fan motor control circuit is configured to cause the fan motor to perform a first operation in response to the first signal, a second operation in response to the second signal and a third operation in response to the third signal; and
- the processor is configured to transmit, via the second wireless interface, to a server, a first indication corresponding to the first operation, a second indication corresponding to the second operation and a third indication corresponding to the third operation;

further comprising:

- a mounting base configured to be mounted to a ceiling; and
- an AC power interface configured to provide AC filtered power to a DC power supply configured to provide DC power to the DC fan motor;

wherein:

- the processor is disposed in the mounting base;
- the first wireless interface is disposed in the mounting base;
- the second wireless interface is disposed in the mounting base;
- the AC power interface and the DC power supply are disposed in the mounting base; and
- each of the AC power interface and the DC power supply are connected to a full bridge rectifier, and the full bridge rectifier is disposed in the mounting

base.

This claim recites a smart fan device for receiving signals via first and second wireless interfaces. The first wireless interface accepts a first signal from a user controller (*e.g.*, wall controller, remote) that conforms to a first communication protocol that operates on the RF spectrum (such as a Manchester Encoded protocol or Bluetooth), and corresponds to a first user command (*e.g.* fan on, fan speed, *etc.*). Ex. 2 at 11:29-38. The second wireless interface accepts a second signal from a user controller (*e.g.*, cell phone) that conforms to a second communication protocol (*e.g.*, WiFi, which also operates on the RF spectrum) and corresponds to a second user command. *Id.* at 2:6-18. The second wireless interface can also receive commands from a server that conforms to the second wireless communication protocol and corresponds to a third user command. *Id.* at 3:5-24; 19:10-55.

The claimed first, second, and third signals cause the fan motor to perform first, second, and third operations (*e.g.*, speed up, turn on, and turn off). The claimed system is also configured to use the second wireless interface to send first, second, and third indications, corresponding respectively to the first, second, and third operations, to a server. As discussed below, claim 1 of the '345 Patent does not restrict the type of hardware for the two wireless interfaces and does not restrict the contents of the indications transmitted to the server. On the other hand, claim 1 does recite certain components in a mounting base and utilizing certain AC to DC conversion components to power its DC fan motor.

III. BACKGROUND OF RELEVANT TECHNOLOGY

The Asserted Patents relate to methods of powering, communicating with and controlling smart fan technology. While the Asserted Patents disclose and claim additional technology,

Complainant herein provides a brief background relating to issues that are under dispute.²

A. Wireless Communication Technology

Certain terms at issue are directed to wireless communication technology and one or more interfaces for communicating wirelessly. Typically, wireless communication is accomplished by modulating (*i.e.*, structuring) electromagnetic waves that are transmitted between two devices. *See. e.g.*, Ex. 6 ¶¶ 48-50. Much of the wireless transmission at issue is within the so-called radio frequency (RF) spectrum, a range of frequencies typically between 3Hz to 3000GHz. *Id.* ¶ 49.

Radio frequency signals are transmitted by a transmitter and received by a receiver. *Id.* ¶ 48. In the case of digital information, an RF signal is typically a sequence of bits, *i.e.*, a sequence of 0s and 1s. *Id.* Transmitting that information by radio waves requires a “carrier” wave which has a frequency. *Id.* The frequency is the number of oscillations of the wave per second, which can be expressed in Hertz. *Id.* Thus, for example, a carrier at a frequency $f = 900$ MHz is a wave that has 900 million cycles per second. *Id.* The way that digital information is transmitted is that some attribute of the 900 MHz waveform is changed in one of two ways, each representing the value of a bit being 0 or 1. *Id.* The process of modifying some attribute of the waveform according to a bit being a 0 or a 1 is called “modulation.” *Id.* ¶ 50.

When a signal is received, it is first received by an antenna, which converts the incoming radio frequency into electrical signals. *Id.* ¶¶ 49, 52-54. The electrical signals are then subject to modification by various analog circuit components, which among other things, amplify the incoming signal, filter the signal for noise and distortions, and extract the 0s and 1s for conversion into information. *Id.* ¶¶ 52-58.

² The description of technology in this section is provided as of the priority date of the Asserted Patents.

Various communication protocols and systems, such as Bluetooth, WiFi, and cellular communications, use RF communication as a basis for sending and receiving data. *Id.* ¶¶ 56, 70, 71, 80.

“WiFi” refers to communication as set forth in the IEEE³ 802.11 standards for wireless communication, which enables computers, smartphones, and other intelligent devices to send and receive data wirelessly. *Id.* ¶ 23, 24. IEEE 802.11 utilizes one or more frequencies in the radio frequency spectrum to communicate. *Id.* ¶¶ 47, 114. WiFi transmissions are constructed by performing multiple encoding steps, each of which builds a new “layer” into the transmission. Ex. 20. When the transmitted communication is received, it is decoded in the reverse order to obtain the transmitted data. *Id.*

The transmission and receipt of RF communications generally and WiFi specifically may be performed by various combinations of hardware and software. Exs. 8, 9, 11; Ex. 6 ¶¶ 52-58, 75-87. It is possible for multiple communications protocols to share components such as antenna or other reception hardware while communicating across different frequencies or using different communication protocols. *Id.* ¶¶ 75-87.

Certain wireless communication protocols may use a so-called dedicated frequency band. *Id.* ¶¶ 61-71. A frequency band is an arbitrary grouping of frequencies or smaller frequency ranges that are in close proximity to one another. *Id.* ¶¶ 65-71. For example, certain WiFi devices communicate in ranges of frequencies between 2.4–2.4835 GHz. *Id.* ¶¶ 101-103. Certain devices using other communication protocols (*e.g.*, Bluetooth) communicate in the same band of frequencies. *Id.* ¶ 79; Ex. 11 at [0005].

³ IEEE stands for Institute of Electrical and Electronics Engineers. Among other things, the IEEE acts as a standards-setting body for the field of electrical engineering.

B. DC Powering Technology

Also at issue in the present dispute are circuits for powering fans, including Direct Current (DC) systems.

In most American homes, AC wall power is the well-known 120 Volts (V) at 60 Hz. Ex. 5 ¶ 32. An AC signal is one that alternates positive and negative in polarity relative to a reference. *Id.* Thus, the AC wall power has an AC voltage where the line voltage alternates positive and negative relative to a neutral line, and the neutral line is tied to earth ground at a common point in a building such as at the power panel. *Id.*

In a DC powered device designed to be connected to AC wall power, there is an AC side of the circuitry and a DC side to the circuitry. On the AC side, the AC power input may be filtered by AC filtering circuitry to protect the downstream circuitry, such as the DC converter and the DC fan motor, and to avoid causing interference to other circuits that may be upstream on the AC power grid. *Id.* The output of the AC filtering circuitry is also an AC signal. *Id.* On the DC side, a DC converter provides a regulated DC power output. *Id.* ¶ 33. This regulated DC power output may be used to power one or more DC devices or components, such as a smart ceiling fan using a DC motor. *Id.*

IV. A PERSON OF ORDINARY SKILL IN THE ART

Complainant contends that a person of ordinary skill in the art would have a Bachelor's degree in electrical or computer engineering, or a related field, and two to three years of experience with the design or implementation of wireless communication systems, control circuits, or power electronics. Complainant also contends that a higher level of education or skill can make up for less experience, and vice versa.

However, Complainant contends that its proposed constructions are correct even under

Respondents' proposed skill level.⁴

V. LEGAL STANDARDS

The words of a patent claim are generally given their “ordinary and customary meaning,” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005). “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012). As a result, when a claim term is “clear on its face,” the claim construction process is limited to “determining if a deviation from the clear language of the claims is specified” by either disavowal or lexicography. *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331-32 (Fed. Cir. 2001); *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1363 (Fed. Cir. 1999).

The standard for deviating from the plain and ordinary meaning is “exacting” and requires “a clear and unmistakable disclaimer.” *Thorner* 669 F.3d 1366-67; *see also Epistar Corp. v. Int’l Trade Comm’n*, 566 F.3d 1321, 1334 (Fed. Cir. 2009) (requiring “expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope” to deviate from the ordinary meaning) (citation omitted). As the Federal Circuit has explained, “[w]e do not read limitations from the specification into claims; we do not redefine words. Only the patentee can do that.” *Thorner*, 669 F.3d at 1366; *see also Continental Circuits LLC v. Intel Corp.*, 915 F.3d 788, 797 (Fed. Cir. 2019); *Unwired Planet, LLC v. Apple Inc.*, 829 F.3d 1353, 1359 (Fed. Cir.

⁴ Respondents' proposed level of skill in their invalidity contentions differs slightly in that they contend that “A person of ordinary skill (POSA) at the time of the purported inventions of the ’854, ’345, and ’897 patents would have had a Bachelor’s degree in electrical or computer engineering, or a related field, and two to three years of experience with the design or implementation of wireless communication systems, control circuits, *and* power electronics. A higher level of education or skill can make up for less experience, and vice versa.” Ex. 18C at 4 (emphasis added).

2016) (“[W]e have repeatedly held that it is ‘not enough that the only embodiments, or all of the embodiments, contain a particular limitation’ to limit claims beyond their plain meaning.”).

“[T]he written description is not a substitute for, nor can it be used to rewrite, the chosen claim language.” *Resonate Inc. v. Alteon Websystems, Inc.*, 338 F.3d 1360, 1364 (Fed. Cir. 2003). “For example, a particular embodiment appearing in the written description may not be read into the claim when the claim language is broader than the embodiment.” *Id.* at 1364-65 (citing *Electro Med. Sys. S.A. v. Cooper Life Scis. Inc.*, 34 F.3d 1048 (Fed. Cir. 1994)).

“It is improper for a court to add ‘extraneous’ limitations to a claim, that is, limitations added ‘wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim.’” *See Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 950 (Fed. Cir. 1994) (citation omitted).

VI. RESPONDENTS’ ATTEMPT TO IMPORT LIMITATIONS INTO THE CLAIMS SHOULD BE REJECTED

A. “Interface” Terms⁵ (’854 and ’345 Patents)

Disputed Term	Complainant’s Proposed Construction	Respondents’ Proposed Construction
“a radio frequency interface configured to receive” (’854 Patent, claim 1)	Plain and ordinary meaning, which is: radio frequency interface that is configured to receive	Plain and ordinary meaning, ⁶ which is: a radio frequency interface adapted to receive using a RF receiver ”

⁵ All of the terms selected for presentation to the ALJ in this claim construction proceeding were selected by Respondents. Respondents selected ten discrete terms that they then grouped into four categories. Whether that complies with the ALJ’s Ground Rules, Complainant will leave to the ALJ to decide. Nevertheless, because seven of the ten disputed terms (as grouped by Respondents) appear in groups that contain terms from both patents, the present brief does not organize the terms by patent.

⁶ Respondents have taken the absurd position that their proposed construction for all the terms briefed here reflect the plain and ordinary meaning of the terms. *See* Ex. 17.

Disputed Term	Complainant's Proposed Construction	Respondents' Proposed Construction
"a WiFi interface configured to communicate" ('854 Patent, claim 1)	Plain and ordinary meaning, which is: a WiFi interface that is configured to communicate	Plain and ordinary meaning, which is: a WiFi interface adapted to communicate using a WiFi transmitter and WiFi receiver, separate from the RF receiver
"a first wireless interface. configured to receive" ('345 patent, claim 1)	Plain and ordinary meaning, which is: a first wireless interface that is configured to receive	Plain and ordinary meaning, which is: a first wireless interface adapted to receive using a first receiver
"a second wireless interface configured to receive" ('345 patent, claim 1)	Plain and ordinary meaning, which is: a second wireless interface that is configured to receive	Plain and ordinary meaning, which is: a second wireless interface adapted to receive using a second receiver, separate from the first receiver

The first dispute among the parties relates to four terms across the Asserted Patents. The claims of each Asserted Patent recite multiple "interfaces" for communicating. In the case of the '854 Patent, the claims recite a "WiFi interface" and "RF Interface"; in the case of the '345 Patent the claims recite "first" and "second" "wireless interfaces." The listing above shows the parties' proposed constructions. As evident from the table above, the parties do not dispute the meaning of any words in these claim terms.⁷ Marked in red are additional words that

Respondents seek to tack onto the claims, effectively revising the claims without even purporting

⁷ Because there were no substantive disputes about the meaning of the words in these terms, beyond Respondents' naked addition of unrecited limitations, Complainant did not further articulate the meaning of the words in its construction. In any event, their meaning is clear on their face.

to interpret the claim language.⁸

The dispute is only whether the plain language and express scope of the terms should be preserved (Complainant's position), or whether, as illustrated in bold and red in the table above, multiple new unsupported "receiver" limitations should be appended onto the claim language to reduce the as-issued scope of the claims (Respondents' position).

1. Respondents' Constructions Are Contrary to the Plain Meaning of the Claims

The plain language of the claims does not require that any of the claimed interfaces have its own discrete receiver.⁹ Indeed, there is no specific requirement for a receiver at all. The "RF interface" and "WiFi interface" in the '854 Patent, and "first wireless interface" and "second wireless interface" in the '345 Patent could each share a receiver and/or be integrated together into a single physical component. Ex. 6 ¶¶ 76-87. However, Respondents seek to rewrite this limitation to require that: (a) both components have a receiver (and the WiFi interface also have a transmitter); and (b) the receivers be physically separate.

As an initial matter, Respondents' construction is a textbook case of adding "extraneous" limitations to the claims. The claims recite a wireless interface and Respondents propose rewriting that claim to include a wireless interface with a receiver that is separate from the receiver in another wireless interface. No words are interpreted – rather these constructions add

⁸ Additionally, in various instances Respondents seek to replace "configured to" with "adapted to" presumably to create the cosmetic appearance that they are not merely adding words to the claim. To the extent that "adapted to" has any separate meaning from "configured to," it should be rejected as limiting the scope of the claims and introducing ambiguity. *See, e.g.*, MPEP 2111.04 (Ex. 19).

⁹ A receiver is "the part of a telecommunications system that converts transmitted waves into a desired form of output." *See e.g.* Ex. 16, Oxford Dictionary of Electronics and Electrical Engineering, 2018; *see also* Ex. 6 ¶ 47.

limitations “wholly apart from any need to interpret.” *See Hogan AB*, 9 F.3d at 950. This is not permitted. *Id.*

There is nothing in the plain language that supports Respondents’ incorporation of their extraneous “receiver” and “separate receiver” limitations. Indeed, the language of the independent claims of the Asserted Patents is consistent with the absence of specific hardware limitations from the “interface” terms in the independent claims. While some specific electronic components are called out in the independent claims (*e.g.*, “full bridge rectifier,” ’345 Patent, 41:50), Complainant chose not to claim any specific components (*e.g.*, “receiver,” “transmitter,” “antenna”) of either of the wireless interfaces, keeping the scope of the “interface” terms not limited to specific distributions of hardware.

The insertion of discrete “receiver” components for each “interface” is also not supported from either a legal or technical standpoint. As noted above, the claims do not recite receivers at all, but *even if* the claims *expressly* recited that each component had a receiver, this would not support Respondents’ construction which *further* requires that the receivers be wholly separate. Even in cases where specific separate components are recited (not present here), the Federal Circuit has repeatedly rejected attempts to require physically separate components merely because they are recited in separate claim terms. *See Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006) (“The use of two terms in a claim requires that they connote different meanings, *not* that they necessarily refer to *two different structures.*”) (emphases added); *see also NTP, Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1309 (Fed. Cir. 2005) (rejecting “separate and distinct” construction of claimed receiver and destination processor).

From a technical standpoint, persons of ordinary skill in the art at the time of filing of the Asserted Patents understood that multiple wireless interfaces and protocols could share overlapping hardware and/or software for reception or even utilize a single integrated piece of hardware. Ex. 6 ¶¶ 76-87. A wireless interface may use a discrete receiver or, alternatively, a wireless interface (*e.g.*, Bluetooth) can share part or all of a receiver with another interface (*e.g.*, WiFi). *Id.* For example, a single integrated circuit chip, that includes one integrated antenna, may enable communications on multiple frequencies. *Id.* ¶¶ 83, 90-91. Such single-chip wireless modules were well known to a POSA as of the priority date of the patents and clearly within the scope of the claims. *Id.* ¶¶ 76-87.

2. No Lexicography or Disclaimer Supports Respondents' Construction

The only acceptable way under the law to deviate from the plain and ordinary meaning of the claims is through showing a clear disclaimer or a patentee's express alternative definition in the intrinsic record. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002) (citations omitted) (there is a "heavy presumption that a claim term carries its ordinary and customary meaning"). The standard for disclaimer is "exacting" and requires "a clear and unmistakable disclaimer." *Thorner*, 669 F.3d at 1365, 1366; *see also Epistar* 566 F.3d at 1334 (requiring "expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope" to deviate from the ordinary meaning) (citation omitted). This "exacting" standard cannot be met here.

As an initial matter, Respondents have effectively conceded that their proposed constructions do not rely on disclaimer or lexicography because they insist their constructions reflect the plain and ordinary meaning of the claims. Ex. 17; Ground Rule 6.

In any event, no such disavowal or lexicography is present here. While it is true that the embodiments of the Asserted Patents disclose interfaces having receivers, there is no disclaimer

or definition of terms in the specification. The specification does disclose in Figure 3 a fan system with an RF interface (element 314) and a WiFi interface (312), each with its own receiver (360 and 356, respectively). *See* Ex. 1, Fig. 3, 8:20-11:3. This is, however, not the limit of what is claimed. The specification expressly identifies the system depicted in Figure 3 as an “exemplary embodiment.” *See id.* at 4:40-44; 8:20-21 (“FIG. 3 is a drawing of an exemplary fan device 300 . . . in accordance with an exemplary embodiment.”). The mere fact that certain embodiments utilize interfaces having discrete receivers cannot limit the claims. *See Resonate Inc.*, 338 F.3d at 1364-5 (“a particular embodiment appearing in the written description may not be read into the claim when the claim language is broader than the embodiment.”); *see also Unwired Planet*, 829 F.3d at 1359 (“[W]e have repeatedly held that it is ‘not enough that the only embodiments, or all of the embodiments, contain a particular limitation’ to limit claims beyond their plain meaning.”).

3. The Intrinsic Record Teaches Wireless Interfaces Sharing Components

The specification makes clear that two wireless interfaces could be integrated together. In particular, the specification states:

In some embodiments, the RF and WiFi interfaces while both being wireless interfaces are different interfaces and use different frequency bands and different communications protocols.

’854 Patent at 11:29-32 (emphasis added); *see also* Ex. 1 at 3:37-40 (describing using an RF receiver and WiFi interface in “some embodiments.”). Since, “*in some embodiments*,” the two wireless interfaces can be separate, by implication, in *other* embodiments (*e.g.*, a system using a single-chip wireless module for both interfaces) they could be integrated, sharing components like a receiver. Ex. 6 ¶ 89.

Further, the Asserted Patents in several instances make clear that they are not limited to discrete interfaces having separate receivers. Indeed, they specifically state that “elements described herein are implemented using one or more components to perform the steps corresponding to one or more methods, for example...*transmission* steps” and that “[s]uch components may be implemented using software, hardware or a combination of software and hardware.” Ex. 1 at 41:48-56 (emphasis added). Accordingly, the specification allows for the possibility that discrete hardware used for communication may be replaced by software functions or a *combination* of hardware.

Indeed, the specification discloses embodiments where hardware for the wireless interfaces can be combined. For example, it states that “[i]n some embodiments, the same antenna is used for both the WiFi interface 312 and the RF interface 314,” a limitation that is also recited in claim 14 of the ’345 Patent. at 9:7-9; claim 14. A person of ordinary skill in the art would understand that components sharing an antenna could also use a single receiver. Ex. 6 ¶¶ 90-91.

In sum, the specification contemplates embodiments where interfaces share transmission components.

4. Complainant intentionally broadened the claims during prosecution to not recite a “receiver” and only uses that language in dependent claims

While Respondents’ proposed rewriting of the claims is clearly foreclosed by the above precedent and evidence, it is also further contradicted by the prosecution history.

When Complainant first filed claims for the ’854 Patent (the parent of the ’345 Patent), it sought narrower claims, which recited a receiver, and later purposefully broadened them during prosecution. The originally filed claims stated:

'854 Patent Original Claim 1

1. A control method comprising:
receiving, at a fan device including a radio frequency signal receiver and a WiFi interface, a first radio frequency (RF) control signal from a control unit, said fan device and said control unit being located at a customer premises;
implementing, at the fan device, an operation in response to a first command communicated by the first RF control signal; and
operating the fan device to communicate to a server located outside the customer premises, via the WiFi interface, information indicating the operation implemented in response to the first command.

'854 Patent Original Claim 10

10. A system comprising:
a fan device comprising:
a fan motor;
a radio frequency (RF) signal receiver configured to receive radio frequency (RF) control signals from a control unit, said fan device and said control unit being located at a customer premises;
a WiFi interface;
a fan motor control circuit configured to control the fan motor in response to a received first radio frequency control signal, said first radio frequency control signal communicating a first command; and
a first processor configured to communicate to a server, located outside the customer premises, via the WiFi interface, information indicating an operation implemented in response to the first command.

Ex. 3 at WAC00000083-84. Similarly, when Complainant filed the application for the '345 Patent, it filed these same claims and an amendment canceling them and replacing them with

new independent claims without the “receiver” limitation. Ex. 4 at WAC00001803, WAC00001868.

From the outset, Complainant distinguished the scope of the terms “receiver” and “interface” by reciting both an “(RF) Signal Receiver” and a “WiFi Interface” indicating that these terms had distinct meanings. *See, e.g., SimpleAir, Inc. v. Sony Ericsson Mobile Commc’ns AB*, 820 F.3d 419 at 431 (Fed. Cir. 2016) (distinct terms are presumed to have distinct meanings).

Furthermore, during prosecution, the applicant amended the claims to change “(RF) signal receiver” to “(RF) interface” (in the ’854 Patent). Ex.3 at WAC00000341. Similarly, Complainant removed the original receiver language in its continuation application that issued as the ’345 Patent, instead obtaining independent claims that recited a “first wireless interface” (in the ’345 Patent). Ex. 2, ’345 Patent, claim 1. A person of ordinary skill would understand reading the prosecution history that the claimed “interface” does not require a “receiver” based on the removal of this limitation.¹⁰ Ex. 6 ¶¶ 92-94.

Federal Circuit precedent holds that re-inserting limitations removed by broadening amendments during prosecution “cannot be permitted.” *See Laryngeal Mask Co. v. Ambu A/S*, 618 F.3d 1367, 1372-73 (Fed. Cir. 2010) (citing *Kistler Instrumente AG v. U.S.*, 628 F.2d 1303, 1308 (Ct. Cl. 1980).

Accordingly, Respondents’ proposed rewriting of the claims should be rejected because it: (A) contradicts the plain language of the claims; (B) is not supported by the specification; and (C) contradicts the prosecution history of the claims.

¹⁰ When Complainant wanted to limit the scope of the claims with a “receiver” limitation, in a dependent claim, it did so. *See* Ex. 1, claim 5 (“a **receiver** configured to receive a WiFi control signal”) (emphasis added).

B. “Frequency” Terms (’854 Patent)

Disputed Term	Complainant’s Proposed Construction	Respondents’ Proposed Construction
“first frequency” (’854 Patent, claim 1)	Plain and ordinary meaning, which is: first frequency	Plain and ordinary meaning, which is: RF frequency in a different frequency band than the frequency band used for WiFi signals
“second frequency that is different from the first frequency” (’854 Patent, claim 1)	Plain and ordinary meaning, which is: second frequency different from the first frequency	Plain and ordinary meaning, which is: WiFi frequency in a different frequency band than the frequency band used for RF signals

The claims of the ’854 Patent recite a “first frequency” and “second frequency that is different from the first frequency.” As with the “interface” terms, Respondents seek to rewrite the claims to add the requirement that the two claimed frequencies be in different “frequency bands” rather than just different frequencies. The plain and ordinary meaning of these terms does not say anything about frequency bands much less limit the two frequencies to only frequencies that are in “different frequency band[s].” A “frequency” is not a “frequency band” and Respondents’ attempts to change the scope of the claims should be rejected.

1. Respondents’ Constructions Are Contrary to the Plain Meaning of the Claims

The plain and ordinary meaning of the claims is that the second frequency is a different frequency than the first frequency. As with the “interface” terms, Respondents are not trying to construe the term “frequency,” as they use it in their construction. Respondents are not unpacking anything in these “frequency” terms, but merely – improperly – changing the terms to mean something qualitatively different.

Requiring that the frequencies be in different frequency bands adds a new limitation to the claims. A “frequency band” is a “particular range of *frequencies* that forms part of a larger continuous series of frequencies.” Ex. 16 at 658. A frequency band can have many frequencies within it that are different frequencies yet in the same frequency band. Ex. 6, ¶¶ 99-107. Indeed, a frequency band usually has numerous channels (subranges of frequencies) that are still within the same band. *Id.*; see also *Certain Electronic Anti Theft Shopping Cart Wheels, Components Thereof And Systems Containing The Same*, 337-TA-1357, Order No. 11 at 18 (August 14, 2023) (construing a “2.4 GHz frequency **band**” as “**frequencies** in the range of 2.4 GHz to 2.5 GHz”¹¹) (emphasis added).

For example, FM radio operates on the RF spectrum. Ex. 6 ¶ 100. FM operates on many different frequencies, each capable of carrying an entirely different radio station broadcast, but all those frequencies are in one, FM, frequency band. Ex. 6 ¶¶ 61, 100. Under Respondents’ proposed construction, a person changing to a new station on their FM radio, would not actually be changing to a frequency “different than the first frequency” because they would not be changing the frequency band. *Id.* Applying Respondents’ position, every FM radio station would be on the same frequency because they are all within the FM frequency band.

The intrinsic evidence supports the plain meaning of the claims, in which frequencies can be different but still be in the same frequency band. For example, claim 2 of the ’345 Patent recites frequency bands and frequencies and differentiates them.

¹¹ That is, multiple frequency channels between 2.4 GHz to 2.5 GHz. See Ex. 6 ¶ 102.

2. The fan device of claim 1 wherein:
the first signal and the second signal have, respectively, a
first frequency and a second frequency; and
the first frequency and the second frequency are in
different frequency bands.

Claim 2 makes clear that Complainant knew the difference between claiming just a “frequency” and claiming a “frequency band.” As shown above, claim 2 recites that the signals use different frequencies and further *limits* itself by establishing that the frequencies are in different bands. Under Respondents’ proposed construction, half of this claim would be redundant. *See Bd. of Regents of the Univ. of Tex. Sys. v. BENQ Am. Corp.*, 533 F.3d 1362, 1371 (Fed. Cir. 2008) (“Different claim terms are presumed to have different meanings.”); *see also Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”). Claim 2 also shows that when Complainant wanted to claim frequencies in different frequency bands it did so expressly.

Thus, there can be no dispute that the plain and ordinary meaning of the claims does not require different frequency bands. There is no ambiguity that frequency bands are *groups* of frequencies, not frequencies themselves and different *frequencies* may still be in the same *frequency band*. Respondents merely seek to rewrite the claims.

2. No Lexicography or Disclaimer Supports Respondents’ Construction

Given that a “frequency” is not the same as a “frequency band,” it once again falls to Respondents to overcome the “heavy presumption” of *CCS Fitness* by demonstrating that the “patentee set[] out a definition and act[ed] as his own lexicographer” or engaged in a “a clear and unmistakable disclaimer.” *CCS Fitness*, 288 F.3d at 1366; *Thorner*, 669 F.3d at 1365-6.

Respondents can point to no such definition or disclaimer because none exists.

While the specification does describe separate frequency bands in exemplary embodiments, the claims are not limited to such embodiments. Indeed, the specification makes clear that the use of different frequency bands is optional, noting that “[i]n *various embodiments*, the WiFi interface 312 and the RF interface 314 are configured to use different frequency bands, e.g., different non-overlapping frequency bands.” Ex. 1 at 9:3-9 (emphasis added). The specification even contemplates operation with frequency bands that are overlapping. *see id.* (“e.g., only in “various embodiments” using “different *non-overlapping* frequency bands”) (emphasis added); *see also id.* at 11:29-31 (limiting different frequency bands to “*some embodiments*.”) (emphasis added).

Further, the specification distinguishes clearly between frequencies and frequency bands:

In various embodiments, the RF control signals which are sent by control unit 202 to a fan device use an *RF frequency* which is not used for WiFi signals. In some embodiments, the RF control signals which are sent by control unit 202 to a fan device *use a different frequency band* and a different protocol than the WiFi signals which are received by the fan device.

Id. at 7:25-30. The first sentence in the paragraph above addresses individually different frequencies. *See also id.*, 35:21-25 (“RF control signal is sent using *an RF frequency* which is not used for WiFi signals”).¹² And the second sentence again limits the use of different frequency bands to only “some embodiments,” where the two wireless interfaces operate on two different frequency bands.

The consistent qualification for only “some [or various] embodiments,” and the use of

¹² The original claims submitted with the application resulting in the ’854 Patent also included such language. *See* Ex. 3 at WAC00000083 (“3. The method of claim 1, wherein said RF control signal is sent using *an RF frequency* which is not used for WiFi signals.”) (emphasis added).

different “frequency” and “frequency band” terms emphasizes that the claims encompass both types of systems. Ex. 6 ¶¶ 108-110. As with the “interface” terms, Respondents’ attempts to limit the claims to specific examples from the specification should be rejected. *See Resonate Inc.*, 338 F.3d at 1364; *Unwired Planet*, 829 F.3d at 1359.

If anything, the use of the term “different frequency band” in certain embodiments and a different “frequency” in claim 1 support the notion that a frequency “different from the first frequency” does not additionally require that the frequencies be in different frequency bands. The patentee knew what a frequency was and knew what a frequency band was and chose to use the former in the claims. *See SimpleAir, Inc. v. Sony Ericsson Mobile Commc’ns AB*, 820 F.3d 419, 431 (Fed. Cir. 2016) (“The choice to use ‘data channel’ in claim 1 rather than ‘data feed,’ notwithstanding use of the latter elsewhere in the patent, lends further support to our conclusion that ‘data feed’ does not carry the same meaning as ‘data channel.’”).

3. Respondents’ Proposed Construction Is Technically Imprecise

In addition to contradicting the plain meaning of the claims and the disclosure, Respondents’ construction is technically imprecise and therefore creates confusion. Among its other problems, the construction calls for the use of an “RF frequency” and a “*WiFi* frequency.” This distinction is contrary to the specification. The “RF interface” and the “WiFi interface” of the claims, as described in the specification, both operate on radio frequencies, referred to as “RF” or “RF frequencies.” Ex. 6 ¶¶ 101, 113-114. Introducing a “WiFi frequency” as contrasted with “RF frequency” makes the claims *less* clear, not more.

WiFi is a family of wireless network protocols or standards. *Id.* ¶¶ 113-114. WiFi operates *on RF frequencies*, just like Bluetooth. *Id.* ¶¶ 80, 114. Unsurprisingly, while the ‘854 Patent uses the term “RF frequency,” *see, e.g.*, Ex. 1, ‘854 Patent, 7:25-27, it does *not* use the

term “WiFi frequency.”¹³ Rather, it refers to “WiFi signals,” *see id.*, which are not the same as a frequency.¹⁴ Signals are transmitted on or at a frequency. Ex. 1 at 7:25-30; Ex. 6 ¶ 47.

Therefore, Respondents’ attempt at equating “second frequency” with “WiFi frequency” should be rejected as technically inaccurate and, more importantly, as not supported by the intrinsic record.

For the above reasons, the frequency terms should be construed according to their plain and ordinary meanings and not rewritten to recite “frequency bands.”

¹³ Similarly, claims in the ’854 Patent refer to “radio frequency interface” and “WiFi interface,” not “WiFi frequency interface.” *See, e.g.*, Ex. 1, ’854 Patent, 42:66-43:2.

¹⁴ Respondents do not appear to argue otherwise as their constructions for these terms differentiate between “frequency” and “signal.”

C. “Indication” Terms (’854 and ’345 Patents)

Disputed Term	Complainant’s Proposed Construction	Respondents’ Proposed Construction
“an indication corresponding to the operation” (’854 Patent, claim 1)	Plain and ordinary meaning, which is: an indication that corresponds to the operation	Plain and ordinary meaning, which is: a message indicating the operation has been performed
“a second indication corresponding to the second operation” (’854 Patent, claim 2; ’345 Patent, claim 1)	Plain and ordinary meaning, which is: a second indication that corresponds to the second operation	Plain and ordinary meaning, which is: a second message indicating the second operation has been performed
“a first indication corresponding to the first operation, a second indication corresponding to the second operation and a third indication corresponding to the third operation” (’345 Patent, claim 1)	Plain and ordinary meaning, which is: A first indication that corresponds to the first operation, a second indication that corresponds to the second operation and a third indication that corresponds to the third operation	Plain and ordinary meaning, which is: a first message indicating the first operation has been performed , a second message indicating the second operation has been performed , and a third message indicating the third operation has been performed

The “indication” claim terms are directed to the sending of an indication corresponding to a fan operation. This indication is sent by a fan’s processor, via a wireless interface, to a server. In some embodiments, the server is sent “information indicating the operation performed by the fan,” Ex. 1 at 11:59-60, and in other embodiments, the server merely receives the command “without receiving a report of the command being implemented” by the fan. *Id.* at 19:35-37.

Although the claim language is not limited to the type of indication, Respondents have yet again inserted limitations into the claims and brazenly assert that their construction is the

plain and ordinary meaning. Except this time, Respondents insert **two** additional limitations: (1) that the indication must indicate that the operation “has been performed,” and (2) that the “indication” itself be must be a “message.” Neither addition is supported by the intrinsic evidence.

1. Limiting the Claims to Require an Indication that an Operation Has Been Performed Is Improper

a) Respondents’ Constructions Are Contrary to the Plain Meaning of the Claims

Nothing in the claim language supports limiting the “indication” sent to a server as only indicating an act has been performed. Respondents are therefore importing a chronological sequencing or timing with respect to when the claimed “indication” is sent to the server where none exists in the claim language.

Indeed, the patentee knew how to write claims that cover the concept that Respondents now seek to improperly import into claim 1 of the ’854 and ’345 Patents. For example, claim 6 of the ’854 Patent, which is dependent on claim 1, recites “wherein the processor is further configured to cause the WiFi interface to send information indicating an operation *implemented* in response to the command.” Ex. 1 at 43:42-45 (emphasis added). Here, the patentee specifically claimed sending information indicating performance of an operation. Because claim 6 is dependent on claim 1, and therefore by definition narrower in scope, it is black-letter law that the broader independent claim 1 would encompass indications that would indicate an operation was implemented (or performed), as well as other types of indications. *See Blackboard, Inc. v. Desire2Learn, Inc.*, 574 F.3d 1371, 1376 (Fed. Cir. 2009); Ex. 6 ¶ 122.

Another dependent claim, claim 5 of the ’345 Patent, which recites “a fan that has a state, and the first indication includes an indication of the state,” is also instructive. Ex. 2 at 41:62-65.

This claim recites that the “indication” of claim 1 can include indication of the state of the fan (e.g., fan on; fan off; a speed setting of the fan). Passing the state of the fan in an indication after an operation could indicate that the operation was performed. Again, claim 1 of the ’345 Patent is broader than dependent claim 5, and therefore would encompass indications with a state as well indications without a state. Ex. 6 ¶ 123. Claim 15 of the ’345 Patent, also dependent on claim 1, reinforces the broader scope of “indication.” Claim 15 recites that one of the “indications” in claim 1, “the second indication,” “includes a device status reporting message.” Ex. 2 at 42:52-53. A device status reporting message does not have to communicate that the second operation has been performed. Ex. 6 ¶ 124.

Thus, the claimed “indication” in independent claim 1 can include a variety of information, and is not limited to only indicating that a corresponding operation “has been performed.” See *IBSA Institut Biochimique, S.A. v. Teva Pharm. USA, Inc.*, 966 F.3d 1374, 1380 (Fed. Cir. 2020) (“[T]he applicant knew the term ‘semi-liquid’ yet elected to use ‘half-liquid’ to mean something different.”). It can certainly do that. But it also can provide a state of the fan, it can provide a device status reporting message, and it can indicate that the fan was merely told to turn the fan motor on, without confirmation that the turn-on operation was implemented.

b) Respondents’ proposed constructions are contrary to the specification

The specification supports Complainant’s proposed plain and ordinary meaning. For example, the specification discloses that “[i]n some, *but not necessarily all* embodiments, the fan device reports its state and/or changes in state due to received commands to a server, e.g., located outside the customer premises.” Ex. 1 at 2:34-37 (emphasis added). Thus, a POSA would understand that the indication sent by the processor to the server can indicate that i) an operation has been performed or ii) the current state of the fan, but that it can also, more broadly, be iii) an

indication of the operation that the fan motor control circuit had instructed the fan motor to perform. Ex. 6 ¶ 124.

The specification further provides another “exemplary”—i.e., non-limiting—embodiment in “System Embodiment 1” with respect to the “indication” sent by the processor. Ex. 1 at 37:20-31. In this embodiment, the fan motor control circuit is “configured to control the fan motor in response to a received first radio frequency control signal, said first radio frequency control signal communicating a first command.” *Id.* at 37:25-27. This embodiment describes sending an indication about “an operation **implemented** in response to the first command.” *Id.* at 37:28-31 (emphasis added). In other words, the specification discloses, in what is explicitly called an “**exemplary** numbered system embodiment,” a restriction very close to what Respondents seek to import into the claim language. Ex. 6, ¶ 127. This is improper on its face. *Certain Electronic Anti Theft Shopping Cart Wheels, Components Thereof and Systems Containing The Same*, Inv. 337-TA-1357, Order No. 11 at 37 (Aug. 14, 2023) (rejecting respondents’ attempt to improperly import limitations from an embodiment into the claim); *see also See Unwired Planet*, 829 F.3d at 1359. Since there is no explicit waiver or lexicography in the specification that supports departing from the plain meaning of the terms and importing these embodiments into the claims, Respondents’ construction should be rejected.

c) Complainant intentionally broadened the claims during prosecution to not limit the claim to require implementation of the operation as part of the indication

The prosecution history further demonstrates why Respondents’ proposed construction cannot be correct. Claim 1 of the ’854 Patent as originally submitted when the application was filed contained language directed to System Embodiment 1:

<u>Original claim 10</u>	<u>System Embodiment 1 (’854 Patent)</u>
A system comprising: a fan device comprising:	A system comprising: a fan device comprising:

<u>Original claim 10</u>	<u>System Embodiment 1 ('854 Patent)</u>
a fan motor; a radio frequency (RF) signal receiver configured to receive radio frequency (RF) control signals from a control unit, said fan device and said control unit being located at a customer premises; a WiFi interface; a fan motor control circuit configured to control the fan motor in response to a received first radio frequency control signal, said first radio frequency control signal communicating a first command; and a first processor configured to communicate to a server, located outside the customer premises, via the WiFi interface, information indicating an operation <u>implemented</u> in response to the first command.	a fan motor; a radio frequency (RF) signal receiver configured to receive radio frequency (RF) control signals from a control unit, said fan device and said control unit being located at a customer premises; a WiFi interface; a fan motor control circuit configured to control the fan motor in response to a received first radio frequency control signal, said first radio frequency control signal communicating a first command; and a first processor configured to communicate to a server, located outside the customer premises, via the WiFi interface, information indicating an operation <u>implemented</u> in response to the first command.

Compare Ex. 3 at WAC00000084 with Ex. 1 at 37:20-31 (emphasis added).

The applicant then broadened claim 10 to remove the “communicate to a server . . . information indicating an operation implemented in response to the first command” language:

the fan motor control circuit is configured to cause the fan motor to perform an operation in response to the signal; and
the processor is configured to transmit, via the WiFi interface, to a server, an indication corresponding to the operation
~~a fan motor control circuit configured to control the fan motor in response to a received first radio frequency control signal, said first radio frequency control signal communicating a first command; and~~
~~a first processor configured to communicate to a server, located outside the customer premises, via the WiFi interface, information indicating an operation implemented in response to the first command.~~

Ex. 3 at WAC00000334. The claim issued shortly thereafter.

Respondents’ proposed constructions, which would effectively read back in the “indicating an operation implemented” language removed by the above amendment, cannot be

reconciled with this prosecution history, and should therefore be disregarded. *See Laryngeal Mask Co.*, 618 F.3d at 1373 (finding it improper to read back into a claim a limitation that was removed during prosecution); *see also* Ex. 6 ¶ 128-129.

2. Respondents' Insertion of "Message" into the Claim Language Should Be Rejected

Respondents' proposed insertion of "message" into the claim similarly lacks any support in the intrinsic record. Nothing in the claim language supports limiting "indication" to a "message." Indeed, claim 15 of the '345 Patent, which depends from claim 1, claims "wherein the second indication includes a device status reporting *message*." Ex. 2 at 42:52-53, (emphasis added). This dependent claim demonstrates that the patentee knew how to specify when it wanted to claim a "message," as it did in claim 15, but not in claim 1. Ex. 6 ¶ 124. And it also shows, under well-settled Federal Circuit law, that the claimed indication of claim 1 can include a "message," but it need not include or be a message.¹⁵ *See Intamin Ltd. v. Magnetar Techs, Corp.*, 483 F.3d 1328, 1335 (Fed. Cir. 2007) ("Claim 2 of the '350 patent discloses '[t]he braking device of claim 1 wherein said intermediary is non-magnetic.' This dependent claim shows both that the claim drafter perceived a distinction between magnetic and non-magnetic intermediaries and that independent claim 1 impliedly embraced magnetic intermediaries.").

Additionally, the specification discloses an exemplary embodiment where "a first processor [is] configured to communicate to a server . . . **information** indicating an operation implemented in response to the first command." Ex. 1 . at 37:28-31 (emphasis added). This embodiment notably uses the term "information" to describe what is being sent by the processor

¹⁵ Complainant generally does not disagree that an "indication" can be a "message indicating [something]," as that is plainly allowed by the dependent claim as well as the specification, but does not agree with the limited scope insisted on by Respondents that all indications must necessarily be messages.

to the server. Thus, in addition to describing the sending of “messages” to the server (*see, e.g. id.* at 10:38-42), the specification alternatively discloses that the processor can send “information,” a broader term.¹⁶ The specification further discloses in other embodiments that the fan device can send “acknowledgement signals” to the server, yet another type of indication that can be sent to the server. Ex. 1 at 19:47-49. Ex. 6 ¶¶ 131-132.

Thus, Respondents’ proposed constructions, which ignore the language of the claims and the prosecution history, and which explicitly import embodiments into the claim language, should be rejected.

D. “a DC power supply configured to provide DC power to the DC fan motor” (’345 Patent, claim 1)

Complainant’s Proposed Construction	Respondents’ Proposed Construction
Plain and ordinary meaning, which is: a DC power supply that is configured to provide DC power to the DC fan motor	Plain and ordinary meaning, which is: a DC power supply adapted to receive the AC filtered power to provide DC power to the DC fan motor

Like all the other terms briefed above, the dispute here is whether the plain meaning of the term should be preserved (Complainant’s position), or whether a new limitation – “receive the AC filtered power” – should be added to change the scope of the claims (Respondents’ position).

Respondents proposed this term to be construed, and yet it is utterly unclear what part of the term they are attempting to construe. All the words of the claim language appear in

¹⁶ To be sure, Complainant does not believe Respondents’ insertion of “message” into the claim is an actual attempt to construe the term “indication,” as their construction retains “indicating,” but if the Court endeavors to construe that term, Complainant believes that it means “information indicating [something],” which is amply supported by the intrinsic record. *See, e.g.*, Ex. 1 at claim 6; 3:45 (“information indicating”); 11:55-62 (“information indicating the time the command was implemented, information indicating the operation performed by the fan device, which in this example is turning on the fan in fan device 1 110, and information identifying the customer premises, which in this example is CP1 102”); 36:15-28; 37:18-30.

Respondents' construction except "configured to." Respondents propose to replace "configured to" with "adapted to receive the AC filtered power." This gratuitous addition of a seven-word term to the existing claim language is not permitted legally and does not make sense technically.

As repeatedly noted above, a term should be construed consistently with its plain and ordinary meaning unless the applicant chose to give it a special meaning in the intrinsic record. *See Epistar*, 566 F.3d at 1334. Here, nothing in the intrinsic record suggests that the applicant meant to provide a special meaning to the term nor deviate from its plain and ordinary meaning.

The claim language, particularly the language surrounding the term, is instructive:

an AC power interface configured to provide AC filtered
power to a DC power supply configured to provide DC
power to the DC fan motor

Ex. 2 at 41:38-40 (Claim 1) (emphasis added).

This full passage identifies two circuits, each "configured to provide" a different type of power: (1) "AC power interface" is configured to provide "AC filtered power"; and (2) "DC power supply" is configured to provide "DC power." Both parts of the broader phrase require only "configured to provide" circuitry, not "adapted to receive" circuitry. Ex. 5 ¶ 31.

Whether intentionally or unintentionally, Respondents' construction upends the structure, and requirements, of this portion of the claim.

As an initial matter, Respondents' position that "configured to"—the only words in the term changed in Respondents' construction—means "adapted to receive the AC filtered power" on its face is non-sensical. The claim uses the common claim drafting term "configured to" multiple times, and applying such proposed construction to every instance of "configured to" would make the claim unintelligible.

Even assuming Respondents are trying to construe only one instance of "configured to,"

relating to the “DC power supply,” their construction does not make sense. The term proposed for construction by Respondents recites a configuration “to provide DC power to the DC fan motor.” Respondents eliminate this configuration and replace it with “receiving the AC filtered power.” Being “configured to provide DC power to the DC fan motor” requires certain circuitry disclosed in the patent. Ex. 5 ¶ 34. In particular, the DC power supply adapts DC power to make it suitable to be used by the DC fan motor. *See* Ex. 2 at 26:23-27 (“DC VBUS voltage 1022 is used as input to DC/DC converter circuits and filters 1022, which generates a plurality of DC output voltages . . . which are utilized by the fan device 300.”); Ex. 5 ¶ 34. The circuitry disclosed in the specification that is configured to provide DC power to the DC fan motor is not required to be adapted to receive AC filtered power. Ex. 5 ¶¶ 33-34. Quite simply, a DC power supply circuit does not have to be “adapted to receive AC filtered power *to provide DC power.*” Ex. 5 ¶¶ 33, 36-37.

Even if Respondents did not intend to construe “configured to” (which would automatically disqualify their construction seeming to unpack only this term), their proposal conflates the functions of the two sets of circuitry in the phrase above. Respondents attempt to transfer—or at a minimum duplicate—the provision of the AC filtered power from the “AC power interface” part of the claim phrase to the “DC power supply” part of the phrase. At best, this introduces a redundancy, but even then not without ambiguity. With Respondents’ construction incorporated, the claim would read: “an AC power interface configured to **provide AC filtered power to** a DC power supply **adapted to receive the AC filtered power to provide** DC power to the DC fan motor.” Introducing a redundancy into the claims is disfavored, and provides another reason to reject Respondents’ proposed construction. *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1340 (Fed. Cir. 2016).

In sum, Respondents' proposed construction should be rejected at least because it (1) introduces an extraneous limitation that cannot be justified by either disclaimer or lexicography (which Respondents concede are not applicable here anyway, as they argue their construction is the plain and ordinary meaning); (2) fails to construe any words in the claim at all or, alternatively, offers an absurd construction for a common claim drafting term "configured to"; (3) renders claim language ambiguous and introduces impermissible redundancy; (4) ignores the relevant intrinsic record; and (5) is technically unsound.

VII. CONCLUSION

For the reasons set forth above, Respondents' attempts to read new limitations into the claims should be rejected and the plain and ordinary meaning of the claim terms should be preserved.

Dated: January 31, 2024

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List of Exhibits

Exhibit #	Description
1	U.S. Patent No. 11,028,854
2	U.S. Patent No. 11,598,345
3	Excerpts of File History for U.S. Patent No. 11,028,854
4	Excerpts of File History for U.S. Patent No. 11,598,345
5	Declaration of Regan Zane
6	Declaration of Apostolos Kakaes
7	Excerpts from IEEE Standard for Information technology - Telecommunications and information exchange between systems Local and metropolitan area networks- Specific requirements Part 11: Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications - IEEE Computer Society, IEEE Std 802.11-2016, Rev. of IEEE Std. 802.11-2012), Dec. 7, 2016, pg. 2239
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9	Wu, Chia-Hsin, et al., A 60nm Wi-Fi/BT/GPS/FM Combo Connectivity SOC with Integrated Power Amplifiers, Virtual SP3T Switch, and Merged WiFi-BT Transceiver, IEEE Radio Frequency Integrated Circuits Symposium (2013), pp. 129-132.
10	Keene, J., “MediaTek combines 802.11ac Wi-Fi and Bluetooth 4.0 into a single chip, calls it the MT7650” The Verge, Mar. 29, 2012 available at: https://www.theverge.com/2012/3/29/2910438/mediatek-MT7650-802-11ac-bluetooth-4-0-chip-laptop
11	U.S. Patent Application Publication 2013/0322499 (Wasily)
12	Excerpts from Holma, Harri and Toskala, Antti, LTE for UMTS Evolution to LTE-Advanced, 2nd Edition, Wiley, 2011, p. 378-379.
13	Recommendation ITU-R V.431-9, Nomenclature of the frequency and wavelength bands used in telecommunications, V Series Vocabulary and related subjects, International Telecommunication Union, Aug. 2015, pp. 1-3
14	LTE 3GPP TS 36.101 v.10.3.0 (2011-06) Technical Specification, 3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception (Release 10)
15	Excerpts from Carr, J., The Technician's Radio Receiver Handbook, Wireless and Telecommunication Technology, 2001.
16	Excerpts from Oxford Dictionary of Electronics & Electrical Engineering, Oxford University Press, 5th Ed. 2018.
17	Correspondence between counsel for Respondents to counsel for Complainant dated January 16, 2024.

Exhibit #	Description
18C	Excerpts of Respondents' Joint Disclosure of Initial Invalidity Contentions in Response to Interrogatory No. 16, dated December 22, 2023 ("Filed Separately Herewith")
19	MPEP 2111
20	"Wi-Fi and the OSI model" D. E. Capano, Sept. 18, 2014, available at https://www.controleng.com/articles/wi-fi-and-the-osi-model/#:~:text=The%20layers%2C%20from%20the%20top,%2C%20Data%20Link%2C%20and%20Physical