

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF TEXAS
DALLAS DIVISION

ROSEN TECHNOLOGIES LLC,	§	
	§	
Plaintiff,	§	
	§	
v.	§	Civil Action No. 3:22-CV-00732-K
	§	
LENNOX INTERNATIONAL INC.,	§	
	§	
Defendant.	§	

CLAIM CONSTRUCTION ORDER

Before the Court is the parties' claim construction briefing. The Court construes claim terms and phrases of the patents in suit after consideration of the parties' Joint Claim Construction and Prehearing Statement (Doc. No. 54), the parties' opening and responsive claim construction briefs (Doc. Nos. 60, 61, 64, and 65), and all supporting material filed with these documents.

I. Background

This is a patent infringement lawsuit. The Plaintiff, Rosen Technologies, LLC ("Plaintiff"), asserts that the Defendant, Lennox International Inc. ("Defendant"), has infringed five patents: U.S. Patent No. 6,619,555 (the "555 Patent"), U.S. Patent No. 6,789,739 (the "739 Patent"); U.S. Patent No. 7,156,318 (the "318 Patent"); U.S. Patent No. 7,185,825 (the "825 Patent"); and U.S. Patent No. 7,232,075 (the "075 Patent"). The parties have identified certain terms and phrases of the claims of these patents for construction by the Court. The Court hereby construes these terms and

phrases. In the process of construing these terms and phrases, the Court also hereby resolves the parties' disputes regarding the definiteness of these terms and phrases.

II. Principles of Law

A. Claim Construction Generally

Claim construction is a matter of law. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc), *aff'd*, 517 U.S. 360 (1996). The Federal Circuit has held that “the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The Supreme Court has stated that the claims are “of primary importance, in the effort to ascertain precisely what it is that is patented.” *Id.* (quoting *Merrill v. Yeomans*, 94 U.S. 568, 570 (1876)).

A court looks to three primary sources when determining the meaning of claims: (1) the claims, (2) the specification, and (3) the prosecution history. *Markman*, 52 F.3d at 979. The claims of the patent must be read in view of the specification of which they are a part. *Id.* The specification consists of a written description of the invention that allows a person of ordinary skill in the art to make and use the invention. *Id.* This description may act as a dictionary explaining the invention and defining terms used in the claims. *Id.* Although a court should generally give such terms their ordinary meaning, a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, so long as the special definition of the term is clearly

stated in the patent specification or file history. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

The Court starts with the claim itself, read in light of the specification. *See Vivid Technologies, Inc. v. American Sci. & Eng'g, Inc.*, 200 F.3d 795, 804 (Fed. Cir. 1999). While the claims themselves provide significant guidance as to the meaning of a claim term, the specification is generally dispositive as “it is the single best guide to the meaning of a disputed term.” *Phillips*, 415 F.3d at 1314-1315. In addition to the claim language and specification, the prosecution history is often helpful in understanding the intended meaning, as well as the scope of technical terms in the claims. *See Vivid*, 200 F.3d at 804. In particular, the prosecution history is relevant in determining whether the patentee intends the language of the patent to be understood in its ordinary meaning. *Id.* Using these tools, the Court construes only the claims that are in controversy and only to the extent necessary to resolve the dispute. *Vivid*, 200 F.3d at 803.

The words of a claim are usually given their ordinary and customary meaning. *See Phillips*, 415 F.3d at 1312. Ordinary and customary meaning is the meaning the claim term would have to a person of ordinary skill in the art (e.g., field of the invention). *See id.* at 1313; *Markman*, 52 F.3d at 979. A person of ordinary skill in the art would read the claim term in the context of the entire patent, including the specification, not just the particular claim where the term appears. *Phillips*, 415 F.3d at 1313. There are instances where the ordinary meaning of claim language, as a person

of skill in the art would understand it, “may be readily apparent even to lay judges,” thereby requiring “little more than the application of the widely accepted meaning of commonly understood words.” *Phillips*, 415 F.3d at 1314. In these situations, general purpose dictionaries are useful. *Id.*

But, in many cases, the Court must determine the ordinary and customary meaning of the claim terms which have a certain meaning in a field of art. *Id.* The Court can look to “those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean.” *Id.* These sources can include “the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of the technical terms, and the state of the art.” *Id.*

When the intrinsic evidence, that is the patent specification and prosecution history, unambiguously describes the scope of a patented invention, reliance on extrinsic evidence, which is everything outside the specification and prosecution history, is improper. *See Vitronics*, 90 F.3d at 1583. While the Court may consult extrinsic evidence to educate itself about the invention and relevant technology, it may not rely upon extrinsic evidence to reach a claim construction that is clearly at odds with a construction mandated by the intrinsic evidence. *See Key Pharm. v. Hercon Lab. Corp.*, 161 F.3d 709, 716 (Fed. Cir. 1998).

B. Construction of Means-Plus-Function Language

Some of the terms in this case deal with the use or alleged use of so-called “means plus function” language. Generally, a court may not read limitations from the specification and prosecution history into the claims, despite the fact that claims often receive their interpretive context from the specification and prosecution history. *See Rambus Inc. v. Infineon Technologies Ag*, 318 F.3d 1081, 1088 (Fed. Cir. 2003). However, there is an exception to the rule that the Court does not import limitations from the specification. When a patentee utilizes the statutorily authorized “means plus function” claim form, certain structural limitations from the specification are imported into the claim construction process. *See* 35 U.S.C. § 112 ¶ 6.¹ Specifically, the statute provides that an element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and the claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof. *See id.*

The intent of § 112 ¶ 6 is to permit use of means expressions without recitation of all the possible means that might be used in a claimed apparatus. *See O.I. Corp. v. Tekmar Co.*, 115 F.3d 1576, 1583 (Fed. Cir. 1997). However, the use of means plus function language carries a price. *See id.* Specifically, the price that a patentee must pay

¹ Congress replaced 35 U.S.C. § 112 ¶ 6 with § 112(f), effective on September 16, 2012. Leahy–Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011). Because the applications resulting in the patents in suit were filed before that date, the Court refers to the pre-AIA version of § 112.

for use of that convenience is the limitation of the claim to the means specified in the written description and equivalents thereof. *See id.* As the Federal Circuit has stated, the quid pro quo for the convenience of employing § 112 ¶ 6 is the duty to link or associate structure in the specification to the recited function. *See Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1208 (Fed. Cir. 2002).

Thus, under means plus function claiming, an inventor may draft a claim element in a manner that only describes a function without describing a particular structure that performs that function. *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1347 (Fed. Cir. 2015) (en banc in pertinent part). This allows the claim element to cover structures that could perform that function. *Id.* While a particular structure need not be disclosed in the claim language, the possible structures that perform the function must be disclosed in the specification of the patent. *Id.* The statute limits the claim element to those structures that are disclosed and their equivalents. *Id.*

Whether 35 U.S.C. § 112 ¶ 6 applies to a claim element depends on the claim language. *Id.* at 1348-50. A claim that uses the words “means” followed by a description of a function creates a rebuttable presumption that 35 U.S.C. § 112 ¶ 6 applies. *Id.* If the claim language does not describe the claim element in this manner, there is a rebuttable presumption that 35 U.S.C. § 112 ¶ 6 does not apply. *Id.* The standard for determining if 35 U.S.C. § 112 ¶ 6 applies in either situation is “whether the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure.” *Id.*; *see also Personalized Media Commc’ns*,

LLC v. Int'l Trade Comm'n, 161 F.3d 696, 704 (Fed. Cir. 1998) (“In deciding whether either presumption has been rebutted, the focus remains on whether the claim as properly construed recites sufficiently definite structure to avoid the ambit of § 112, ¶ 6.”). The presumption that 35 U.S.C. § 112 ¶ 6 does apply can be overcome by a showing that the claim element “goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function.” *Sage Prods. v. Devon Indus., Inc.*, 126 F.3d 1420, 1427-28 (Fed. Cir. 1997). The presumption that 35 U.S.C. § 112 ¶ 6 does not apply can be overcome by a showing that the claim element fails to “recite sufficiently definite structure” or else recites “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350 (quoting *Watts v. XL Sys., Inc.*, 232 F.3d 877, 880 (Fed. Cir. 2000)).

35 U.S.C. § 112 ¶ 6 may apply when the claim language uses a “nonce” word in place of the word “means.” *Id.* at 1350. A nonce word is a “verbal construct that is not recognized as the name of structure and is simply a substitute for the term ‘means for.’” *Id.* Examples of words that may be nonce words include: mechanism, means, element, and device. *Id.* These types of words do not normally convey a specific structure. *Id.* Use of a particular word in claim language that describes a function may appear to invoke 35 U.S.C. § 112 ¶ 6 because it appears to describe a function, but this is not necessarily the case if the term, as the name for a structure, has a reasonably well understood meaning in the art. *Id.* Devices that take their names from the function that they perform are examples of these. *Greenberg v. Ethicon Endo-Surgery, Inc.*, 91 F.3d

1580, 1583 (Fed. Cir. 1996). Examples of these type of devices are “filters,” “brakes,” “clamps,” and “locks.” *Id.* Use of one of these types of words in claim language may appear to invoke 35 U.S.C § 112 ¶ 6 because they appear to describe a function, but this is not necessarily the case, if the term has a reasonably well understood meaning in the art as the name for a structure because the name of the structure is the same as the function that the structure performs. *Id.*

“In cases involving a computer-implemented invention in which the inventor has invoked means-plus-function claiming,” the Federal Circuit “has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor.” *Aristocrat Techs. Australia Pty Ltd. v. Int’l Game Tech.*, 521 F.3d 1328, 1333 (Fed. Cir. 2008). That is, “in a means-plus-function claim ‘in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.’” *Id.* (quoting *WMS Gaming, Inc. v. Int’l Game Technology*, 184 F.3d 1339 (Fed. Cir. 1999)).

C. Definiteness Generally and Applied to Means-Plus-Function Language

The Patent Act requires that a patent specification “conclude with one or more claims *particularly pointing out and distinctly claiming* the subject matter which the applicant regards as [the] invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S.

898, 901 (2014) (quoting 35 U.S.C. § 112 ¶ 2).² Given this “definiteness” requirement, “a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Id.* This standard “mandates clarity, while recognizing that absolute precision is unattainable.” *Id.* at 910.

In the means-plus-function claim context, indefiniteness exists when no structure in the specification corresponds to the claimed function. *See Aristocrat*, 521 F.3d at 1337-38. And, as discussed above, “[i]n cases involving a computer-implemented invention in which the inventor has invoked means-plus-function claiming,” the Federal Circuit “has consistently required that the structure disclosed in the specification be more than simply a general purpose computer or microprocessor.” *Id.* at 1333. That is, “in a means-plus-function claim ‘in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.’” *Id.* (quoting *WMS Gaming*, 184 F.3d at 1339). What is required is that the algorithm is disclosed “in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.” *Finisar Corp. v. DirecTV Group, Inc.*, 523 F.3d 1323, 1340 (Fed. Cir. 2008).

² Congress replaced 35 U.S.C. § 112 ¶ 2 with § 112(b), effective on September 16, 2012. Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112–29, 125 Stat. 284 (2011). Because the applications resulting in the patents in suit were filed before that date, the Court refers to the pre-AIA version of § 112.

Notably, patents are presumed to be valid, and clear and convincing evidence is required to overcome this presumption of validity. *Microsoft Corp. v. i4i Ltd. P'ship*, 564 U.S. 91, 95 (2011). Thus, “any fact critical to a holding on indefiniteness . . . must be proven by the challenger by clear and convincing evidence.” *Grace Instrument Indus., LLC v. Chandler Instruments Co.*, 57 F.4th 1001, 1008 (Fed. Cir. 2023) (internal quotation marks omitted).

III. Construction of Terms and Phrases of the Asserted Patents

A. Person of Ordinary Skill in the Art

As noted above, the words of a claim are usually given their ordinary and customary meaning, that is, the meaning the words would have to a person of ordinary skill in the field of the invention. *See Phillips*, 415 F.3d at 1312. According to Plaintiff, a person of ordinary skill in the art of the inventions of each of the asserted patents “would have a bachelor’s degree in engineering, computer science, or a comparable field, with at least 2 years’ experience in temperature controls, embedded control systems, electronic thermostats, or HVAC controls, or similarly relevant industry experience, with relevant experience substitution for education and vice versa.” Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 9. Defendant does not contest this description of the person of ordinary skill in the art of the inventions. *See generally* Defendant’s Opening Claim Construction Brief (Doc. No. 61); Lennox’s Response to Plaintiff’s Opening Claim Construction Brief (Doc. No. 65). As a result, the Court construes the terms and phrases from the perspective of a person holding a

bachelor's degree in engineering, computer science, or a comparable field, with at least two years' experience in temperature controls, embedded control systems, electronic thermostats, or HVAC controls, or similarly relevant industry experience, with relevant experience substitution for education and vice versa.

B. The '555 Patent

The Court construes terms and phrases of the '555 Patent as follows.

1. means coupling said communications interface and said first remote correspondent ('555 Patent, Claim 18)

The parties dispute the meaning and definiteness of “means coupling said communications interface and said first remote correspondent” as it is used in Claim 18 of the '555 Patent. Plaintiff asserts this phrase is a means-plus-function limitation, where the function is “coupling the communications interface and the remote correspondent” and the structure is a “serial link and/or data link and any equivalents.” Defendant agrees this phrase is a means-plus-function limitation, but asserts the function is “coupling said communications interface and said first remote correspondent” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court agrees with the parties that this phrase is a means-plus-function limitation. It uses the term “means” followed by functional language, creating a presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element does not go on to identify

“sufficient structure, material, or acts within the claim itself to perform entirely the recited function.” *Sage Prods.*, 126 F.3d at 1427-28.

Given that the phrase is a means-plus-function limitation, the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent’s specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court agrees with Defendant that the function is “coupling said communications interface and said first remote correspondent.” That is the function recited in the claim.

Regarding the structure, the ’555 Patent describes two embodiments, both clearly associated with the recited function of “coupling said communications interface and said first remote correspondent.” The first embodiment is shown in Figure 2 and described this way:

FIG. 2 show[s] a typical coupling in which the communications interface 14 send/receives serial data to/from an external (to the thermostat system) modem 20 via serial link 16. The modem conventionally interfaces with an Internet Service Provider (ISP) 21 which completes the communications link to the remote correspondent in the well-known manner. The modem 20 may be dial-up, cable, DSL or any other type suitable for the communications environment in a given installation.

’555 Patent at 6:1-11. Thus, in this first embodiment, the described structure is a serial link, a modem external to the thermostat system, and a communications link completed by an ISP. The second embodiment is shown in Figure 3 and described this way:

[I]n FIG. 3, a modem 24 for communicating with the ISP 21 may be integrated into the communications interface 14 of the input/output unit 14 to eliminate the need for an external modem. Thus, when communications is [sic] established with the remote correspondent 15 according to a schedule or upon demand, the data transfer takes place via modem 24 and data link 26 as shown.

'555 Patent at 6:12-18. Figure 3, in turn, shows data link 26 connecting with ISP 21 to complete the communications link to the remote correspondent. Thus, in this second embodiment, the described structure is a modem integrated into the communications interface, a data link, and a communications link completed by an ISP. As a result, the Court construes the structure to be “a serial link, a modem external to the thermostat system, and a communications link completed by an ISP, or a modem integrated into the communications interface, a data link, and a communications link completed by an ISP, and equivalents thereof.”

Plaintiff's proposed structure, a “serial link and/or data link and any equivalents,” fails to include all of the structure necessary for performing the recited function of “coupling said communications interface and said first remote correspondent.” Plaintiff's proposed structure, in particular, would perform the function of coupling the communications interface to the external modem or the ISP rather than the claimed remote correspondent. The Court thus agrees in part with Defendant's criticism of Plaintiff's proposed structure. Defendant, for example, argues “the corresponding structure must couple the ‘communications interface’ all the way to the ‘remote correspondent’ as claimed.” Defendant's Opening Claim Construction Brief (Doc. No. 61) at 2. In this regard, Defendant is correct. The disclosed structure

in both embodiments includes a communications link completed by an ISP to the remote correspondent.

The Court, however, disagrees with Defendant's contention that the phrase is indefinite for failure of the specification to disclose adequate corresponding structure. Defendant argues that, if an ISP is the corresponding structure, "an ISP is a business, not a structure" and the '555 Patent "fails to disclose any structure for the 'ISP 21.'" *Id.* at 3. According to Defendant, moreover, "it is not enough" that one of skill in the art "might understand various options for the structure used by the 'ISP 21.'" *Id.* Defendant cites *Biomedino, LLC v. Waters Technologies Corp.*, 490 F.3d 946 (Fed. Cir. 2007), in turn, for the proposition that "a bare statement that known techniques or methods can be used does not disclose structure." *Id.* at 953.

Here, there is much more than a bare statement that known techniques or methods can be used. As discussed, as one example, the '555 Patent discloses a serial link, a modem external to the thermostat system, and a communications link completed by an ISP. In *Biomedino*, by contrast, "there [was] nothing to suggest a structure for the claimed control means." *Id.* at 952. Indeed, the Federal Circuit stressed in *Biomedino* that, "while the specification must contain structure linked to claimed means, this is not a high bar: all one needs to do in order to obtain the benefit" of 112 ¶ 6 "is to recite some structure corresponding to the means in the specification." *Id.* at 950 (quoting *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1382 (Fed. Cir. 1999) (cleaned up)). The court, moreover, cited its precedent for the propositions that

a “patentee need not disclose details of structures well known in the art” and that what is needed is “some structure” rather than a “total omission of structure.” *Id.* at 952. Here, as discussed above, there is disclosed structure corresponding to the means in the specification, and Defendant does not argue that ISPs were not well known in the art.

Finally, while Defendant cites to a declaration of its “expert . . . concerning claim construction issues,” Dr. Shoemake, for support for its position that one of skill in the art would not identify adequate structure in the ’555 Patent corresponding to “means coupling said communications interface and said first remote correspondent,” Plaintiff’s expert, Dr. Palmer, was able to identify adequate structure in the ’555 Patent corresponding to this phrase. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 79. Indeed, the structure identified by Dr. Palmer is “a serial link, a serial link in combination with a modem and an internet service provider, or a data link in combination with a modem and an internet service provider.” *Id.* (citations omitted). That is consistent with the Court’s construction. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

2. a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom (’555 Patent, Claim 18)

The parties dispute the meaning and definiteness of “a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom” as it is used in Claim 18 of the ’555 Patent. Plaintiff asserts no construction is necessary given the

phrase's plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is "receiving said electrical signal from the sensor," and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term "means," creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a "function without reciting sufficient structure for performing that function." *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites "a sensor input," and in the context of Claim 18 the '555 Patent the sensor input is quite clearly an electrical connection between a temperature sensor and the processor of the thermostat system. Indeed, this is the plain and ordinary meaning of "a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom." Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 80. Claim 18 itself describes the "sensor input" of the processor's input/output unit as receiving an "electrical signal" from a "temperature sensor," and the '555 Patent describes a thermistor as an example temperature sensor that sends an "electrical signal" in the form of a resistance value representative of the temperature within the conditioned space. '555 Patent at 3:31-35. As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “sensor input” is “a self-descriptive term that describes an associated function without reciting structure for performing that function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 6. But, while “sensor input” may appear to describe a function, this is not the case given that the term, as a name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 80, 82. Like “filters,” “brakes,” “clamps,” and “locks,” “sensor input” has a reasonably well understood meaning as the name for a structure because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendant also contends the fact that multiple things may be used as an electrical connection between a temperature sensor and a processor renders the phrase “a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom” a means-plus-function element and, moreover, indefinite. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 7 (citing examples of screw terminals, solder joints, compression clips, and spring clips). Defendant appears to be confusing breadth with means-plus-function status and indefiniteness. Breadth does not demand means-plus-function status or indefiniteness. *Skky, Inc. v. MindGeek, s.a.r.l.*, 859 F.3d 1014, 1019 (Fed. Cir. 2017) (“To determine whether a claim recites sufficient structure, ‘it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.’”) (quoting

TecSec, Inc. v. Int’l Bus. Machs. Corp., 731 F.3d 1336, 1347 (Fed. Cir. 2013) (internal quotation marks and citations omitted)); *Niazi Licensing Co. v. St. Jude Med. S.C., Inc.*, 30 F. 4th 1339, 1347 (Fed. Cir. 2022) (“[A] claim is not indefinite just because it is broad.”). In short, it is not dispositive that there are multiple types of “filters,” “brakes,” “clamps,” “locks,” and, indeed, “sensor inputs.”

Similarly, reliance by Defendant and its expert on the IEEE Standard Dictionary of Electrical Terms as defining “input” as “the device or collective set of devices used for bringing data into another device” and criticism of “device” as a nonce word are inapposite. Claim 18 does not use the term “device,” and in this regard Defendant and its expert effectively ignore the context of the claim language, which as discussed above makes clear that the “sensor input” is an electrical connection.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that “sensor input” corresponds to no known class of structures and that the phrase is not a term for definite structure, Plaintiff’s expert, Dr. Palmer, explained to the contrary how the “connection between the sensor and the rest of the system is commonly understood to be the sensor input” and “the definition of ‘sensor input,’ and all of the other terms in the limitation, are easily and readily understood by” a person of ordinary skill in the art. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 80, 82. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

3. a control output coupled to the space conditioning equipment for issuing control signals thereto ('555 Patent, Claim 18)

The parties dispute the meaning and definiteness of “a control output coupled to the space conditioning equipment for issuing control signals thereto” as it is used in Claim 18 of the '555 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is “issuing control signals to the space conditioning equipment,” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites “a control output,” and in the context of Claim 18 the '555 Patent the control output is quite clearly a signal interface between the space conditioning equipment and the processor of the thermostat system. Indeed, this is the plain and ordinary meaning of “a control output coupled to the space conditioning equipment for issuing control signals thereto.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 84. Claim 18 itself describes the “control output” of the processor’s input/output unit as issuing “control

signals” to “space conditioning equipment”; the ’555 Patent describes how “[m]any modern thermostat systems include . . . a data processor to run a process control program stored in the memory . . . to send control signals to the heating and/or cooling equipment to closely control the temperature of the conditioned space,” ’555 Patent at 1:33-40; and the ’555 Patent further describes as an example how, “if the temperature in the conditioned space 4 is found to be too low when operation is in the heating mode, the processor 1 signals the space conditioning equipment 3.” ’555 Patent at 3:38-41. As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “control output” is “a self-descriptive term that describes an associated function without reciting structure for performing that function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 6. But, while “control output” may appear to describe a function, this is not the case given that the term, as a name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 84, 86. Like “filters,” “brakes,” “clamps,” and “locks,” “control output” has a reasonably well understood meaning as the name for a structure because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendant also contends the fact that multiple things may be used as a signal interface between a processor and space conditioning equipment renders the phrase “a control output coupled to the space conditioning equipment for issuing control signals

thereto” a means-plus-function element and, moreover, indefinite. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 8 (citing examples of a soldered, screwed, or clamped connection between a controller integrated circuit or printed circuit board and the wires that go to HVAC equipment, a wireless connection, and an infrared connection). Defendant again appears to be confusing breadth with means-plus-function status and indefiniteness. Breadth does not demand means-plus-function status or indefiniteness. *Skky*, 859 F.3d at 1019 (“To determine whether a claim recites sufficient structure, ‘it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.’”) (quoting *TecSec*, 731 F.3d at 1347 (internal quotation marks and citations omitted)); *Niazi Licensing*, 30 F. 4th at 1347 (“[A] claim is not indefinite just because it is broad.”). In short, it is not dispositive that there are multiple types of “filters,” “brakes,” “clamps,” “locks,” and, indeed, “control outputs.”

Similarly, reliance by Defendant and its expert on the IEEE Standard Dictionary of Electrical Terms as defining “output” as “the device or collective set of devices used for taking data out of a device” and criticism of “device” as a nonce word are inapposite. Claim 18 does not use the term “device,” and in this regard Defendant and its expert effectively ignore the context of the claim language, which as discussed above makes clear that the “control output” is a signal interface.

Finally, while Defendant cites to Dr. Shoemaker's declaration for support for its position that "control output" corresponds to no known class of structures and that the phrase is not a term for definite structure, Plaintiff's expert, Dr. Palmer, explained to the contrary how the "interface between the control device and the device being controlled is commonly referred to as a control output" and "all of the . . . terms in the limitation . . . are easily and readily understood by" a person of ordinary skill in the art. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 84, 86. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

4. a communications interface adapted to establish bi-directional communications between said processor and a remote correspondent which is a source of current information ('555 Patent, Claim 18)

The parties dispute the meaning and definiteness of "a communications interface adapted to establish bi-directional communications between said processor and a remote correspondent which is a source of current information" as it is used in Claim 18 of the '555 Patent. Plaintiff asserts no construction is necessary given the phrase's plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is "establish bi-directional communications between said process [sic] and a remote correspondent which is a source of current information," and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites “a communications interface.” In the context of Claim 18 of the ’555 Patent, this interface falls between the processor of the thermostat system and a remote correspondent. Moreover, this interface establishes bi-directional rather than one-way communications between the processor and the remote correspondent. The ’555 Patent similarly describes the communications interface as “adapted to establish bi-directional communications (via the Internet or some other suitable facility) between the processor and a remote correspondent.” ’555 Patent at 2:12-15. The ’555 Patent goes on to describe two embodiments of a communications interface. The first embodiment is shown in Figure 2 and described as “communications interface 14,” which “send/receives serial data to/from an external (to the thermostat system) modem 20 via serial link 16.” *Id.* at 6:13-5. Thus, in this first embodiment, the communications interface uses a serial link. The second embodiment is shown in Figure 3 and described in this way:

[I]n FIG. 3, a modem 24 for communicating with the ISP 21 may be integrated into the communications interface 14 of the input/output unit 14 to eliminate the need for an external modem. Thus, when communications is [sic] established with the remote correspondent 15 according to a schedule or upon demand, the data transfer takes place via modem 24 and data link 26 as shown.

Id. at 6:12-18. Thus, in this second embodiment, the communications interface uses a data link. Thus, while the '555 Patent states that “[t]he communications interface 14 may be, for example, a conventional serial port,” *id.* at 3:29-30, it is clear that the communications interface may be another type of port—one that interfaces with a data link rather than a serial link. In short, the Court concludes that a person of ordinary skill in the art would understand that “a communications interface adapted to establish bi-directional communications between said processor and a remote correspondent which is a source of current information” describes communications interfaces such as serial ports and ethernet ports. Indeed, this is the plain and ordinary meaning of “a communications interface adapted to establish bi-directional communications between said processor and a remote correspondent which is a source of current information” as it is used in Claim 18 of the '555 Patent. *See* Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 88 (describing how a person of ordinary skill in the art “would readily recognize” that the phrase “conveys a clear sense of its scope and substance” and “would understand” that it “describes a well-known and commonly used family of devices such as serial communications ports, ethernet ports, etc.”). As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “interface” is “a placeholder functional term that corresponds to no known class of structures and that could cover any devices that perform the recited function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 10. Again, while “interface” may appear to describe a function, this is not the case given that the term, as a name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 88. Like “filters,” “brakes,” “clamps,” and “locks,” “interface” has a reasonably well understood meaning as the name for a structure because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendants remaining arguments concerning the alleged deficiency of the specification to disclose adequate corresponding structure are irrelevant given that the phrase in question is not a means-plus-function limitation.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that a person of ordinary skill in the art would not understand “communications interface” to have a sufficiently definite structure, Plaintiff’s expert, Dr. Palmer, explained to the contrary how a person of ordinary skill in the art “would readily recognize” that the phrase “conveys a clear sense of its scope and substance” and “would understand” that it “describes a well-known and commonly used family of devices such as serial communications ports, ethernet ports, etc.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 88. In short, Defendant has not proven a critical fact

underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

5. a first remote correspondent which is a source of current information ('555 Patent, Claim 18)

The parties dispute the meaning and definiteness of “a first remote correspondent which is a source of current information” as it is used in Claim 18 of the '555 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts the phrase is indefinite.

The Court agrees with Plaintiff that no construction is necessary given the phrase’s plain and ordinary meaning. The phrase “current information” has a well-known meaning that even a lay person understands, and there is no indication in the '555 Patent that the inventor intended this term to have any special meaning. For these reasons, the Court construes “current information” to have its plain and ordinary meaning without any further construction.

In response to Plaintiff’s position, Defendant does not argue any construction is necessary. Instead, Defendant argues only that the phrase is indefinite. The Court disagrees. Defendant concedes the '555 Patent discloses examples of “current information,” such as “current weather information” ('555 Patent at 4:12) and “current stock quotations for stock indexes and individual stocks, mutual funds and the like” (*id.* at 5:2-4). But, according to Defendant, “current” is a “subjective ‘term of degree’ whose interpretation ‘depends on the unpredictable vagaries of any one person’s opinion.’” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 13-15.

Defendant's argument, thus, comes down to whether the word "current" is indefinite. The term provides reasonable certainty to those skilled in the art about the scope of the invention. *Nautilus*, 572 U.S. at 901. Absolute precision is not required. *Id.* at 910.

Finally, while Defendant cites to Dr. Shoemake's declaration for support for its position that the phrase is indefinite, Plaintiff's expert, Dr. Palmer, explained to the contrary how "current information" is "easily understood to be information of a time sensitive nature that has not been supplanted by more recent information." Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 90. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

6. a program stored in said memory for displaying messages received from said remote correspondent ('555 Patent, Claim 18)

The parties dispute the meaning and definiteness of "a program stored in said memory for displaying messages received from said remote correspondent" as it is used in Claim 18 of the '555 Patent. Plaintiff asserts no construction is necessary given the phrase's plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is "displaying messages received from said remote correspondent," and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court agrees with Defendant that this phrase is a means-plus-function limitation. It does not use the term "means," creating a presumption that § 112 ¶ 6

does not apply. *Williamson*, 792 F.3d at 1348-50. But the presumption is overcome. The phrase fails to “recite sufficiently definite structure” but instead recites a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350 (quoting *Watts*, 232 F.3d at 880). In particular, it recites “a program” along with the function of “displaying messages received from said remote correspondent.” “Program” is a nonce word, a word that is not recognized as the name of any structure, here an algorithm for performing the claimed function.

Given that the phrase is a means-plus-function limitation, the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent’s specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court agrees with Defendant that the function is “displaying messages received from said remote correspondent.” That is the function recited in the claim.

Regarding the structure, it is important first to note that the relevant phrase is “a program stored in said memory for displaying messages received from said remote correspondent,” that “said memory” in the context of Claim 18 is part of the claimed “processor,” and that Claim 18 separately identifies that the claimed thermostat system includes “a liquid crystal display for selectively displaying an alphanumeric message.” Given that the function of the means-plus-function limitation is to be performed by a “program” stored in the memory of a processor, the required structure is an algorithm. *See Aristocrat*, 521 F.3d at 1333 (“[I]n a means-plus-function claim ‘in which the disclosed structure is a computer, or microprocessor, programmed to carry out an

algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.”) (quoting *WMS Gaming*, 184 F.3d at 1339). And what is required is that the algorithm is disclosed in the ’555 Patent “in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.” *Finisar*, 523 F.3d at 1340.

In this context, Figure 7 of the ’555 Patent and a description of Figure 7 (’555 Patent at 5:41-56) provide the required structure. Figure 7 is a flow chart that provides an algorithm in the form of three steps: (1) “at predetermined times, establish communication between the local thermostat system and a predetermined remote correspondent which is a source of known current information,” (2) “read current information from the remote correspondent,” and (3) “display the current information,” before returning to the first step. ’555 Patent at Fig. 7. The ’555 Patent, in turn, describes a similar algorithm using the following prose:

Still referring to FIG. 1 and also to FIG. 7, in a variant embodiment of the invention, a thermostat system communicates with a remote correspondent 15 which provides a customized service to the user of the thermostat system. In this embodiment of the invention, the user is a subscriber to the customized service in order to receive known current information on a predetermined schedule. At predetermined times (or on demand), data communications is established between the processor 1 and the remote correspondent 15 which, in this case, provides the customized service. The current information is downloaded and displayed. The resulting messages shown and periodically updated on the LCD 12 may be as shown in exemplary FIG. 6 if, for example, Montreal current temperature, daily high and low temperatures and the current quote for Magellan is what the user has subscribed to receive.

'555 Patent at 5:41-56. Both Figure 7 and this description are clearly associated with the recited function of “displaying messages received from said remote correspondent.” As a result, the Court construes the structure to be “’555 Patent at Fig. 7 or ’555 Patent at 5:41-56, and equivalents thereof.” The Court does not include the processor as part of its construction because of the context of the phrase as discussed above.

The Court, however, disagrees with Defendant’s contention that the phrase is indefinite for failure of the specification to disclose adequate corresponding structure. Defendant focuses on “displaying” seemingly in isolation, arguing for example that “[a]lthough the specification uses the word ‘display’ or describes ‘displaying’ information several times, it never explains *how* the function is performed, only *that* it is performed.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 18; *see also id.* at 19 (arguing “the flowcharts in Figs. 5 and 7 that include a step of ‘display’ are merely ‘black box’ illustrations”); Lennox’s Response to Plaintiff’s Opening Claim Construction Brief (Doc. No. 65) at 11 (“that passage merely states in relevant part”). The claimed function, however, includes displaying “messages,” that is, more than one message. And Figure 7 and its description focus on how to display more than one message. In particular, they highlight how in one embodiment “at predetermined times” communication is established with a remote correspondent, current information is read from the remote correspondent, and the current information is displayed. As for the last element of this algorithm, moreover, as discussed above, “a liquid crystal display for selectively displaying an alphanumeric message” is a separate element of

Claim 18. And in this regard, notably, Defendant does not argue that the claimed liquid crystal display is insufficient structure for “displaying” one or more messages. In short, the context of Claim 18 makes clear that the program displays the messages using the liquid crystal display. Indeed, that is not only what the context of Claim 18 indicates, but that is also exactly what the supporting algorithm for the “program” means-plus-function limitation in dispute says. ’555 Patent at 5:50-56 (“The current information is downloaded and displayed. The resulting messages shown and periodically updated on the LCD 12 may be as shown in FIG. 6 . . .”).

Defendant also criticizes Plaintiff and its expert, for example, by arguing that “the knowledge of those in the art cannot be relied on to replace the specification’s failure to disclose a specific algorithm for performing the recited function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 17-18; *see also id.* at 19 (“Dr. Palmer incorrectly assumes that the specification ‘does not need to disclose the specific code or the details of the algorithm’ if ‘the procedure is well-known.’”). According to Defendant, in this regard Plaintiff “contradicts well-established caselaw,” including *EON Corp. v. AT&T Mobility LLC*, 785 F.3d 616 (Fed. Cir. 2015).

To be sure, in *EON* the Federal Circuit indicated that, “[w]here the specification discloses no algorithm, the skilled artisan’s knowledge is irrelevant.” *Id.* at 624. But the Federal Circuit also indicated that, “[w]here the specification discloses an algorithm that the accused infringer contends is inadequate, we judge the disclosure’s sufficiency based on the skilled artisan’s perspective.” *Id.* Here we are in the latter situation.

Moreover, in *EON* the Federal Circuit reiterated its earlier holding that “claim terms involving basic ‘processing,’ ‘receiving,’ and ‘storing’ functions were not necessarily indefinite because a general purpose computer need not ‘be specially programmed to perform the recited function.’” *EON*, 785 F.3d at 621 (quoting *In re Katz Interactive Call Processing Patent Litigation*, 639 F.3d 1303, 1316 (Fed. Cir. 2011)). To be sure, the Federal Circuit also reiterated another earlier holding that “[i]t is only in the rare circumstances where any general-purpose computer without any special programming can perform the function that an algorithm need not be disclosed.” *Id.* at 621 (quoting *Ergo Licensing, LLC v. CareFusion 303, Inc.*, 673 F.3d 1361, 1365 (Fed. Cir. 2012)). But, here, Claim 18 does not merely recite a general-purpose computer. The “program” limitation, and in particular its algorithm as discussed above, provides the required “special programming.” Moreover, the displaying step of that algorithm is performed using the claimed liquid crystal display, as discussed above. And, to the extent Defendant wishes to focus on that step alone, it would be unusual to hold that a liquid crystal display cannot serve as structure for a computer-implemented function where the claimed function (displaying in isolation) is coextensive with a liquid crystal display itself. *See id.* at 622 (“a microprocessor can serve as structure for a computer-implemented function only where the claimed function is ‘coextensive’ with a microprocessor itself”). As a processor processes, receives, and stores, so a liquid crystal display displays.

Finally, while Defendant cites to Dr. Shoemake's declaration for support for its position that one of skill in the art would not identify adequate structure in the '555 Patent corresponding to "a program stored in said memory for displaying messages received from said remote correspondent," Plaintiff's expert, Dr. Palmer, indicates he was able to identify adequate structure in the '555 Patent corresponding to this phrase. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 92. Furthermore, regarding both the phrase in dispute and the step of displaying in isolation, he testified as follows:

Q: Can you explain what you mean by that last sentence?

A: Well, in a nutshell, the person of ordinary skill of the art who is building the thermostat is going to be selecting certain chipsets for the processor and for the display and so forth, and with those, those parts, there will be specific functions that would be implemented, often they'll be implemented as part of the chipset or preprogrammed into the chipset that would be for the purpose of displaying messages. And so, the specifics of the code, for example, implementation of this program would not be necessary because it's going to be dependent on the specific chip sets that are used, but they're standard functions for sending signals to be displayed. And, so, somebody who is one of ordinary skill in the art would know how to make that, that display occur using the functions that are specific to the chipsets that they use.

Q: Okay, so, are you suggesting that if a person of skill in the art would know how to make the, quote, claimed program for displaying messages, end quote, that the '555 Patent doesn't need to disclose a specific algorithm?

A: It does not need to disclose the specific code or the details of the algorithm, because the procedure is well-known.

Palmer Deposition, Exhibit H to Doc. No. 60, at 76:9-77:7. This testimony regarding the "skilled artisan's perspective" supports both the conclusion that the disclosed algorithm is "adequate" (in other words provided in sufficient detail) and the idea that

the step of displaying in isolation is “coextensive” with the hardware otherwise specified in Claim 18 (the claimed display). *See EON Corp.*, 785 F.3d at 622, 624. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

7. which received messages do not pertain to the operation of said thermostat system ('555 Patent, Claim 18)

The parties dispute the meaning and definiteness of “which received messages do not pertain to the operation of said thermostat system” as it is used in Claim 18 of the '555 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts the phrase is indefinite.

The Court agrees with Plaintiff that no construction is necessary given the phrase’s plain and ordinary meaning. The phrase “which received messages do not pertain to the operation of said thermostat system” has a well-known meaning that even a lay person understands, and there is no indication in the '555 Patent that the inventor intended this term to have any special meaning. For these reasons, the Court construes “which received messages do not pertain to the operation of said thermostat system” to have its plain and ordinary meaning without any further construction.

In response to Plaintiff’s position, Defendant does not argue any construction is necessary. Instead, Defendant argues only that the phrase is indefinite. The Court disagrees. According to Defendant, the phrase is a “subjective ‘term of degree’ whose interpretation ‘depends on the unpredictable vagaries of any one person’s opinion.’”

Defendant's Opening Claim Construction Brief (Doc. No. 61) at 20. For support, Defendant cites to the prosecution history of the '555 Patent, indicating it provides "only one example" of a message that "does 'pertain to the operation of said thermostat.'" *Id.* at 21. But, referring to Dr. Palmer's declaration, Defendant concedes he identifies additional examples of information that does pertain to the operation of the thermostat (e.g. measured temperature, humidity) versus information that does not pertain" to the operation of the thermostat such as "[i]nformation that is obtained for the purpose of display" only. *Id.* at 22-23. In short, there is not clear and convincing evidence to conclude that the term does not provide reasonable certainty to those skilled in the art about the scope of the invention. *Nautilus*, 572 U.S. at 901. Absolute precision is not required. *Id.* at 910.

Finally, while Defendant cites to Dr. Shoemake's declaration for support for its position that the phrase is indefinite, Plaintiff's expert, Dr. Palmer, explained to the contrary how a person of ordinary skill in the art "would readily understand that for any control system, there is information and data that pertains to the operation of the control system and there is data that does not." Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 93. Defendant criticizes Dr. Palmer's reference to "'control system,' not the claimed 'thermostat system.'" Lennox's Response to Plaintiff's Opening Claim Construction Brief (Doc. No. 65) at 12. But in this regard Defendant both overlooks the fact that Claim 18 recites a "thermostat system for controlling space conditioning equipment" and omits the fact that Dr. Palmer explained that "parameters that are

utilized in the control algorithms would clearly be understood as pertaining to the operation the thermostat system.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 93. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

C. The ’739 Patent

The Court construes terms and phrases of the ’739 Patent as follows.

1. **storage means** (’739 Patent, Claim 1); **a physical location of the environmental controller stored as location data in storage means in the controller** (’739 Patent, Claim 1)

The parties dispute the meaning and definiteness of “storage means” and the longer phrase “a physical location of the environmental controller stored as location data in storage means in the controller” as they are used in Claim 1 of the ’739 Patent. Plaintiff asserts the phrase “storage means” means “storage,” but in the alternative asserts if this phrase is a means-plus-function limitation that the function is “storing location data” and the structure is “memory.” Plaintiff asserts no construction is necessary for the longer phrase given the phrase’s plain and ordinary meaning. Defendant asserts the longer phrase is a means-plus-function limitation, where the function is “storing a physical location of the environmental controller,” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court concludes that “storage means” is a means-plus-function limitation. “Storage means” uses the term “means,” creating a presumption that § 112 ¶ 6 applies.

Williamson, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element does not go on to identify “sufficient structure, material, or acts within the claim itself to perform entirely the recited function.” *Sage Prods.*, 126 F.3d at 1427-28.

Given that the phrase is a means-plus-function limitation, the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent’s specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court concludes that the function is “storing a physical location of the environmental controller as location data.” The claim recites “storage,” but also more particularly states that “a physical location of the environmental controller stored as location data in storage means in the controller.” In other words, while the physical location of the environmental controller is stored in the storage means, it is only stored as location data. Thus, it is the location data that is stored. Plaintiff wrongly identifies what is stored as only “location data” more generally rather than “a physical location of the environmental controller” as “location data” as specified by Claim 1, while Defendant wrongly identifies what is stored as “a physical location” more generally rather than the “location data” as specified by Claim 1.

Regarding the structure, the Court agrees with Plaintiff that the disclosed corresponding structure is “memory.” Indeed, the ’739 Patent discloses a “memory 8” and describes “a memory for storing program and data information.” ’739 Patent at

Figs. 2-4; *id.* at 2:8-9. As a result, the Court construes the structure to be “memory, and equivalents thereof.”

The Court agrees with Plaintiff that no construction is necessary for the longer phrase given the court’s construction of “storage means” and the longer phrase’s plain and ordinary meaning. Other than “storage means,” the longer phrase, “a physical location of the environmental controller stored as location data in storage means in the controller,” has a well-known meaning that even a lay person understands, and there is no indication in the ’555 Patent that the inventor intended it to have any special meaning. For these reasons, the Court construes the longer phrase to have its plain and ordinary meaning without any further construction besides the Court’s construction of “storage means.”

While Defendant argues “storage means” is indefinite, the Court disagrees. Defendant concedes the “specification mentions a memory throughout the ’739 Patent” (Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 24) and “the specification . . . states that [the] ‘thermostat stores data that establishes its physical location” (*id.* (citing ’739 Patent at 5:6:51-54, 7:13-15, 7:52-55, 8:1-5, 8:26-29)). But, according to Defendant, the specification does so “without recital of where the data is stored.” *Id.* Defendant, however, ignores the fact that the ’739 Patent describes “a memory for storing program and data information.” ’739 Patent at Figs. 2-4; *id.* at 2:8-9. The phrase and the specification of the ’739 Patent thus provide reasonable certainty to those skilled in the art about the scope of “storage means.” *Nautilus*, 572 U.S. at

901. In particular, the specification of the '739 Patent clearly links memory as the structure for storing data, and location data is, after all, data.

Finally, for similar reasons, while Defendant cites to Dr. Shoemake's declaration for support for its position that the phrase is indefinite, Dr. Shoemake concedes that the '739 Patent discloses a memory (Shoemake Declaration, Exhibit A to Doc. No. 61, at ¶ 175), that the '739 Patent discloses memory as storing data (*id.* at ¶ 176), and that the '739 Patent discloses that a "thermostat stores data that establishes its physical location" (*id.* at ¶ 176). He nevertheless reaches the conclusion that the specification "does not say what structure is used to store that data" (*id.* at ¶ 180). Location data, however, is data. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

2. transmitter means connected to the controller adapted to transmit location data to a remote device physically remote from the controller so that a location response is induced at the remote device ('739 Patent, Claim 1)

The parties dispute the meaning of "transmitter means connected to the controller adapted to transmit location data to a remote device physically remote from the controller so that a location response is induced at the remote device" as it is used in Claim 1 of the '739 Patent. Plaintiff asserts no construction is necessary given the phrase's plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is "transmitting location data to a remote device physically remote from the controller so that a location response is induced at

the remote device” and the structure is a “modem with Internet or network connection.”

The Court concludes that “transmitter means connected to the controller adapted to transmit location data to a remote device physically remote from the controller so that a location response is induced at the remote device” is a means-plus-function limitation. The phrase uses the term “means,” creating a presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element does not go on to identify “sufficient structure, material, or acts within the claim itself to perform entirely the recited function.” *Sage Prods.*, 126 F.3d at 1427-28. In particular, Plaintiff has not identified any evidence for the Court to conclude that “transmitter” is a sufficiently well-known term in the art referring to any particular structure or class of structures. Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 21-22; Plaintiff’s Responsive Claim Construction Brief (Doc. No. 64) at 15-16.

Given that the phrase is a means-plus-function limitation, the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent’s specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court agrees with Defendant that the function is “transmitting location data to a remote device physically remote from the controller so that a location response is induced at the remote device.” That is the function recited in the claim.

Regarding the structure, the Court concludes that the disclosed corresponding structure is “a modem with an Internet or network connection.” The ’739 Patent discloses that, “[i]n a specific example, transmitter means are a modem with Internet or network connection that receives location data from the environmental controller and transmits the location data to a specific address on the Internet or in the network.” ’739 Patent at 7:5-9. Similarly, the ’739 Patent states that, “[i]n the above specific example, location data of a thermostat is transmitted from transmission means (a modem) through the Internet to a website maintained to have access to weather or climate information (the remote device).” *Id.* at 7:19-22. Plaintiff has not identified any other possible structure disclosed in the ’739 Patent. As a result, the Court construes the structure to be “a modem with an Internet or network connection, and equivalents thereof.”

3. physically remote from the controller (’739 Patent, Claim 1)

The parties dispute the meaning and definiteness of “physically remote from the controller” as it is used in Claim 1 of the ’739 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts the phrase is indefinite.

The Court agrees with Plaintiff that no construction is necessary given the phrase’s plain and ordinary meaning. The phrase “physically remote from the controller” has a well-known meaning that even a lay person understands, and there is no indication in the ’739 Patent that the inventor intended this term to have any

special meaning. For these reasons, the Court construes “physically remote from the controller” to have its plain and ordinary meaning without any further construction.

In response to Plaintiff’s position, Defendant does not argue any construction is necessary. Instead, Defendant argues that the phrase is indefinite. The Court disagrees. Defendant argues the phrase “fails to provide any scope or boundaries to define how a ‘remote correspondent’ is physically remote.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 26. The phrase, however, provides reasonable certainty to those skilled in the art about the scope of the invention. *Nautilus*, 572 U.S. at 901. Absolute precision is not required. *Id.* at 910. As discussed above, the phrase has a well-known meaning that even a lay person understands, and there is no indication in the ’739 Patent that the inventor intended this term to have any special meaning.

The Court, however, agrees with Defendant that Plaintiff’s understanding of the phrase is incorrect. Plaintiff argues that “a device that is outside of the space that is being environmentally controlled by the environmental controller would be remote from the controller.” Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 23. The Court agrees with Defendant that the ’739 Patent and, in particular Figures 1-4, do not support this understanding of the phrase. *See* Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 27-28. Just as importantly, it is not the plain and ordinary meaning of the phrase. Just because Plaintiff’s understanding is incorrect, though, that does not mean the phrase is indefinite.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that the phrase is indefinite, Dr. Shoemake’s declaration does not establish that there is a lack of reasonable certainty but instead seems to seek something like absolute precision between what is and is not “physically remote.” *Compare, e.g.,* Shoemake Declaration, Exhibit A to Doc. No. 61, at ¶ 189 (“While this passage states remote devices are located ‘away from that thermostat’ it is not clear what characteristic must be present for the device to qualify as being ‘physically remote.’”) with *Nautilus*, 572 U.S. at 910 (noting the definiteness requirement “recogniz[es] that absolute precision is unattainable”). And while it is true that “purely subjective” and “highly subjective” phrases that on their face provide “little guidance to one of skill in the art” require “objective boundaries” drawn from patents’ written descriptions, *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014), the phrase at issue here is not purely or even highly subjective but rather itself provides a reasonable degree of certainty concerning the scope of the invention. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

4. **location response is storage of the location data at the remote device and correlation of the physical to location response data stored at or available to the remote device or created by processing of location data at the remote device whereafter location response data is transmitted from the remote device to the controller ('739 Patent, Claim 1)**

The parties dispute the meaning and definiteness of “location response is storage of the location data at the remote device and correlation of the physical to location response data stored at or available to the remote device or created by processing of location data at the remote device whereafter location response data is transmitted from the remote device to the controller” as it is used in Claim 1 of the ’739 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts the phrase is indefinite.

The Court agrees with Plaintiff that no construction is necessary given the phrase’s plain and ordinary meaning. The phrase has a well-known meaning that even a lay person understands, and there is no indication in the ’739 Patent that the inventor intended this phrase to have any special meaning. For these reasons, the Court construes the phrase to have its plain and ordinary meaning without any further construction.

In response to Plaintiff’s position, Defendant does not argue any construction is necessary. Instead, Defendant argues that the phrase is indefinite. The Court disagrees. Defendant argues the phrase “is indefinite because it includes method steps in what is otherwise an apparatus claim.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 28. The phrase, however, is not a method step. While it is true that the phrase clarifies exactly what a “location response” is, and a “location response” is certain described functionally, Claim 1 importantly includes “transmitter means . . . adapted to transmit location data to a remote device . . . so that a location response is

induced at the remote device.” In other words, while the location response is the described functionality, the phrase does not “require[] a device remote from the location response system to perform a series of method steps.” *Id.* Rather, Claim 1 by its terms claims a “system” that includes a component (transmitter means) that is “adapted” to provide the described functionality. Thus, unlike in *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005), here it is not “unclear whether infringement . . . occurs when one creates a system that allows the user to” perform certain functions, “or whether infringement occurs when the user actually uses” the component to perform those functions. *Id.* Here, Claim 1 clearly requires the former. Likewise, Claim 1 is nothing like the claim at issue in *Rembrandt Data Techs., LP v. AOL, LLC*, 641 F.3d 1331, 1339 (Fed. Cir. 2011), which was a device claim with a distinct method element and no language similar to “adapted to transmit location data to a remote device . . . so that a location response is induced at the remote device.” In short, the phrase in the context of Claim 1 provides reasonable certainty to those skilled in the art about the scope of the invention. *Nautilus*, 572 U.S. at 901.

Finally, while Defendant cites Dr. Palmer’s declaration as supporting its position, Dr. Palmer’s declaration did not take any position with respect to the language critical to the parties’ dispute, “adapted to transmit location data to a remote device . . . so that a location response is induced at the remote device.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 102. As a result, Defendant has not proven

a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

5. **location response is storage of the location data at the remote device and correlation of the physical to location response data stored at or available to the remote device or created by processing of location data at the remote device ('739 Patent, Claim 7)**

The parties dispute the meaning and definiteness of “location response is storage of the location data at the remote device and correlation of the physical to location response data stored at or available to the remote device or created by processing of location data at the remote device” as it is used in Claim 7 of the '739 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts Claim 7 is invalid for failing to limit the scope of Claim 1 (the independent claim on which it depends).

Defendant is correct. Claim 7 recites the exact same language found in Claim 1, without providing any additional language narrowing the scope of Claim 1. As a result, Claim 7 is invalid. *See* 35 U.S.C. § 112, ¶ 4 (“Subject to the following paragraph [regarding a claim in multiple dependent form, which is irrelevant here,] a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.”); *Pfizer, Inc. v. Ranbaxy Labs. Ltd.*, 457 F.3d 1284, 1292 (Fed. Cir. 2006) (noting “a violation of § 112, ¶ 4 renders a patent invalid just as violations of other

paragraphs of § 112 would”). Indeed, Plaintiff does not even contest the invalidity of Claim 7 on this basis. Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 24-25; Plaintiff’s Responsive Claim Construction Brief (Doc. No. 64) at 16-17.

D. The ’318 Patent

The Court construes terms and phrases of the ’318 Patent as follows.

- 1. an input/output unit coupled between said processor and said touch screen for carrying out information transfer therebetween (’318 Patent, Claim 1)**

The parties dispute the meaning and definiteness of “an input/output unit coupled between said processor and said touch screen for carrying out information transfer therebetween” as it is used in Claim 1 of the ’318 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts the phrase is indefinite.

The Court concludes that this phrase is a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. But the presumption is overcome. The phrase fails to “recite sufficiently definite structure” but instead recites a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350 (quoting *Watts*, 232 F.3d at 880). In particular, it recites “an input/output unit coupled between said processor and said touch screen” along with the function of “carrying out information transfer therebetween.” “Unit” is a nonce word, a word that is not

recognized as the name of any structure, here any structure for performing the claimed function.

Given that the phrase is a means-plus-function limitation, Plaintiff is incorrect that no construction is necessary, and the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent's specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court concludes that the function is "carrying out information transfer between said processor and said touch screen." That is the function recited in the claim, rephrased to clarify what "therebetween" refers to.

Regarding the structure, the '318 Patent discloses an input/output unit 10 in Figure 1A. In this figure, the input/output unit includes an A/D 27. The written description explains that "[a]n analog-to-digital converter 27 (which may not be required in all systems) serves to convert any analog information received by the I/O unit 10 to digital information which is suitable for use by the CPU 9." '318 Patent at 5:56-60. Thus, the structure may include an analog-to-digital converter. The written description, moreover, goes on to explain why A/D 27 may not be required in all systems, and in the process discloses other structure (switching circuits) that in some systems is sufficient:

Those skilled in the art will understand that if the correspondents external to the processor 1 communicating with the CPU 9 are all digital in nature (e.g., if the temperature sensor 5 incorporates its own analog-to-digital converter and sends a digital representation of temperature to the processor 1), then the I/O unit 10 may only constitute simple switching circuits.

Id. at 5:67-6:6. As a result, the Court construes the structure to be “simple switching circuits (if all correspondents external to the processor are all digital in nature) or switching circuits and an analog-to-digital converter (if at least one correspondent external to the processor is not digital in nature), and equivalents thereof.

The Court disagrees with Defendant’s contention that the phrase is indefinite. Defendant argues “it would be impossible for the input/output unit to be coupled *between* said processor and said touch screen when said input/output unit must also be *part of* said processor.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 31; *see also id.* (arguing the claim is “nonsensical”); Lennox’s Response to Plaintiff’s Opening Claim Construction Brief (Doc. No. 65) at 11 (“Plaintiff’s argument ignores the impossibility of having an input/output unit that is both part of the processor and between the processor and touchscreen”). The claim, however, reasonably conveys that the input/output unit is the part of the processor that connects to the touchscreen, and in this sense the input/output unit is the “go-between” between the processor and the touchscreen. That is what Claim 1 and the rest of the ’318 Patent convey. ’318 Patent at Claim 1 (“an input/output unit coupled between said processor and said touch screen *for carrying out information transfer therebetween*”), Figure 1A (showing input/output unit 10 as the only part of processor 1 with any line connected to touch screen 2). Claim 1 is thus not nonsensical.

Here, moreover, Defendant does not cite to any evidence one of skill in the art would not find the claim language to provide reasonable certainty regarding the scope

of the invention. Thus, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

2. a sensor input coupled to each said environmental condition sensors for receiving said electrical signal therefrom ('318 Patent, Claim 1)

The parties dispute the meaning and definiteness of “a sensor input coupled to each said environmental condition sensors for receiving said electrical signal therefrom” as it is used in Claim 1 of the '318 Patent. Plaintiff asserts no construction is necessary given the phrase's plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is “receiving said electrical signal from each environmental condition sensor,” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

With respect to this phrase, the parties present similar arguments as those presented with respect to a similar limitation in Claim 18 of the '555 Patent. For similar reasons as those discussed above regarding Claim 18 of the '555 Patent, the Court reaches similar conclusions regarding Claim 1 of the '318 Patent.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites “a sensor input,”

and in the context of Claim 1 the '318 Patent the sensor input is quite clearly an electrical connection between an environmental condition sensor and the processor of the programmable thermostat system. Indeed, this is the plain and ordinary meaning of “a sensor input coupled to each said environmental condition sensors for receiving said electrical signal therefrom.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 105. Claim 1 itself describes the “sensor input” of the processor’s input/output unit as receiving an “electrical signal” from an “environmental condition sensor,” and the '318 Patent describes a thermistor as an example temperature sensor that sends an “electrical signal” in the form of a resistance value representative of the temperature within the conditioned space. '318 Patent at 6:11-18. As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “sensor input” is “a self-descriptive term that describes an associated function without reciting structure for performing that function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 6. But, while “sensor input” may appear to describe a function, this is not the case given that the term, as a name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 105, 107. Like “filters,” “brakes,” “clamps,” and “locks,” “sensor input” has a reasonably well understood meaning as the name for a structure because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendant also contends the fact that multiple things may be used as an electrical connection between a temperature sensor and a processor renders the phrase “a sensor input coupled to each said environmental condition sensors for receiving said electrical signal therefrom” a means-plus-function element and, moreover, indefinite. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 7 (citing examples of screw terminals, solder joints, compression clips, and spring clips). Defendant appears to be confusing breadth with means-plus-function status and indefiniteness. Breadth does not demand means-plus-function status or indefiniteness. *Skky*, 859 F.3d at 1019 (“To determine whether a claim recites sufficient structure, ‘it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.’”) (quoting *TecSec*, 731 F.3d at 1347 (internal quotation marks and citations omitted)); *Niazi Licensing*, 30 F. 4th at 1347 (“[A] claim is not indefinite just because it is broad.”). In short, it is not dispositive that there are multiple types of “filters,” “brakes,” “clamps,” “locks,” and, indeed, “sensor inputs.”

Similarly, reliance by Defendant and its expert on the IEEE Standard Dictionary of Electrical Terms as defining “input” as “the device or collective set of devices used for bringing data into another device” and criticism of “device” as a nonce word are inapposite. Claim 1 does not use the term “device,” and in this regard Defendant and

its expert effectively ignore the context of the claim language, which as discussed above makes clear that the “sensor input” is an electrical connection.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that “sensor input” corresponds to no known class of structures and that the phrase is not a term for definite structure, Plaintiff’s expert, Dr. Palmer, explained to the contrary how the “connection between the sensor and the rest of the system is commonly understood to be the sensor input” and “the definition of ‘sensor input,’ and all of the other terms in the limitation, are easily and readily understood by” a person of ordinary skill in the art. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 105, 107. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

3. a control output coupled to the space conditioning equipment for issuing control signals thereto (’318 Patent, Claim 1)

The parties dispute the meaning and definiteness of “a control output coupled to the space conditioning equipment for issuing control signals thereto” as it is used in Claim 1 of the ’318 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is “issuing control signals to the space conditioning equipment,” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

With respect to this phrase, the parties present similar arguments as those presented with respect to a similar limitation in Claim 18 of the '555 Patent. For similar reasons as those discussed above regarding Claim 18 of the '555 Patent, the Court reaches similar conclusions regarding Claim 1 of the '318 Patent.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites “a control output,” and in the context of Claim 1 of the '318 Patent the control output is quite clearly a signal interface between the space conditioning equipment and the processor of the thermostat system. Indeed, this is the plain and ordinary meaning of “a control output coupled to the space conditioning equipment for issuing control signals thereto.” *See* Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 84. Claim 1 itself describes the “control output” of the processor’s input/output unit as issuing “control signals” to “space conditioning equipment”; the '318 Patent describes how “[m]any modern thermostat systems include . . . a data processor to run a process control program stored in the memory . . . to send control signals to the heating and/or cooling equipment to closely control the temperature of the conditioned space,” '318 Patent at 1:51-58; and the '318 Patent further describes as an example how, “if the

temperature in the conditioned space 4 is found to be too low when operation is in the heating mode, the processor 1 signals the space conditioning equipment 3.” ’318 Patent at 6:18-22. As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “control output” is “a self-descriptive term that describes an associated function without reciting structure for performing that function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 6. But, while “control output” may appear to describe a function, this is not the case given that the term, as a name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 84, 86. Like “filters,” “brakes,” “clamps,” and “locks,” “control output” has a reasonably well understood meaning as the name for a structure because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendant also contends the fact that multiple things may be used as a signal interface between a processor and space conditioning equipment renders the phrase “a control output coupled to the space conditioning equipment for issuing control signals thereto” a means-plus-function element and, moreover, indefinite. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 8 (citing examples of a soldered, screwed, or clamped connection between a controller integrated circuit or printed circuit board and the wires that go to HVAC equipment, a wireless connection, and an infrared connection). Defendant again appears to be confusing breadth with means-

plus-function status and indefiniteness. Breadth does not demand means-plus-function status or indefiniteness. *Skky*, 859 F.3d at 1019 (“To determine whether a claim recites sufficient structure, ‘it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.’”) (quoting *TecSec*, 731 F.3d at 1347 (internal quotation marks and citations omitted)); *Niazi Licensing*, 30 F. 4th at 1347 (“[A] claim is not indefinite just because it is broad.”). In short, it is not dispositive that there are multiple types of “filters,” “brakes,” “clamps,” “locks,” and, indeed, “control outputs.”

Similarly, reliance by Defendant and its expert on the IEEE Standard Dictionary of Electrical Terms as defining “output” as “the device or collective set of devices used for taking data out of a device” and criticism of “device” as a nonce word are inapposite. Claim 1 does not use the term “device,” and in this regard Defendant and its expert effectively ignore the context of the claim language, which as discussed above makes clear that the “control output” is a signal interface.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that “control output” corresponds to no known class of structures and that the phrase is not a term for definite structure, Plaintiff’s expert, Dr. Palmer, explained to the contrary how the “interface between the control device and the device being controlled is commonly referred to as a control output” and “all of the . . . terms in the limitation . . . are easily and readily understood by” a person of ordinary skill in the

art. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 84, 86. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

4. a control program stored in said memory for causing said central processing unit to communicate through said input/output unit to selectively: 1) establish on said liquid crystal display: a) a representation of a first virtual button at a first predetermined position on the liquid crystal display; and b) a first legend indicative of a first control function of said thermostat, which first control function is for controlling a first space conditioning equipment component, which first control function is active when the first legend is viewable; 2) read the position on the touch pad juxtaposed with said first predetermined position on said liquid crystal display to determine if the representation of said first virtual button has been touched; 3) if the first virtual button has been touched: a) determining that the thermostat has been directed to control a second space conditioning equipment component; b) activating a second control function for controlling the second space conditioning equipment component; and c) displaying on said liquid crystal display a second legend indicative of said second control function of said thermostat, which second control function is for controlling the second space conditioning equipment component, which second control function is active when the second when legend is viewable ('318 Patent, Claim 1)

The parties dispute the meaning and definiteness of the following phrase as it is used in Claim 1 of the '318 Patent:

a control program stored in said memory for causing said central processing unit to communicate through said input/output unit to selectively: 1) establish on said liquid crystal display: a) a representation of a first virtual button at a first predetermined position on the liquid crystal display; and b) a first legend indicative of a first control function of said thermostat, which first control function is for controlling a first space conditioning equipment component, which first control function is active when the first legend is viewable; 2) read the position on the touch pad juxtaposed with said first predetermined position on said liquid crystal display to determine if the representation of said first virtual button has been touched; 3) if the first virtual button has been touched: a) determining that the thermostat has been directed to control a second space conditioning equipment component; b) activating a second control function for controlling the second space conditioning equipment component; and c) displaying on said liquid crystal display a second legend indicative of said second control function of said thermostat, which second control function is for controlling the second space conditioning equipment component, which second control function is active when the second when legend is viewable.

Plaintiff asserts no construction is necessary given the phrase's plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is everything after "a control program stored in said memory for":

causing said central processing unit to communicate through said input/output unit to selectively: 1) establish on said liquid crystal display: a) a representation of a first virtual button at a first predetermined position on the liquid crystal display; and b) a first legend indicative of a first control function of said thermostat, which first control function is for controlling a first space conditioning equipment component, which first control function is active when the first legend is viewable; 2) read the position on the touch pad juxtaposed with said first predetermined position on said liquid crystal display to determine if the representation of said first virtual button has been touched; 3) if the first virtual button has been touched: a) determining that the thermostat has been directed to control a second space conditioning equipment component; b) activating a second control function for controlling the second space conditioning equipment component; and c) displaying on said liquid crystal display a second legend indicative of said second control function of said thermostat, which second control function is for controlling the

second space conditioning equipment component, which second control function is active when the second when legend is viewable.

Defendant further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court agrees with Defendant that this phrase is a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. But the presumption is overcome. The phrase fails to “recite sufficiently definite structure” but instead recites a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350 (quoting *Watts*, 232 F.3d at 880). In particular, it recites “a program” along with a function (everything in the phrase recited after “a control program stored in said memory for”). “Program” is a nonce word, a word that is not recognized as the name of any structure, here an algorithm for performing the claimed function.

Plaintiff argues the phrase is not a means-plus-function limitation based on both the law and the facts. With respect to the law, Plaintiff argues that, “where a claim recites a function, but then goes to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.” Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 27 (citing *Cole v. Kimberly-Clark Corp.*, 102 F.3d 524 (Fed. Cir. 1996)). According to Plaintiff, “[t]his precedent applies here.” *Id.* With respect to the facts, Plaintiff argues that “the claim itself describes an algorithm with a degree of detail such that a person of skill in the art would know how [to] make the claimed program.” *Id.*

Four reported Federal Circuit majority opinions have relied upon *Cole* for the proposition that, “where a claim recites a function, but then goes to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.” While none involve computer software-related claim language,³ the most recent does conclude that—despite even use of the term “means”—a claim provided sufficient “detailed recitation of structure for performing the [claimed] function” to “take[] this element out of the scope of § 112, ¶ 6.” *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1304 (Fed. Cir. 1999). But in that claim, following the language “positioning means for moving said transducer means between the concentrically adjacent tracks on said micro hard-disk,” the claim “further provide[d] a list of the structure underlying the means.” *Id.* at 1303. Indeed, the claim recited: “said positioning means including: two support arms . . . a pivot shaft . . . a positioning arm . . . a bearing assembly . . . a stepper motor . . . means for operating said stepper motor . . . and a tensioned steel band.” *Id.* The claim also recited “the specific location and interconnection of each of these structural sub-elements.” *Id.* Claim 1 of the ’318 Patent, by contrast, does not provide any algorithm other than the recited function. While the recited function is fairly detailed, it is the recited function. It is not the algorithm for performing the recited function. Thus,

³ See *Sage Prod., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1428 (Fed. Cir. 1997) (mechanical); *Personalized Media Commc’ns, LLC v. Int’l Trade Comm’n*, 161 F.3d 696, 704 (Fed. Cir. 1998) (electrical); *Al-Site Corp. v. VSI Int’l, Inc.*, 174 F.3d 1308, 1318 (Fed. Cir. 1999) (mechanical); *Rodime PLC v. Seagate Tech., Inc.*, 174 F.3d 1294, 1303–04 (Fed. Cir. 1999) (mechanical).

unlike in *Rodime*, the claim does not provide a list of the structure (the algorithm) for performing the recited function.

Given that the phrase is a means-plus-function limitation, Plaintiff is incorrect that no construction is necessary, and the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent's specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court agrees with Defendant that the function, as discussed above, is everything in the phrase recited after "a control program stored in said memory for." That is the function recited in the claim.

Regarding the structure, given that the function of the means-plus-function limitation is to be performed by a "program" stored in the memory of a processor, the required structure is an algorithm. *See Aristocrat*, 521 F.3d at 1333 ("[I]n a means-plus-function claim 'in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.'" (quoting *WMS Gaming*, 184 F.3d at 1339). And what is required is that the algorithm is disclosed in the '318 Patent "in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure." *Finisar*, 523 F.3d at 1340.

Plaintiff does not identify any disclosed algorithm corresponding to the claimed function. Plaintiff's Opening Claim Construction Brief (Doc. No. 60) at 26-27;

Plaintiff's Responsive Claim Construction Brief (Doc. No. 64) at 17-19. In the absence of any identification of any disclosed structure corresponding to the claimed function, the Court concludes that the phrase in question is indefinite.

5. is been touched again ('318 Patent, Claim 4)

The Court notes that the parties have submitted to the Court the phrase "is been touched again," which the parties assert needs construction, but for which the parties have agreed to the construction. Joint Claim Construction and Prehearing Statement (Doc. No. 54) at 1. The Court adopts the parties' agreed constructions for this phrase, "has been touched again."

6. the graphic ('318 Patent, Claims 5, 7, 9, 11)

The parties dispute the meaning and definiteness of "the graphic" as it is used in Claims 5, 7, 9, and 11 of the '318 Patent. Plaintiff asserts no construction is necessary given the phrase's plain and ordinary meaning. Defendant asserts the phrase is indefinite due to a lack of antecedent basis.

According to Plaintiff, "[w]hen the claims are read in the proper context, the term 'the graphic' very clearly refers to a graphic associated with a virtual button of a legend indicative of a control function." Plaintiff's Opening Claim Construction Brief (Doc. No. 60) at 28. For support, Plaintiff cites to its expert, Dr. Palmer. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 111-117.

Defendant cites an unpublished Federal Circuit opinion, *Bushnell Hawthorne, LLC v. Cisco Systems, Inc.*, 813 F. App'x 522 (Fed. Cir. 2020), as an example of a case

“where a claim lacked clear meaning due to a lack of antecedent basis.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 36. According to Defendant, “the graphic” in the claims of the ’318 Patent is indefinite for reasons similar to the reasons “said different IP address” was indefinite in *Bushnell Hawthorne*. *Id.* at 36-37. In particular, Defendant argues, “the graphic” lacks antecedent basis, the specification fails to provide a sufficient description of “the graphic,” and in Claims 5, 7, 9, and 11 it is unclear whether “the graphic” is related to the first, second, or third legends described in Claims 1 and 4 (the claims from which Claims 5, 7, 9, and 11 each depend). *Id.* Defendant also criticizes Plaintiff’s expert, Dr. Palmer, as rewriting the claim language and failing to clarify “whether the graphic and legend can be the same thing or whether they must be different things.” *Id.* at 37-38. Moreover, Defendant argues, the claims “do not associate the term ‘the graphic’ with ‘a legend.’” Lennox’s Response to Plaintiff’s Opening Claim Construction Brief (Doc. No. 65) at 20. In short, Defendant contends, “Plaintiff is either trying to rewrite ‘the graphic’ into ‘a graphic’ or create an association that does not appear in the claims.” *Id.*

The Court concludes that “the graphic” is indefinite. To the extent each of Claims 5, 7, 9, and 11 includes the term “the graphic,” each of these claims fails to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. *See* 35 U.S.C. § 112 ¶ 2. In particular, these claims, read in light of the specification of the ’318 Patent, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention. *Nautilus*, 572 U.S. at 901.

As a preliminary matter, it is true that “the graphic” in Claims 5, 7, 9, and 11 lacks antecedent basis. But that does not end the inquiry, because “[w]hether [a] claim, despite lack of explicit antecedent basis . . . nonetheless has a reasonably ascertainable meaning must be decided in context.” *Energizer Holdings, Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1370 (Fed. Cir. 2006). Here, however, the context of these claims does not provide any reasonably ascertainable meaning. While it is true Claims 1 and 4, from which these claims depend, recite “a first legend,” “a second legend,” and “a third legend,” it is not reasonably clear whether “the graphic” is the same or a different thing compared to these claimed legends. Nor does the specification provide the required level of reasonable certainty. Plaintiff does not even cite any language from the specification explaining what “the graphic” reasonably is. While its expert does, Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 114-115 (citing ’318 Patent at 3:53-66 and Figures 8-10), what he cites also fails to provide any reasonable clarity regarding whether “the graphic” is the same or a different thing compared to the claimed legends. In short, use of “the graphic” fails to inform, with reasonable certainty, those skilled in the art about the scope of the invention. And the Court may not redraft claims to sustain their validity. *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004).

E. The '825 Patent

The Court construes terms and phrases of the '825 Patent as follows.

1. **means coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat ('825 Patent, Claims 1, 11)**

The parties dispute the meaning of “means coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat” as it is used in Claims 1 and 11 of the '825 Patent. Plaintiff asserts this phrase is a means-plus-function limitation, where the function is “coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat” and the structure is “a (power) line and any equivalents.” Defendant agrees this phrase is a means-plus-function limitation and agrees the function is “coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat,” but asserts the structure is “a power line connected to an isolation diode.”

The Court agrees with the parties that this phrase is a means-plus-function limitation. It uses the term “means” followed by functional language, creating a presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element does not go on to identify “sufficient structure, material, or acts within the claim itself to perform entirely the recited function.” *Sage Prods.*, 126 F.3d at 1427-28.

Given that the phrase is a means-plus-function limitation, the next step is for the Court to identify the recited function and the corresponding structure, material, or

acts, if any, described in the patent's specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court agrees with the parties that the function is "coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat." That is the function recited in the claim.

Regarding the structure, the only apparent dispute between the parties is whether the disclosed structure is merely a power line or a power line "connected to an isolation diode." According to Plaintiff, Defendant's inclusion of "connected to an isolation diode" is an impermissible attempt to narrow the scope of the claims beyond what is disclosed in the specification of the '825 Patent. Plaintiff's Opening Claim Construction Brief (Doc. No. 60) at 14. But, for support, Plaintiff cites a portion of the '825 Patent disclosing that power "is conventionally supplied from the space conditioning equipment 3 via a line 30 *through an isolation diode* 33." *Id.* (citing '825 Patent at 5:3-5) (emphasis added). Defendant cites similar disclosure, specifically disclosure that "[t]he thermostat, including the real time clock 30, is normally conventionally powered, via line 35 and an isolation diode 36, from the equipment to which the thermostat is connected." Defendant's Opening Claim Construction Brief (Doc. No. 61) at 38 (citing '825 Patent at 5:43-46). Defendant also cites Figure 2, which displays "line 35" and "isolation diode 36." *Id.* (citing '825 Patent at Fig. 2, 5:3-5, 5:43-47).

Plaintiff's only argument in response to the apparent convergence in the '825 Patent on the way in which power is supplied—via a line and (or through) an isolation

diode—is an argument that the “passage that Defendant cites is a discussion of the prior art, not the inventions of the ’825 Patent.” Plaintiff’s Responsive Claim Construction Brief (Doc. No. 64) at 10. But Plaintiff then cites to the same disclosure Plaintiff itself relied upon in its opening brief. *Id.* (citing ’825 Patent at 5:3-5). Regardless, both the portion of the ’825 Patent relied upon by Plaintiff (’825 Patent at 5:3-5) and the portion of the ’825 Patent relied upon by Defendant (’825 Patent at 5:43-47) make clear that, with respect to the use of a power line and an isolation diode, the claimed invention operates “[i]n accordance with the prior art” (’825 Patent at 5:3), is “conventionally supplied” (’825 Patent at 5:4), and is “conventionally powered” (’825 Patent at 5:43-44). Instead, the inventor highlights, “it is a feature of the invention that no source of backup power, such as a battery or supercap, is required.” ’825 Patent at 5:46-47. The Court does not include a source of backup power, such as a battery or supercap, in its construction. But the disclosed structure is clearly a power line and an isolation diode, and equivalents thereof.

2. real time clock (’825 Patent, Claim 1)

The parties dispute the meaning of “real time clock” as it is used in Claim 1 of the ’825 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts the phrase means “an off the shelf real time clock integrated circuit component that does not have a battery or other backup device in case of a power failure.”

According to Plaintiff, Defendant proffers a “constrained limitation inconsistent with the ’825 Patent.” Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 29. In particular, Plaintiff argues, Defendant “attempts to use an exemplary embodiment which includes a real time clock operating with a non-volatile memory to fabricate a new limitation and import that limitation into the proposed construction.” *Id.* Plaintiff then identifies two alleged problems with Defendant’s proposed construction. First, Plaintiff argues, there is no explicit limitation in the claim language that a “real time clock” be “off the shelf” nor an “integrated circuit.” *Id.* Second, Plaintiff continues, “while the real time clock in an exemplary embodiment does not employ a battery, the inventor did not act as his own lexicographer to redefine the term ‘real time clock’ to explicitly require that a ‘real time clock’ as claimed must ‘not have a battery or other backup device in case of a power failure.’” *Id.*

According to Defendant, however, Plaintiff both “disclaimed a construction where the clock has a ‘battery or other backup device’ to provide power in the event of a power failure” and “make clear via disclaimer that the ‘real time clock’ is an ‘off the shelf integrated circuit component.’” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 39. Notably, to succeed on these arguments, Plaintiff must prove that the specification or prosecution history makes clear and unmistakable, explicitly or implicitly, that the invention does not include a particular feature. *Luminara Worldwide, LLC v. Liown Electronics Co.*, 814 F.3d 1343, 1353 (Fed. Cir. 2016). Examples of such disavowals or disclaimers include “clear and unmistakable statements by the patentee

that limit the claims, such as ‘the present invention includes . . .’ or ‘the present invention is . . .’ or ‘all embodiments of the present invention are’” *Id.*

For support for the first alleged disclaimer, Defendant first cites a statement in the ’825 Patent that the “invention relates to the art of thermostats and, more particularly, to a programmable thermostat incorporating a fail safe real time clock and which does not require battery or other backup device in case of a power failure.” ’825 Patent at 1:7-10. According to Defendant, the “specification makes quite clear that a real time clock with a ‘battery or other backup device’ is not a fail safe real time clock.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 40. Defendant cites discussion in the ’825 Patent that “criticizes prior art real time clocks with battery backup as not being fail safe because they can wear out.” *Id.* (citing ’825 Patent at 5:3-17). Defendant then cites various parts of the specification stating that a battery or other backup device is not “needed” or “required” or could be “eliminated.” *Id.* (citing ’825 Patent at 5:46-48, 3:30-31, Abstract, 1:7-10, 3:54-57, 2:65-67). According to Defendant, “[b]y denigrating prior art devices with batteries or other backup power sources and by repeatedly saying these were not required or could be eliminated, the specification disclaimed devices that include a battery or other backup power source.” *Id.* For support, Defendant cites *David Netzer Consulting Engineer LLC v. Shell Oil Co.*, 824 F.3d 989, 995 (Fed. Cir. 2016).

As Plaintiff highlights in its response brief, however, the ’825 Patent “makes clear that a normal real time clock with or without a battery backup is not a ‘fail safe’

real time clock.” Plaintiff’s Responsive Claim Construction Brief (Doc. No. 64) at 20. As explained by Plaintiff, “the ‘fail safe’ aspect [is] due to the inclusion of a ‘real time clock and a non-volatile random access memory in which the current time and date are periodically read from the real time clock into the random access memory.’” *Id.* at 20-21 (quoting ’825 Patent at 3:2-5) (emphasis added).

Defendant has not proven the first alleged disavowal. In particular, Defendant has not proven that the specification or prosecution history of the ’825 Patent makes clear and unmistakable, explicitly or implicitly, that the invention does not include “a battery or other backup device in case of a power failure.” Statements in the specification that these components are not needed or required or can be eliminated refers, in context, to the inclusion of the non-volatile memory and the process of backing up the current time and date using the non-volatile memory. *See, e.g.*, ’825 Patent at Abstract (“A control program stored in the memory causes the real time clock to periodically read its current time and date information into the non-volatile RAM. Upon restart after an outage, the time and date information stored in the non-volatile RAM is read into the real time clock to provide an acceptable time and date basis for resuming operation. Accordingly, the need for providing a backup power source, such as a battery or a supercap, is eliminated.”). And, notably, Claim 1 of the ’825 Patent separately recites “a non-volatile random access memory” and “a control program . . . directing said real time clock to periodically read its current time and date information into said non-volatile memory.” Thus, it is not the case here that, if the Court were to

adopt Plaintiff's understanding of "real time clock," then "real time clock" would require a battery or other backup device in case of a power failure. *Cf. David Netzer Consulting Engineer*, 824 F.3d at 995 ("If one were to adopt Netzer's proposed construction that 'fractionation' means separation by any method, then 'conventional fractionation' would mean separation by any conventional method, which would encompass the Sulfolane process. That interpretation would be contrary to the specification."). In short, Defendant cannot convert statements that certain components merely are "not necessary" or "required" into exclusion of any device that includes these components.

For support for the second alleged disclaimer, Defendant cites the following discussion in the '825 Patent: "The clock 13, in accordance with the present invention includes a real time clock module 30 which is an off-the-shelf integrated circuit component" '825 Patent at 5:24-26. What Defendant omits, however, is that this discussion relates to Figure 2, and Figure 2 is described as "a block diagram of the clock 13, modified according to a first exemplary embodiment of the invention." *Id.* at 5:18-20. Thus, while the '825 Patent certainly discloses that in one "exemplary embodiment of the invention" the real time clock may be an "off-the-shelf integrated circuit component," it is not clear that in every embodiment the real time block must be limited in this way. Thus, Defendant has not proven the second alleged disavowal. *Cf. Luminara Worldwide*, 814 F.3d at 1353 (discussing examples of disavowals or disclaimers that include "clear and unmistakable statements by the patentee that limit

the claims, such as ‘the present invention includes . . .’ or ‘the present invention is . . .’ or ‘all embodiments of the present invention are . . .’”). In particular, Defendant has not proven that the specification or prosecution history of the ’825 Patent makes clear and unmistakable, explicitly or implicitly, that the invention excludes every embodiment of a “real time clock” other than an “off the shelf integrated circuit component.”

The Court rejects Defendant’s proposed construction. In the absence of any other proposed construction, the Court concludes no construction is necessary.

3. a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom (’825 Patent, Claim 1)

The parties dispute the meaning of “a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom” as it is used in Claim 1 of the ’825 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is “receiving said electrical signals from said temperature sensor,” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

With respect to this phrase, the parties present similar arguments as those presented with respect to a similar limitation in Claim 18 of the ’555 Patent. For similar reasons as those discussed above regarding Claim 18 of the ’555 Patent, the Court reaches similar conclusions regarding Claim 1 of the ’825 Patent.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites “a sensor input,” and in the context of Claim 1 the ’825 Patent the sensor input is quite clearly an electrical connection between a temperature sensor and the processor of the programmable thermostat. Indeed, this is the plain and ordinary meaning of “a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 123. Claim 1 itself describes the “sensor input” of the processor’s input/output unit as receiving an “electrical signal” from a “temperature sensor,” and the ’825 Patent describes a thermistor as an example temperature sensor that sends an “electrical signal” in the form of a resistance value representative of the temperature within the conditioned space. ’825 Patent at 4:47-54. As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “sensor input” is “a self-descriptive term that describes an associated function without reciting structure for performing that function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 6. But, while “sensor input” may appear to describe a function, this is not the case given that the term, as a

name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 123, 125. Like “filters,” “brakes,” “clamps,” and “locks,” “sensor input” has a reasonably well understood meaning as the name for a structure because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendant also contends the fact that multiple things may be used as an electrical connection between a temperature sensor and a processor renders the phrase “a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom” a means-plus-function element and, moreover, indefinite. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 7 (citing examples of screw terminals, solder joints, compression clips, and spring clips). Defendant appears to be confusing breadth with means-plus-function status and indefiniteness. Breadth does not demand means-plus-function status or indefiniteness. *Skky*, 859 F.3d at 1019 (“To determine whether a claim recites sufficient structure, ‘it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.’”) (quoting *TecSec*, 731 F.3d at 1347 (internal quotation marks and citations omitted)); *Niazi Licensing*, 30 F. 4th at 1347 (“[A] claim is not indefinite just because it is broad.”). In short, it is not dispositive that there are multiple types of “filters,” “brakes,” “clamps,” “locks,” and, indeed, “sensor inputs.”

Similarly, reliance by Defendant and its expert on the IEEE Standard Dictionary of Electrical Terms as defining “input” as “the device or collective set of devices used for bringing data into another device” and criticism of “device” as a nonce word are inapposite. Claim 1 does not use the term “device,” and in this regard Defendant and its expert effectively ignore the context of the claim language, which as discussed above makes clear that the “sensor input” is an electrical connection.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that “sensor input” corresponds to no known class of structures and that the phrase is not a term for definite structure, Plaintiff’s expert, Dr. Palmer, explained to the contrary how the “connection between the sensor and the rest of the system is commonly understood to be the sensor input” and “the definition of ‘sensor input,’ and all of the other terms in the limitation, are easily and readily understood by” a person of ordinary skill in the art. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 123, 125. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

4. a control output coupled to the space conditioning equipment for issuing control signals thereto (’825 Patent, Claim 1)

The parties dispute the meaning of “a control output coupled to the space conditioning equipment for issuing control signals thereto” as it is used in Claim 1 of the ’825 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function

limitation, where the function is “issuing controls signals to the space conditioning equipment,” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

With respect to this phrase, the parties present similar arguments as those presented with respect to a similar limitation in Claim 18 of the ’555 Patent. For similar reasons as those discussed above regarding Claim 18 of the ’555 Patent, the Court reaches similar conclusions regarding Claim 1 of the ’825 Patent.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites “a control output,” and in the context of Claim 1 of the ’825 Patent the control output is quite clearly a signal interface between the space conditioning equipment and the processor of the programmable thermostat. Indeed, this is the plain and ordinary meaning of “a control output coupled to the space conditioning equipment for issuing control signals thereto.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 127. Claim 1 itself describes the “control output” of the processor’s input/output unit as issuing “control signals” to “space conditioning equipment”; the ’825 Patent describes how “[m]any modern thermostat include . . . a data processor to run a process control program stored

in the memory . . . to send control signals to the heating and/or cooling equipment to closely control the temperature of the conditioned space,” ’825 Patent at 1:29-35; and the ’825 Patent further describes as an example how, “if the temperature in the conditioned space 4 is found to be too low when operation is in the heating mode, the processor 1 signals the space conditioning equipment 3.” ’825 Patent at 4:54-57. As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “control output” is “a self-descriptive term that describes an associated function without reciting structure for performing that function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 6. But, while “control output” may appear to describe a function, this is not the case given that the term, as a name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 127, 129. Like “filters,” “brakes,” “clamps,” and “locks,” “control output” has a reasonably well understood meaning as the name for a structure because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendant also contends the fact that multiple things may be used as a signal interface between a processor and space conditioning equipment renders the phrase “a control output coupled to the space conditioning equipment for issuing control signals thereto” a means-plus-function element and, moreover, indefinite. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 8 (citing examples of a soldered,

screwed, or clamped connection between a controller integrated circuit or printed circuit board and the wires that go to HVAC equipment, a wireless connection, and an infrared connection). Defendant again appears to be confusing breadth with means-plus-function status and indefiniteness. Breadth does not demand means-plus-function status or indefiniteness. *Skky*, 859 F.3d at 1019 (“To determine whether a claim recites sufficient structure, ‘it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.’”) (quoting *TecSec*, 731 F.3d at 1347 (internal quotation marks and citations omitted)); *Niazi Licensing*, 30 F. 4th at 1347 (“[A] claim is not indefinite just because it is broad.”). In short, it is not dispositive that there are multiple types of “filters,” “brakes,” “clamps,” “locks,” and, indeed, “control outputs.”

Similarly, reliance by Defendant and its expert on the IEEE Standard Dictionary of Electrical Terms as defining “output” as “the device or collective set of devices used for taking data out of a device” and criticism of “device” as a nonce word are inapposite. Claim 1 does not use the term “device,” and in this regard Defendant and its expert effectively ignore the context of the claim language, which as discussed above makes clear that the “control output” is a signal interface.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that “control output” corresponds to no known class of structures and that the phrase is not a term for definite structure, Plaintiff’s expert, Dr. Palmer, explained

to the contrary how the “interface between the control device and the device being controlled is commonly referred to as a control output” and “all of the . . . terms in the limitation . . . are easily and readily understood by” a person of ordinary skill in the art. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 127, 129. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

F. The '075 Patent

The Court construes terms and phrases of the '075 Patent as follows.

1. means coupling said communications interface and said first remote correspondent ('075 Patent, Claim 1)

The parties dispute the meaning and definiteness of “means coupling said communications interface and said first remote correspondent” as it is used in Claim 1 of the '075 Patent. Plaintiff asserts this phrase is a means-plus-function limitation, where the function is “coupling the communications interface and the first remote correspondent” and the structure is a “serial link and/or data link and any equivalents.” Defendant agrees this phrase is a means-plus-function limitation, but asserts the function is “coupling said communications interface and said first remote correspondent” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

With respect to this phrase, the parties present similar arguments as those presented with respect to a similar limitation in Claim 18 of the '555 Patent. For similar

reasons as those discussed above regarding Claim 18 of the '555 Patent, the Court reaches similar conclusions regarding Claim 1 of the '075 Patent.

The Court agrees with the parties that this phrase is a means-plus-function limitation. It uses the term “means” followed by functional language, creating a presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element does not go on to identify “sufficient structure, material, or acts within the claim itself to perform entirely the recited function.” *Sage Prods.*, 126 F.3d at 1427-28.

Given that the phrase is a means-plus-function limitation, the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent’s specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court agrees with Defendant that the function is “coupling said communications interface and said first remote correspondent.” That is the function recited in the claim.

Regarding the structure, the '075 Patent describes two embodiments, both clearly associated with the recited function of “coupling said communications interface and said first remote correspondent.” The first embodiment is shown in Figure 2 and described this way:

FIG. 2 show[s] a typical coupling in which the communications interface 14 send/receives serial data to/from an external (to the thermostat system) modem 20 via serial link 16. The modem conventionally interfaces with an Internet Service Provider (ISP) 21 which completes the communications link to the remote correspondent in the well-known manner. The modem 20 may be dial-up, cable, DSL or any other type suitable for the communications environment in a given installation.

'075 Patent at 8:56-65. Thus, in this first embodiment, the described structure is a serial link, a modem external to the thermostat system, and a communications link completed by an ISP. The second embodiment is shown in Figure 3 and described this way:

[I]n FIG. 3, a modem 24 for communicating with the ISP 21 may be integrated into the communications interface 14 of the input/output unit 14 to eliminate the need for an external modem. Thus, when communications is [sic] established with the remote correspondent 15 according to a schedule or upon demand, the data transfer takes place via modem 24 and data link 26 as shown.

'075 Patent at 8:66-9:5. Figure 3, in turn, shows data link 26 connecting with ISP 21 to complete the communications link to the remote correspondent. Thus, in this second embodiment, the described structure is a modem integrated into the communications interface, a data link, and a communications link completed by an ISP. As a result, the Court construes the structure to be “a serial link, a modem external to the thermostat system, and a communications link completed by an ISP, or a modem integrated into the communications interface, a data link, and a communications link completed by an ISP, and equivalents thereof.”

Plaintiff's proposed structure, a “serial link and/or data link and any equivalents,” fails to include all of the structure necessary for performing the recited function of “coupling said communications interface and said first remote correspondent.” Plaintiff's proposed structure, in particular, would perform the function of coupling the communications interface to the external modem or the ISP rather than the claimed remote correspondent. The Court thus agrees in part with

Defendant's criticism of Plaintiff's proposed structure. Defendant, for example, argues "the corresponding structure must couple the 'communications interface' all the way to the 'remote correspondent' as claimed." Defendant's Opening Claim Construction Brief (Doc. No. 61) at 2. In this regard, Defendant is correct. The disclosed structure in both embodiments includes a communications link completed by an ISP to the remote correspondent.

The Court, however, disagrees with Defendant's contention that the phrase is indefinite for failure of the specification to disclose adequate corresponding structure. Defendant argues that, if an ISP is the corresponding structure, "an ISP is a business, not a structure" and the '555 Patent "fails to disclose any structure for the 'ISP 21.'" *Id.* at 3. According to Defendant, moreover, "it is not enough" that one of skill in the art "might understand various options for the structure used by the 'ISP 21.'" *Id.* Defendant cites *Biomedino*, 490 F.3d at 946, in turn, for the proposition that "a bare statement that known techniques or methods can be used does not disclose structure." *Id.* at 953.

Here, there is much more than a bare statement that known techniques or methods can be used. As discussed, as one example, the '075 Patent discloses a serial link, a modem external to the thermostat system, and a communications link completed by an ISP. In *Biomedino*, by contrast, "there [was] nothing to suggest a structure for the claimed control means." *Id.* at 952. Indeed, the Federal Circuit stressed in *Biomedino* that, "while the specification must contain structure linked to claimed

means, this is not a high bar: all one needs to do in order to obtain the benefit” of ¶ 6 “is to recite some structure corresponding to the means in the specification.” *Id.* at 950 (quoting *Atmel*, 198 F.3d at 1382 (cleaned up)). The court, moreover, cited its precedent for the propositions that a “patentee need not disclose details of structures well known in the art” and that what is needed is “some structure” rather than a “total omission of structure.” *Id.* at 952. Here, as discussed above, there is disclosed structure corresponding to the means in the specification, and Defendant does not argue that ISPs were not well known in the art.

Finally, while Defendant cites to a declaration of its “expert . . . concerning claim construction issues,” Dr. Shoemake, for support for its position that one of skill in the art would not identify adequate structure in the ’075 Patent corresponding to “means coupling said communications interface and said first remote correspondent,” Plaintiff’s expert, Dr. Palmer, was able to identify adequate structure in the ’075 Patent corresponding to this phrase. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 135. Indeed, the structure identified by Dr. Palmer is “a serial link, a serial link in combination with a modem and an internet service provider, or a data link in combination with a modem and an internet service provider.” *Id.* (citations omitted). That is consistent with the Court’s construction. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

**2. means for controlling space conditioning equipment
(’075 Patent, Claim 4)**

The parties dispute the meaning and definiteness of “means for controlling space conditioning equipment” as it is used in Claim 4 of the ’075 Patent. Plaintiff asserts this phrase is a means-plus-function limitation, where the function is “controlling space conditioning equipment” and the structure is “virtual buttons operating with control programs including as described in [the ’075 Patent at] 11:7-13:62 and any equivalents.” Defendant agrees this phrase is a means-plus-function limitation and agrees the function is “controlling space conditioning equipment,” but further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court agrees with the parties that this phrase is a means-plus-function limitation. It uses the term “means” followed by functional language, creating a presumption that § 112 ¶ 6 applies. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element does not go on to identify “sufficient structure, material, or acts within the claim itself to perform entirely the recited function.” *Sage Prods.*, 126 F.3d at 1427-28.

Given that the phrase is a means-plus-function limitation, the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent’s specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court agrees with the parties that the function is “controlling space conditioning equipment.” That is the function recited in the claim.

Regarding the structure, the Court concludes that the disclosed corresponding structure is virtual buttons operating with functional programming modules and a control sequence as described in the '075 Patent at 11:7-13:62, and equivalents thereof.

First, the '075 Patent clearly discloses the use of virtual buttons operating in correspondence with functional programming modules to control space conditioning equipment. Moreover, the '075 Patent clearly discloses the use of a control sequence to display different virtual buttons in a particular order. In particular, the '075 Patent discloses the use of different functional programming modules, where obtaining a new set of functional programming modules causes changes and additions to be indicated on a touch pad and LCD in the form of different virtual buttons. '075 Patent at 10:5-12 (“FIG. 9 is a representation of thermostat system at step 100 of FIG. 8 with a current set of functional programming modules in a control program. FIGS. 10 and 11 are representations of a thermostat system at step 106 of FIG. 8 with a newly obtained set of several functional programming modules incorporated in the control program causing changes and additions to be indicated on touch pad 11 and LCD 12.”), Figure 8 (indicating step 100 is “evaluate functional programming of control program” and step 106 is “change display”). Indeed, Figures 9, 10, and 11 show different virtual buttons “which in response to a user touch . . . causes a change in the operating state of the invention programmable thermostat.” *Id.* at 10:13-16. But not only that, use of

the virtual buttons also causes a change in the virtual buttons themselves and/or legends associated with the virtual buttons. Thus, for example, the '075 Patent discloses:

Virtual button 110 can undergo step 111 in response to a user touch which also causes a change in the operating state of the invention programmable thermostat and a change of the legend associated with virtual button 110 to one of the virtual buttons in column 132. In the example, successive steps 133 to 137 indicate that a user has touched virtual button 110 one or more times to cause the operating state of the programmable thermostat and the legend of virtual button 110 to change

'075 Patent at 11:16-24. The '075 Patent calls the order in which virtual buttons appear a “sequence” or “control sequence.” *Id.* at 12:3-11, 12:19-22, 12:64-66. Finally, these virtual buttons operating in conjunction with the associated functional programming modules of the control program clearly control space conditioning equipment. *See, e.g., id.* at 11:13-16 (“The control program has been changed to enable operation of simple to complex control of space conditioning equipment for heating the conditioned space.”).

Second, the '075 Patent discloses several specific virtual buttons with specific functionality and particular control sequences. *Id.* at 11:7-13:62. Indeed, the '075 Patent states that “some of the transferred functional programming modules are now described,” *id.* at 11:10-11, before providing examples, including an example in which “successive steps 133 to 137 indicate that a user has touched virtual button 110 one or more times to cause the operating state of the programmable thermostat and the legend of virtual button 110 to change.” *Id.* at 11:20-25. Figure 10 shows steps 133 to 137 as various virtual buttons changing from “off” to “heat” to “cool” to “emer heat”

to “auto.” And the ’075 Patent describes steps 133 to 137 as a “particular sequence of thermostat functions.” *Id.* at 12:3-5. Notably, Plaintiff cites to this same disclosure as an example of an algorithm. Plaintiff’s Responsive Claim Construction Brief (Doc. No. 64) at 11 (“For example, the algorithm discussed in the specification clearly describes at steps B through E changing the operational state of the space conditioning equipment. For example, at step B the space conditioning equipment switches “from ‘off’ mod[e] to ‘heat mode’” while at step C it switches from “‘heat mode’ to ‘cool mode.’”) (corresponding to ’075 Patent at 11:30-45).

Given that this structure of the means-plus-function limitation includes functional programming modules, Defendant argues the ’075 Patent must disclose corresponding algorithms. Defendant, for example, argues that, “[b]ecause a control program running operational algorithms is used to perform the recited function, the case law imposes additional requirements on the specification,” specifically the requirement to disclose a corresponding algorithm. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 48 (citing *WMS Gaming*, 184 F.3d at 1349). In turn, Defendant argues, “[a]s the specification does not disclose any specific algorithm for ‘controlling space conditioning equipment,’ the term is indefinite.” *Id.* at 49.

The description in the ’075 Patent at column 11, line 7 through column 13, line 62, however, identifies algorithms. As discussed, this portion of the ’075 Patent discloses not only specific virtual buttons with specific functionality, but also specific control sequences. *Id.* at 11:7-13:62. Again as just discussed, the ’075 Patent includes

an example in which “successive steps 133 to 137 indicate that a user has touched virtual button 110 one or more times to cause the operating state of the programmable thermostat and the legend of virtual button 110 to change.” *Id.* at 11:20-25. Defendant fails to explain how this disclosure is not an algorithm. Lennox’s Response to Plaintiff’s Opening Claim Construction Brief (Doc. No. 65) at 22-23. The Court, thus, disagrees with Defendant’s contention that the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

Finally, Plaintiff’s expert, Dr. Palmer, indicates he was able to identify adequate structure in the ’075 Patent corresponding to this phrase. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 136-137. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

3. a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom (’075 Patent, Claim 1)

The parties dispute the meaning and definiteness of “a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom” as it is used in Claim 1 of the ’075 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is “receiving electrical signals from the temperature sensor,” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

With respect to this phrase, the parties present similar arguments as those presented with respect to a similar limitation in Claim 18 of the '555 Patent. For similar reasons as those discussed above regarding Claim 18 of the '555 Patent, the Court reaches similar conclusions regarding Claim 1 of the '075 Patent.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites “a sensor input,” and in the context of Claim 1 of the '075 Patent the sensor input is quite clearly an electrical connection between a temperature sensor and the processor of the thermostat system. Indeed, this is the plain and ordinary meaning of “a sensor input.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 105. Claim 1 itself describes the “sensor input” of the processor’s input/output unit as receiving an “electrical signal” from a “temperature sensor,” and the '075 Patent describes a thermistor as an example temperature sensor that sends an “electrical signal” in the form of a resistance value representative of the temperature within the conditioned space. '075 Patent at 6:18-22. As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “sensor input” is “a self-descriptive term that describes an associated function without reciting structure for performing that function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 6. But, while “sensor input” may appear to describe a function, this is not the case given that the term, as a name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 105, 107. Like “filters,” “brakes,” “clamps,” and “locks,” “sensor input” has a reasonably well understood meaning as the name for a structure because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendant also contends the fact that multiple things may be used as an electrical connection between a temperature sensor and a processor renders the phrase “a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom” a means-plus-function element and, moreover, indefinite. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 7 (citing examples of screw terminals, solder joints, compression clips, and spring clips). Defendant appears to be confusing breadth with means-plus-function status and indefiniteness. Breadth does not demand means-plus-function status or indefiniteness. *Skky*, 859 F.3d at 1019 (“To determine whether a claim recites sufficient structure, ‘it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.’”) (quoting *TecSec*, 731 F.3d at 1347

(internal quotation marks and citations omitted)); *Niazi Licensing*, 30 F. 4th at 1347 (“[A] claim is not indefinite just because it is broad.”). In short, it is not dispositive that there are multiple types of “filters,” “brakes,” “clamps,” “locks,” and, indeed, “sensor inputs.”

Similarly, reliance by Defendant and its expert on the IEEE Standard Dictionary of Electrical Terms as defining “input” as “the device or collective set of devices used for bringing data into another device” and criticism of “device” as a nonce word are inapposite. Claim 1 does not use the term “device,” and in this regard Defendant and its expert effectively ignore the context of the claim language, which as discussed above makes clear that the “sensor input” is an electrical connection.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that “sensor input” corresponds to no known class of structures and that the phrase is not a term for definite structure, Plaintiff’s expert, Dr. Palmer, explained to the contrary how the “connection between the sensor and the rest of the system is commonly understood to be the sensor input” and “the definition of ‘sensor input,’ and all of the other terms in the limitation, are easily and readily understood by” a person of ordinary skill in the art. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 105, 107. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

4. a control output coupled to the space conditioning equipment for issuing control signals thereto ('075 Patent, Claim 1)

The parties dispute the meaning and definiteness of “a control output coupled to the space conditioning equipment for issuing control signals thereto” as it is used in Claim 1 of the '075 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is “issuing control signals to the space conditioning equipment,” and further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

With respect to this phrase, the parties present similar arguments as those presented with respect to a similar limitation in Claim 18 of the '555 Patent. For similar reasons as those discussed above regarding Claim 18 of the '555 Patent, the Court reaches similar conclusions regarding Claim 1 of the '075 Patent.

The Court concludes that this phrase is not a means-plus-function limitation. It does not use the term “means,” creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. Furthermore, the presumption is not overcome because the claim element recites a sufficiently definite structure rather than merely recite a “function without reciting sufficient structure for performing that function.” *Williamson*, 792 F.3d at 1350. The claim element, in particular, recites “a control output,” and in the context of Claim 1 of the '075 Patent the control output is quite clearly a signal interface between the space conditioning equipment and the processor

of the thermostat system. Indeed, this is the plain and ordinary meaning of “a control output coupled to the space conditioning equipment for issuing control signals thereto.” *See* Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 140. Claim 1 itself describes the “control output” of the processor’s input/output unit as issuing “control signals” to “space conditioning equipment”; the ’075 Patent describes how “[m]any modern thermostat systems include . . . a data processor to run a process control program stored in the memory . . . to send control signals to the heating and/or cooling equipment to closely control the temperature of the conditioned space,” ’075 Patent at 1:39-46; and the ’075 Patent further describes as an example how, “if the temperature in the conditioned space 4 is found to be too low when operation is in the heating mode, the processor 1 signals the space conditioning equipment 3.” ’075 Patent at 6:26-28. As a result, no construction is needed, the phrase is not a means-plus-function limitation, and the phrase is not indefinite but reasonably certain.

Defendant argues “control output” is “a self-descriptive term that describes an associated function without reciting structure for performing that function.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 6. But, while “control output” may appear to describe a function, this is not the case given that the term, as a name for structure, has a reasonably well understood meaning. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 140, 86. Like “filters,” “brakes,” “clamps,” and “locks,” “control output” has a reasonably well understood meaning as the name for a structure

because the name of the structure is the same as the function that the structure performs. *See Greenberg*, 91 F.3d at 1583.

Defendant also contends the fact that multiple things may be used as a signal interface between a processor and space conditioning equipment renders the phrase “a control output coupled to the space conditioning equipment for issuing control signals thereto” a means-plus-function element and, moreover, indefinite. Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 8 (citing examples of a soldered, screwed, or clamped connection between a controller integrated circuit or printed circuit board and the wires that go to HVAC equipment, a wireless connection, and an infrared connection). Defendant again appears to be confusing breadth with means-plus-function status and indefiniteness. Breadth does not demand means-plus-function status or indefiniteness. *Skky*, 859 F.3d at 1019 (“To determine whether a claim recites sufficient structure, ‘it is sufficient if the claim term is used in common parlance or by persons of skill in the pertinent art to designate structure, even if the term covers a broad class of structures and even if the term identifies the structures by their function.’”) (quoting *TecSec*, 731 F.3d at 1347 (internal quotation marks and citations omitted)); *Niazi Licensing*, 30 F. 4th at 1347 (“[A] claim is not indefinite just because it is broad.”). In short, it is not dispositive that there are multiple types of “filters,” “brakes,” “clamps,” “locks,” and, indeed, “control outputs.”

Similarly, reliance by Defendant and its expert on the IEEE Standard Dictionary of Electrical Terms as defining “output” as “the device or collective set of devices used

for taking data out of a device” and criticism of “device” as a nonce word are inapposite. Claim 1 does not use the term “device,” and in this regard Defendant and its expert effectively ignore the context of the claim language, which as discussed above makes clear that the “control output” is a signal interface.

Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that “control output” corresponds to no known class of structures and that the phrase is not a term for definite structure, Plaintiff’s expert, Dr. Palmer, explained to the contrary how the “interface between the control device and the device being controlled is commonly referred to as a control output” and “all of the . . . terms in the limitation . . . are easily and readily understood by” a person of ordinary skill in the art. Palmer Declaration, Exhibit F to Doc. No. 60, at ¶¶ 84, 86. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

5. functional programming ('075 Patent, Claim 1)

The parties dispute the meaning of “functional programming” as it is used in Claim 1 of the '075 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts the phrase means “discrete executable code that changes a previously existing function or virtual button or adds a new function or virtual button and does not include data-only transfers.”

According to Plaintiff, “functional programming” does not require construction because it is readily understood in the context of the claim language, and Defendant’s

proposed construction is “an impermissible attempt to limit the scope of the claims beyond that disclosed in the specification.” Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 30. In particular, it first contends the specification “contemplates changing the ‘information’ displayed rather than ‘virtual buttons’ or a ‘new function’” as proposed by Defendant. *Id.* (citing ’075 Patent at 3:16-20, 4:8-11, and 10:34-35). It also contends there is insufficient basis to limit the construction so that functional programming “does not include data-only transfers.” *Id.*

According to Defendant, the specification explicitly narrows the scope of this term by stating that “[f]unctional programming transferred to the thermostat *according to the invention does not include data-only transfers.*” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 42 (citing ’075 Patent at 11:4-6). Defendant also argues the specification clarifies that “functional programming” should be interpreted as “discrete executable code that changes a previously existing function or virtual button or adds a new function or virtual button.” *Id.* For support, Defendant cites discussion in the ’075 Patent that “the remote correspondent is a source of *functional programming which in part changes or adds to one or more previous functions of the control program or representation of virtual buttons* on the display.” *Id.* (citing ’075 Patent at 4:8-11).

The Court concludes that “functional programming” does not include data-only transfers. As argued by Defendant, the ’075 Patent includes an express disavowal indicating that “[f]unctional programming transferred to the thermostat according to

the invention does not include data-only transfers.” ’075 Patent at 11:4-6. This disavowal from the specification of the ’075 Patent is both explicit and clear and unmistakable. It indicates that, “according to the invention,” the functional programming transferred to the thermostat does not include a particular feature: data-only transfers. *See Luminara Worldwide*, 814 F.3d at 1353 (indicating that disavowals require proof that the specification or prosecution history makes clear and unmistakable, explicitly or implicitly, that the invention does not include a particular feature.). Indeed, this language from the ’075 Patent is similar to language the Federal Circuit has indicated rises to the required level of a disavowal. *See id.* (providing examples of disavowals or disclaimers including “the present invention includes . . .” and “the present invention is . . .”). While no magic words must be used, this language indicates a clear intent to deviate from the plain and ordinary meaning of the claim term. *See Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1373 (Fed. Cir. 2014) (“There are no magic words that must be used, but to deviate from the plain and ordinary meaning of a claim term to one of skill in the art, the patentee must, with some language, indicate a clear intent to do so in the patent.”).

To the extent Plaintiff argues the specification “contemplates changing the ‘information’ displayed rather than ‘virtual buttons’ or a ‘new function,’” the ’075 Patent actually describes changing representations of information: “a programmable thermostat capable of receiving functional programming from a remote correspondent or removable media so that representations of information or touch sensitive buttons

on a liquid crystal display are changed from those available to the thermostat before said receipt of functional programming.” ’075 Patent at 3:16-20. More importantly, Claim 1 recites “a control program stored in said memory for causing said central processing unit to selectively . . . operate said transferred functional programming to change or add to representations on the touch screen.” In short, the functional programming that is affirmatively claimed cannot be understood to be a data-only transfer.

The Court, however, disagrees with Defendant that “functional programming” should be construed as “discrete executable code that changes a previously existing function or virtual button or adds a new function or virtual button.” Claim 1 of the ’075 Patent already indicates that “a control program stored in said memory for causing said central processing unit to selectively . . . operate said transferred functional programming to change or add to representations on the touch screen.” Defendant’s proposed construction is therefore both unnecessary and perhaps imparts a meaning to “functional programming” that is slightly different than what Claim 1 actually requires.

6. a control program stored in said memory for causing said central processing unit to selectively: 1) establish on said liquid crystal display one or more representations of buttons at a separated and predetermined positions; 2) read the position on the touch pad juxtaposed with said predetermined position to determine if said representation of a button has been touched; and 3) if said a representation of a button has been touched, processing this information to establish a condition incorporated into the operation of said thermostat system; 4) establish communications between said processor and a first remote correspondent from which is transferred to said memory one or more modules of functional programming; and 5) operate said transferred functional programming to change or add to representations on the touch screen, where said changes or additions of representation on the touch screen were not available to the control program before their transfer to the memory ('075 Patent, Claim 1)

The parties dispute the meaning and definiteness of the following phrase as it is used in Claim 1 of the '075 Patent:

a control program stored in said memory for causing said central processing unit to selectively: 1) establish on said liquid crystal display one or more representations of buttons at a separated and predetermined positions; 2) read the position on the touch pad juxtaposed with said predetermined position to determine if said representation of a button has been touched; and 3) if said a representation of a button has been touched, processing this information to establish a condition incorporated into the operation of said thermostat system; 4) establish communications between said processor and a first remote correspondent from which is transferred to said memory one or more modules of functional programming; and 5) operate said transferred functional programming to change or add to representations on the touch screen, where said changes or additions of representation on the touch screen were not available to the control program before their transfer to the memory

Plaintiff asserts no construction is necessary given the phrase's plain and ordinary meaning. Defendant asserts this phrase is a means-plus-function limitation, where the function is everything after "a control program stored in said memory for":

causing said central processing unit to selectively: 1) establish on said liquid crystal display one or more representations of buttons at a separated and predetermined positions; 2) read the position on the touch pad juxtaposed with said predetermined position to determine if said representation of a button has been touched; and 3) if said a representation of a button has been touched, processing this information to establish a condition incorporated into the operation of said thermostat system; 4) establish communications between said processor and a first remote correspondent from which is transferred to said memory one or more modules of functional programming; and 5) operate said transferred functional programming to change or add to representations on the touch screen, where said changes or additions of representation on the touch screen were not available to the control program before their transfer to the memory

Defendant further asserts the phrase is indefinite for failure of the specification to disclose adequate corresponding structure.

The Court agrees with Defendant that this phrase is a means-plus-function limitation. It does not use the term "means," creating a presumption that § 112 ¶ 6 does not apply. *Williamson*, 792 F.3d at 1348-50. But the presumption is overcome. The phrase fails to "recite sufficiently definite structure" but instead recites a "function without reciting sufficient structure for performing that function." *Williamson*, 792 F.3d at 1350 (quoting *Watts*, 232 F.3d at 880). In particular, it recites "a program" along with a function (everything in the phrase recited after "a control program stored in said memory for"). "Program" is a nonce word, a word that is not recognized as the name of any structure, here an algorithm for performing the claimed function.

Plaintiff argues the phrase is not a means-plus-function limitation based on both the law and the facts. With respect to the law, Plaintiff argues that, “where a claim recites a function, but then goes to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.” Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 32 (citing *Cole*, 102 F.3d at 524). According to Plaintiff, “[t]his precedent applies here.” *Id.* With respect to the facts, Plaintiff argues that “the claim itself describes an algorithm with a degree of detail such that a person of skill in the art would know how [to] make the claimed program.” *Id.*

As discussed above, four reported Federal Circuit majority opinions have relied upon *Cole* for the proposition that, “where a claim recites a function, but then goes to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in means-plus-function format.” While none involve computer software-related claim language,⁴ the most recent does conclude that—despite even use of the term “means”—a claim provided sufficient “detailed recitation of structure for performing the [claimed] function” to “take[] this element out of the scope of § 112, ¶ 6.” *Rodime*, 174 F.3d at 1304. But in that claim, following the language “positioning means for moving said transducer means between the concentrically adjacent tracks on said micro hard-disk,” the claim “further provide[d]

⁴ See *Sage Prod.*, 126 F.3d at 1428 (mechanical); *Personalized Media Commc’ns*, 161 F.3d at 704 (electrical); *Al-Site*, 174 F.3d at 1318 (mechanical); *Rodime*, 174 F.3d at 1303–04 (mechanical).

a list of the structure underlying the means.” *Id.* at 1303. Indeed, the claim recited: “said positioning means including: two support arms . . . a pivot shaft . . . a positioning arm . . . a bearing assembly . . . a stepper motor . . . means for operating said stepper motor . . . and a tensioned steel band.” *Id.* The claim also recited “the specific location and interconnection of each of these structural sub-elements.” *Id.* Claim 1 of the ’075 Patent, by contrast, does not provide any algorithm other than the recited function. While the recited function is fairly detailed, it is the recited function. It is not the algorithm for performing the recited function. Thus, unlike in *Rodime*, the claim does not provide a list of the structure (the algorithm) for performing the recited function.

Given that the phrase is a means-plus-function limitation, Plaintiff is incorrect that no construction is necessary, and the next step is for the Court to identify the recited function and the corresponding structure, material, or acts, if any, described in the patent’s specification. 35 U.S.C. § 112 ¶ 6. In this regard, the Court agrees with Defendant that the function, as discussed above, is everything in the phrase recited after “a control program stored in said memory for.” That is the function recited in the claim.

Regarding the structure, given that the function of the means-plus-function limitation is to be performed by a “program” stored in the memory of a processor, the required structure is an algorithm. *See Aristocrat*, 521 F.3d at 1333 (“[I]n a means-plus-function claim ‘in which the disclosed structure is a computer, or microprocessor, programmed to carry out an algorithm, the disclosed structure is not the general

purpose computer, but rather the special purpose computer programmed to perform the disclosed algorithm.”) (quoting *WMS Gaming*, 184 F.3d at 1339). And what is required is that the algorithm is disclosed in the ’075 Patent “in any understandable terms including as a mathematical formula, in prose, or as a flow chart, or in any other manner that provides sufficient structure.” *Finisar*, 523 F.3d at 1340.

Plaintiff does not identify any disclosed algorithm corresponding to the claimed function. Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 31-32; Plaintiff’s Responsive Claim Construction Brief (Doc. No. 64) at 23-24. In the absence of any identification of any disclosed structure corresponding to the claimed function, the Court concludes that the phrase in question is indefinite.

7. in which said communications interface is coupled to an external modem (’075 Patent, Claim 3)

The parties dispute the meaning and definiteness of “in which said communications interface is coupled to an external modem” as it is used in Claim 3 of the ’075 Patent. Plaintiff asserts no construction is necessary given the phrase’s plain and ordinary meaning. Defendant asserts the phrase is indefinite.

According to Plaintiff, Figure 2 of the ’075 Patent “clearly shows . . . modem 20 separate from the communications interface and connected to it by the serial link 16.” Plaintiff’s Opening Claim Construction Brief (Doc. No. 60) at 33. Indeed, Plaintiff argues, the specification explains that the “external modem” is “external (to the thermostat system)” and that it is connected via serial link 16. *Id.* (citing ’075 Patent at 8:53-59). Moreover, says Plaintiff, this “is in direct contrast to the specification’s

contemplation of an ‘internal modem’ which is ‘integrated into the communications interface.’” *Id.* (citing ’075 Patent at 8:66-9:2). Thus, Plaintiff concludes, one of skill in the art would “clearly be able to determine this [phrase] is used in accordance with its plain and ordinary meaning, *i.e.*, a modem which is not ‘integrated’ into the communications interface” and the phrase “requires no construction and is no way indefinite.” *Id.*

Defendant, by contrast, argues the phrase is indefinite because “the scope and boundaries of ‘external’ is [sic] unknown.” Defendant’s Opening Claim Construction Brief (Doc. No. 61) at 47. On the one hand, Defendant admits the term may mean external to the thermostat system of Claim 1, citing the same disclosure as Plaintiff. On the other hand, Defendant argues, it is uncertain what a person of ordinary skill would consider to be “external” to the thermostat system because of disclosure in the ’075 Patent regarding temperature sensors. *Id.* Moreover, emphasizes Defendant, “the specification clearly states that the modem is ‘external (to the thermostat system),’ not the communications interface. Lennox’s Response to Plaintiff’s Opening Claim Construction Brief (Doc. No. 65) at 22 (citing ’075 Patent at 8:58-59).

The parties, for good reason, seemingly agree that the specification makes clear that an “external modem” is external to the thermostat system. That is what the ’075 Patent describes. ’075 Patent at 8:53-59 (describing “a typical coupling in which the communications interface 14 sends/receives serial data to/from an external (to the thermostat system) modem 20”). The only real dispute appears to be whether

“external” is reasonably clear. But in this regard all Defendant argues concerns disclosure unrelated to any modem (as claimed) but instead related to temperature sensors. The term “external,” moreover, has a well-known meaning that even a lay person understands, and there is no indication in the ’075 Patent that the inventor intended this term to have any special meaning. Finally, while Defendant cites to Dr. Shoemake’s declaration for support for its position that the phrase is indefinite, Plaintiff’s expert, Dr. Palmer, explained to the contrary how “its meaning is clear.” Palmer Declaration, Exhibit F to Doc. No. 60, at ¶ 147. In short, Defendant has not proven a critical fact underlying indefiniteness by clear and convincing evidence. *See Grace Instrument*, 57 F.4th at 1008.

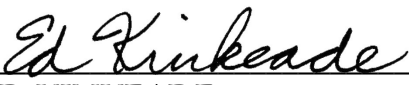
For all these reasons, the Court construes “in which said communications interface is coupled to an external modem” to mean “in which said communications interface is coupled to a modem external to the thermostat system,” where “external” will have its plain and ordinary meaning without any further construction, and the Court concludes that the phrase is not indefinite but reasonably certain.

IV. Conclusion

For the reasons discussed above, the Court construes terms and phrases of the asserted patents as described in this Order and as summarized in the attached charts. In addition, for the reasons discussed above, the Court resolves the parties' disputes regarding the definiteness of these terms and phrases.

SO ORDERED.

Signed September 11th, 2023.



ED KINKEADE
UNITED STATES DISTRICT JUDGE

Claim Constructions - '555 Patent

Term or Phrase	Court's Construction
means coupling said communications interface and said first remote correspondent '555 Patent, Claim 18	Means plus function limitation Function: coupling said communications interface and said first remote correspondent Structure: a serial link, a modem external to the thermostat system, and a communications link completed by an Internet Service Provider, or a modem integrated into the communications interface, a data link, and a communications link completed by an Internet Service Provider, and equivalents thereof Not indefinite
a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom '555 Patent, Claim 18	No construction necessary Plain and ordinary meaning Not indefinite
a control output coupled to the space conditioning equipment for issuing control signals thereto '555 Patent, Claim 18	No construction necessary Plain and ordinary meaning Not indefinite
a communications interface adapted to establish bi-directional communications between said processor and a remote correspondent which is a source of current information '555 Patent, Claim 18	No construction necessary Plain and ordinary meaning Not indefinite
a first remote correspondent which is a source of current information '555 Patent, Claim 18	No construction necessary Plain and ordinary meaning Not indefinite

a program stored in said memory for displaying messages received from said remote correspondent '555 Patent, Claim 18	Means plus function limitation Function: displaying messages received from said remote correspondent Structure: '555 Patent at Fig. 7 or '555 Patent at 5:41-56, and equivalents thereof Not indefinite
which received messages do not pertain to the operation of said thermostat system '555 Patent, Claim 18	No construction necessary Plain and ordinary meaning Not indefinite

Claim Constructions - '739 Patent

Term or Phrase	Court's Construction
storage means '739 Patent, Claim 1	Means plus function limitation Function: Storing a physical location of the environmental controller as location data Structure: memory, and equivalents thereof
a physical location of the environmental controller stored as location data in storage means in the controller '739 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite
transmitter means connected to the controller adapted to transmit location data to a remote device physically remote from the controller so that a location response is induced at the remote device '739 Patent, Claim 1	Means plus function limitation Function: transmitting location data to a remote device physically remote from the controller so that a location response is induced at the remote device

	Structure: a modem with an Internet or network connection, and equivalents thereof
physically remote from the controller '739 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite
location response is storage of the location data at the remote device and correlation of the physical to location response data stored at or available to the remote device or created by processing of location data at the remote device whereafter location response data is transmitted from the remote device to the controller '739 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite
location response is storage of the location data at the remote device and correlation of the physical to location response data stored at or available to the remote device or created by processing of location data at the remote device '739 Patent, Claim 7	Claim 7 is invalid for failing to limit the scope of its independent claim

Claim Constructions - '318 Patent

Term or Phrase	Court's Construction
an input/output unit coupled between said processor and said touch screen for carrying out information transfer therebetween '318 Patent, Claim 1	Means plus function limitation Function: carrying out information transfer between said processor and said touch screen Structure: simple switching circuits (if all correspondents external to the processor are all digital in nature) or switching circuits and an analog-to-digital converter (if at least one correspondent external to the processor is not digital in nature), and equivalents thereof Not indefinite
a sensor input coupled to each said environmental condition sensors for receiving said electrical signal therefrom '318 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite
a control output coupled to the space conditioning equipment for issuing control signals thereto '318 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite
a control program stored in said memory for causing said central processing unit to communicate through said input/output unit to selectively: 1) establish on said liquid crystal display: a) a representation of a first virtual button at a first predetermined position on the liquid crystal display; and b) a first legend indicative of a first control function of said thermostat, which first control function is for controlling a first space conditioning equipment component, which first control function	Means plus function limitation Function: causing said central processing unit to communicate through said input/output unit to selectively: 1) establish on said liquid crystal display: a) a representation of a first virtual button at a first predetermined position on the liquid crystal display; and b) a first legend indicative of a first control function of said thermostat, which first control function is for controlling a first space conditioning equipment

is active when the first legend is viewable; 2) read the position on the touch pad juxtaposed with said first predetermined position on said liquid crystal display to determine if the representation of said first virtual button has been touched; 3) if the first virtual button has been touched: a) determining that the thermostat has been directed to control a second space conditioning equipment component; b) activating a second control function for controlling the second space conditioning equipment component; and c) displaying on said liquid crystal display a second legend indicative of said second control function of said thermostat, which second control function is for controlling the second space conditioning equipment component, which second control function is active when the second when legend is viewable '318 Patent, Claim 1	component, which first control function is active when the first legend is viewable; 2) read the position on the touch pad juxtaposed with said first predetermined position on said liquid crystal display to determine if the representation of said first virtual button has been touched; 3) if the first virtual button has been touched: a) determining that the thermostat has been directed to control a second space conditioning equipment component; b) activating a second control function for controlling the second space conditioning equipment component; and c) displaying on said liquid crystal display a second legend indicative of said second control function of said thermostat, which second control function is for controlling the second space conditioning equipment component, which second control function is active when the second when legend is viewable Structure: none disclosed Indefinite
is been touched again '318 Patent, Claim 4	has been touched again
the graphic '318 Patent, Claims 5, 7, 9, 11	Indefinite

Claim Constructions - '825 Patent

Term or Phrase	Court's Construction
means coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat '825 Patent, Claims 1, 11	Means plus function limitation Function: coupling suitable power for energizing said thermostat from said space conditioning equipment to said thermostat Structure: a power line and an isolation diode, and equivalents thereof
real time clock '825 Patent, Claim 1	No construction necessary
a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom '825 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite
a control output coupled to the space conditioning equipment for issuing control signals thereto '825 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite

Claim Constructions - '075 Patent

Term or Phrase	Court's Construction
means coupling said communications interface and said first remote correspondent '075 Patent, Claim 1	Means plus function limitation Function: Coupling said communications interface and said first remote correspondent Structure: a serial link, a modem external to the thermostat system, and a communications link completed by an Internet Service Provider, or a modem integrated into the communications interface, a data link, and a communications link completed by an Internet Service Provider, and equivalents thereof Not indefinite
means for controlling space conditioning equipment '075 Patent, Claim 4	Means plus function limitation Function: controlling space conditioning equipment Structure: virtual buttons operating with functional programming modules and a control sequence as described in the '075 Patent at 11:7-13:62, and equivalents thereof
a sensor input coupled to said temperature sensor for receiving said electrical signal therefrom '075 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite
a control output coupled to the space conditioning equipment for issuing control signals thereto '075 Patent, Claim 1	No construction necessary Plain and ordinary meaning Not indefinite
functional programming	"Functional programming" does not include data-only transfers

'075 Patent, Claim 1	
a control program stored in said memory for causing said central processing unit to selectively: 1) establish on said liquid crystal display one or more representations of buttons at a separated and predetermined positions; 2) read the position on the touch pad juxtaposed with said predetermined position to determine if said representation of a button has been touched; and 3) if said a representation of a button has been touched, processing this information to establish a condition incorporated into the operation of said thermostat system; 4) establish communications between said processor and a first remote correspondent from which is transferred to said memory one or more modules of functional programming; and 5) operate said transferred functional programming to change or add to representations on the touch screen, where said changes or additions of representation on the touch screen were not available to the control program before their transfer to the memory	Means plus function limitation Function: causing said central processing unit to selectively: 1) establish on said liquid crystal display one or more representations of buttons at a separated and predetermined positions; 2) read the position on the touch pad juxtaposed with said predetermined position to determine if said representation of a button has been touched; and 3) if said a representation of a button has been touched, processing this information to establish a condition incorporated into the operation of said thermostat system; 4) establish communications between said processor and a first remote correspondent from which is transferred to said memory one or more modules of functional programming; and 5) operate said transferred functional programming to change or add to representations on the touch screen, where said changes or additions of representation on the touch screen were not available to the control program before their transfer to the memory
'075 Patent, Claim 1	Structure: none disclosed Indefinite
in which said communications interface is coupled to an external modem	in which said communications interface is coupled to a modem external to the thermostat system
'075 Patent, Claim 3	Not indefinite