United States District Court,
D. Nebraska.

Keith WYCOFF and Reach Electronics, Inc,
Plaintiffs.
v.
MOTOROLA, INC,
Defendant.

Dec. 18, 1997.

Penny J. Berger, Rembolt, Ludtke Law Firm, Lincoln, NE, Edward W. Goldstein, Tobor, Goldstein Law Firm, Houston, TX, Jonathan T. Suder, Friedman, Young Law Firm, Fort Worth, TX, for Keith H. Wycoff plaintiff.

Penny J. Berger, Edward W. Goldstein, Jonathan T. Suder, (See above), for Reach Electronics, Inc. plaintiff.

Kevin Colleran, Cline, Williams Law Firm, Lincoln, NE, Linda S. Resh, Robert G. Krupka, Douglas R. Cole, Christian C. Taylor, Kirkland, Ellis Law Firm, Chicago, IL, William Edward Devitt, Kirkland, Ellis Law Firm, Washington, DC, Roger H. Dusberger, James S. Pristelski, Motorola Inc., Schaumburg, IL, for Motorola defendant.

Kevin Colleran, Cline, Williams Law Firm, Lincoln, NE, Linda S. Resh, Robert G. Krupka, Douglas R. Cole, Christian C. Taylor, Kirkland, Ellis Law Firm, Chicago, IL, William Edward Devitt, Kirkland, Ellis Law Firm, Washington, DC, for Motorola counter-claimant.

Penny J. Berger, Rembolt, Ludtke Law Firm, Lincoln, NE, for Keith H. Wycoff counter-defendant.

Penny J. Berger (See above), for Reach Electronics, Inc. counter-defendant.

MEMORANDUM AND ORDER

STROM**, Senior J.**

Plaintiffs Keith H. Wycoff (Wycoff) and Reach Electronics, Inc. (Reach) filed this action alleging defendant Motorola, Inc. (Motorola) wilfully infringed United States Patent No. 4,419,765 (the '765 patent). Wycoff is the owner of the patent and Reach is a licensee. On November 6 and 7, 1997, this Court conducted a hearing pursuant to Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed.Cir.1995), *aff'd,* 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996) (*Markman I*), for the purpose of construing certain language in Claims 21 and 22 of the '765 patent. Prior to the hearing, the parties submitted the patent, specification, prosecution history, and supporting briefs on each party's proposed claim interpretations. Following the hearing, the parties submitted proposed definitions for disputed terms. This Memorandum Opinion sets forth the Courts interpretation of Claims 21 and 22.

BACKGROUND

The '765 patent claims a signal absence detector used as a battery saving technique in pagers. Pagers are small, battery-operated radio receivers commonly used for personal communication generally consisting of

two components, a receiver and a decoder. In order to personalize their use, pagers operate on a "selective-call" basis. Each pager is assigned a unique address. Radio signals containing an address and a message are transmitted. The receiver collects the radio signal and selectively responds only when the decoder determines that the signal contains that pager's unique address. In order to maximize battery life, the pager is normally in an off or battery-saving state resulting in no power being used. Periodically, a pager powers on to receive radio signals and determine whether any of such signals are intended for that particular pager. If no signal containing the pager's address is present, the pager reverts back to the battery-saving state. The powering on occurs regularly at very frequent intervals, thus, the shorter the on time, the great the battery life.

Prior to the '765 patent, a pager during the power on period would look for the presence of a signal containing that pager's unique address. That is, the power would remain on long enough to determine whether the signal contained the correct address. In order to do this, the entire address was examined. The '765 patent, in general terms, reduces the length of the on time by looking for the absence of a signal containing the pager's unique address. Using this technique, the entire address does not necessarily have to be examined. Rather, the address only needs to be examined long enough to determine the wrong address is present. Thus, the on time is reduced and battery life is extended.

DISPUTED CLAIMS

The parties dispute the meaning of certain terms and phrases contained in Claims 21 and 22. Set forth below are the disputed claims in their entirety, divided into and numbered by element, with the disputed terms and phrases underlined. Specifically, Claim 21 states:

"In a receiver of a modulated incoming signal having a normally inoperative processor circuit that may be rendered operative to process an incoming signal and produce a processed signal including the modulation portion of the incoming signal, the combination comprising [:] [1] a battery-saver circuit for periodically providing a supply voltage to render the processor circuit operative to process the incoming signal, [2] an *absence detector* having an input *coupled* to the processor circuit and having an output *coupled* to said battery-saver circuit, said *absence detector* being responsive to *any processed signal* which is not of a *predetermined character* to *substantially immediately* terminate the supply voltage, and [3] *duration sensor means coupled* to said absence *detector* for producing an output signal when the processed signal has the *predetermined character* for a first *predetermined duration,* and [[[4] *timer means coupled* to said *duration sensor means* and being responsive to the start of the output signal to produce a timer signal persisting for a second predetermined duration, said battery-saver circuit being *coupled* to said *timer means* and being responsive to the timer signal to extend the duration of the supply voltage to the end of the second *predetermined duration*."

Claim 22 states:

"In a selective-call communication receiver of an incoming signal modulated by a *predetermined code* and having a processor circuit that may be rendered operative to process an incoming signal and prduce [sic] a processed signal including the code, the combination comprising[:] [1] a battery-saver circuit for periodically providing a supply voltage to render the processor circuit operative to process the incoming signal, and [2] an *absence detector* having an input *coupled* to the processor circuit and having an output *coupled* to said battery-saver circuit, said *absence detector* including means for detecting whether or not said processed signal includes the *predetermined* code and for terminating the supply voltage *as soon as detection is made* that said processed signal does not include said *predetermined code*."

'765 patent, col. 57, lines 18-57. Several of the disputed terms and phrases are contained in both claims. However, Claim 21 and 22 are independent claims. FN1 Thus, each claim must be read separately when determining their scope. Accordingly, the parties have argued and provided separate definitions specific to

the claim in which each term or phrase is used.

FN1. Claim 21 and 22 each stand on their own and do not refer to any other claim in the '765. Therefore, they are independent claims.

DISCUSSION

A. Claim Interpretation

In Markman v. Westview Instruments, Inc., 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996), the United States Supreme Court affirmed the Federal Circuits ruling in *Markman I* that the interpretation of patent claims is a question of law exclusively within the province of the court. When construing patent claims, the court must "first look to the intrinsic evidence of the record, i.e ., the patent itself, including the claims, the specification, and if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996). The first step in analyzing the intrinsic evidence is "to look to the words of the claims themselves, both the asserted and nonasserted." *Id*. The words in a claim are generally given their ordinary meaning, however, "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history." *Id.;* Hoechst Celanes Corp. v. BP Chems. Ltd., 78 F.3d 1575, 1578 (Fed.Cir.1996), *cert. denied,* 519 U.S. 911, 117 S.Ct. 275, 136 L.Ed.2d 198 (1996). Thus, the second step is to review the specification to determine whether the patentee has employed any terms or phrases in a manner inconsistent with their ordinary meaning. Vitronics Corp., 90 F.3d at 1582. "The specification contains a written description of the invention which must be clear and complete enough to enable those of ordinary skill in the art to make and use the invention" and acts as sort of a dictionary to be used when construing the claims. Markman I, 52 F.3d at 979. The specification "is the single best guide to the meaning of a disputed term." Vitronics Corp., 90 F.3d at 1582. However, the specification cannot enlarge, diminish, or vary the limitations in the claims. Markman I, 52 F.3d at 980. Finally, the last intrinsic evidence the court reviews is the patent's prosecution history. The history contains any express representations made by the applicant regarding the scope of the claims and limits interpretation of terms or phrases so as to exclude any interpretation disclaimed during prosecution. Vitronics Corp., 90 F.3d at 1582. Like the specification, the prosecution history cannot enlarge, diminish, or vary the limitations in the claims. Markman I, 52 F.3d at 980.

In addition to these sources, a court may also consider extrinsic evidence such as expert testimony, dictionaries, and learned treatises. *Id*. However, if an analysis of the intrinsic evidence alone resolves any ambiguity in a disputed claim term or phrase, it is improper for the court to rely on extrinsic evidence. *Vitronics Corp.,* 90 F.3d at 158.

B. Claim 21

The first disputed element in Claim 21 is element 2. The defendant claims element 2 is a means-plus-function element under s. 112 para. 6 of the Patent Act and should be construed accordingly. Section 112 para. 6 states:

"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 such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof."

35 U.S.C. s. 112, para. 6 (means-plus-function statute). "In order to invoke this statute, the alleged means-plus-function claim element must not recite a definite structure which performs the described function." Cole v. Kimberly-Clark Corp., 102 F.3d 524, 531 (Fed.Cir.1996) (*Kimberly-Clark*). Patent drafters

generally create such elements by using the word "means" or the phrase "means for." *Id*. In fact, use of the word "means" in an element gives rise to a presumption that the drafter used the term in order to invoke the means-plus-function statute. Sage Products, Inc. v. Devon Industries, Inc., 126 F.3d 1420 (Fed.Cir.1997). However, mere use of the word "means" does not automatically invoke the means-plus-function statute. *Id.;* Kimberly-Clark, 102 F.3d at 531. For example, an element may use the word "means" and not state any corresponding function, or may state a function but also include detailed recitation of structure. *Id*. Conversely, "merely because an element does not include the word 'means' does not automatically prevent the element from being construed as a means-plus-function element." Kimberly-Clark, 102 F.3d at 531. For example, an element may merely state a function and no specific structure. Finally, whether an element is a means-plus-function element is decided on an element by element basis. *Id*.

Element 2 essentially claims the art of absence detection and its battery-saving benefit to selective-call pagers. Element 2 does not contain the word "means;" however, it clearly states the function of substantially immediately terminating power upon detection of any processed signal which is not of a predetermined character. The plaintiffs' argue that the element also contains structure and, as a result, should not be interpreted as a means-plus-function element. Plaintiffs base their argument on the use of the phrase "absence detector." They argue that absence detector, along with the description "having an input coupled to the processor circuit and an output coupled to said battery-saver circuit" connotes a structure to a person of ordinary skill in the art.

The Court agrees the plain meaning of the element language connotes some structure. However, "the recitation of some structure in a means-plus-function element does not preclude the applicability of s. 112 [para.] 6." Laitram Corp. v. Rexnord, Inc., 939 F.2d 1533, 1536 (Fed.Cir.1991); *See also* York Products, Inc. v. Central Tractor Farm & Family Ctr., 99 F.3d 1568 (Fed.Cir.1996). "Absence detector" was new to the art at the time of the '765 patent. Thus, to one of ordinary skill in the art, the phrase did not denote a specific structure.

Furthermore, because "absence detector" was a new phrase, the patentee could have chosen a specific meaning for the phrase; however, the '765 patent drafter did not clearly define the phrase "absence detector" in the specifications. FN2 Therefore, the terms in the phrase must be given their ordinary meaning. *See* Hoechst Celanes, supra. The noun "detector" refers to a device for indicating condition, referring to some type of structure, and the adjective "absence" indicates the non-presence of a condition, describing the device's function. *Webster's Third New International Dictionary* 616 (1971). The plaintiffs' expert, Mr. Arch Luther, testified at the Markman hearing that the structure connoted "is that of a means of comparison and a means of evaluating the output of the comparative." FN3 Markman Hr'g. Tr., 118: 6-9. The ordinary meaning and Mr. Luther's meaning do not recite specific structure. Mr. Luther further testified that to one ordinarily skilled in the art "detector" does not recite a particular structure, but rather is a class of structures from which one would choose a specific structure after knowing the type of system and signal being used and the specific predetermined character to be detected. This interpretation is supported by the specification in which there is specific structure clearly linked to this element that can be used with a particular system and signal such as a single-tone selective-call pager. This drafting method is consistent with means-plus-function drafting wherein the drafter must describe in the specification structure that corresponds to the function in the claim. This construction is also consistent with the interpretation that the '765 patent may apply to both analog and digital pagers, as discussed below. Finally, the language in the element regarding input from the processor circuit and output to the battery-saver circuit does not recite a definite structure. Rather, said language describes where the processed signal comes from and how the voltage is to be terminated, further specifying the function of being responsive to any processed signal which is not of a predetermined character to substantially immediately terminate the supply voltage. *See* O.I. Corp. v. Tekmar Co. Inc., 115 F.3d 1576 (Fed.Cir.1997); *Laitram Corp., supra*. Thus, element 2 recites a specific function without any definite structure and as a result is a means-plus-function element.

FN2. The '765 patent does give examples of specific structure that "may be viewed as a signal absence

detector" or "is an example of one type of signal absence detector," but does not clearly define "absence detector" or give any indication that it has a special meaning as used in the claims.

FN3. Plaintiffs also argued during the hearing that absence detector "should be construed to cover basically anything that provides the function of detecting the absence of a correct signal ..." Markman hearing transcript, 29: 11-13.

Generally, the Court's next step after determining an element is a means-plus-function element is to look to the specifications to define the structure, material or acts corresponding to the claimed function. Sage, 126 F.3d at 1428 (citing 35 U.S.C. s. 112 para. 6). However, the parties dispute the meaning of certain phrases defining the absence detector element's function, and before the Court can move on, the function must be clarified. The first phrase of real contention is "predetermined character." FN4 The claim language makes it clear that predetermined character refers to a type of processed signal. Ordinarily, predetermined character means "a distinctive differentiating mark ... settled in advance." *Webster's Third New International Dictionary* 376, 1789 (1971). The claim and specification support the use of the ordinary meaning in the '765 patent as that meaning relates to selective-call receivers. *See* York Products, 99 F.3d at 1572. ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning.") Claim 21 refers to an invention used in a receiver of a modulated signal to detect the absence of a specific processed signal. The summary of the invention states: "[i]t is an important object of the present invention to provide a detector which substantially immediately responds to the inception of modulation components to provide an output which terminates when the detector determines that the components do not have a predetermined character. " '765 patent, col. 4, lines 1-8. The specification also refers to, in similar contexts, a processed signal that does not contain a "predetermined modulation component. " '765 patent, col. 4, lines 38-39. In the prosecution history, the patentee distinguished the '765 patent from prior art by pointing out that it does not look for the absence of a specific carrier wave, but looks for the absence of a specific tone or code. '765 patent, Amendment dated December 21, 1981, pg. 20. Finally, element 3 of Claim 21, the duration sensor element which is discussed below, indicates that the predetermined character can be measured by time, as its existence is measured by a "predetermined duration." Therefore, predetermined character means the distinctive differentiating feature of a processed signal, other than the carrier wave, assigned in advance to a pager. The predetermined character is one capable of being measured by time and cannot be the carrier wave itself. To one of ordinary skill in the paging art, the distinctive feature described in the Court's definition of predetermined character would generally be referred to as an "address" and, in fact, the '765 patent prosecution history points out that a receiver generally is inoperative until it receives a particular "address code." Id.

FN4. The defendant contends there is dispute over the interpretation of the phrase "any processed signal" and that it should be given its ordinary meaning. The plaintiffs do not appear to disagree with this interpretation and there is nothing in the claim, the specification or the prosecution history leading the Court to find otherwise. Therefore, any processed signal means just that, any processed signal.

An address may be either in an analog or digital format. The defendant contends that if "predetermined character" does refer to an address, it only refers to analog addresses and does not include the digital addresses used in defendant's pagers. This contention is based on two separate arguments. The first is that both Claims 21 and 22 only apply to analog technology and not digital paging technology. The Court finds Claims 21 or 22 are not limited to analog technology. First, the claims themselves do not contain any such limiting language or indication. Second, the specification does cite as its preferred embodiment analog technology; however, the specification does not limit the claims to analog technology. In fact, the specification indicates that digital circuitry and binary (digital) code is anticipated by the '765 patent. '765 patent, col. 2, lines 22-3; col. 11, lines 4-7. Finally, with respect to means-plus-function elements and the

doctrine of equivalents, the jury may find the digital technology used by defendant is an equivalent of the analog technology cited in the '765 patent.

The second argument defendant makes in support of its contention that its "predetermined character" does not include digital address technology is that a digital address does not exist over a period of time and therefore is not capable of being measured by time. The defendant is essentially comparing the meaning and scope of "predetermined character" to the digital address used by the Motorola pagers and arguing they are not equivalent. This is not a claim construction argument, but is one of infringement which is a question of fact to be left to the jury. *See Markman I, supra*.

The second phrase in Claim 21 element 2 that must be construed is "substantially immediately." Element 2 requires the absence detector "to substantially immediately terminate the supply voltage ." Ordinarily, substantially immediately means "to a large extent ... without delay." *Webster's Third New International Dictionary* 594, 1129, 2280 (1971). The claim, specification and prosecution history do not indicate the phrase has any other special meaning. The interpretations the parties submitted are also in agreement with the ordinary definition of substantially immediately. However, the parties disagree as to what triggers substantially immediate termination. The plaintiffs contend termination is to take place upon detection of the absence of the predetermined character. The defendants submit the triggering event is when the receiver has sufficient information for the pager to detect the absence of the predetermined character. Element 2's function is to be "responsive to any processed signal which is not of a predetermined character." The element indicates it is not enough merely to have a processed signal. In order to respond, it must first be determined that the processed signal is not of a predetermined character. Thus, the claim clearly indicates detection is the triggering event. The specification supports this construction. *See,* e.g., '765 patent, col. 4, lines 4-8 ("... output [[[ ] terminates when the detector determines that the components do not have a predetermined character."); col. 9, lines 49-50 ("... the receiver once turned on will stay on until it is determined that the proper code tone is absent.") Finally, the prosecution history clarifies the construction by pointing out the difference between the '765 patent and prior art is that the '765 patent requires supply voltage only for the time required for the detector to determine the wrong predetermined character is present. *See* '765 patent, Amendment dated July 21, 1982.FN5 Thus, the Court finds the trigger for substantially immediate termination to be the point at which detection of the absence of a predetermined character is made, this point being no later than the time required by the detector to make such detection.

FN5. It should be noted that Claim 21 was approved by the Patent and Trademark Office without any modification. The patentee did however amend Claim 22 to distinguish it from prior art in a manner the Court finds relevant in interpreting Claim 21.

The last term in Claim 21 element 2 to be interpreted before the Court can define the structure corresponding to the absence detector function is "coupled." Both parties agree that coupled means connected. Element 2 does not specify what type of connection is to be used. As previously stated, the portion of element 2 relating to an input coupled to the processor circuit and an output coupled to the battery-saver circuit does not recite specific structure, rather it describes where the processed signal comes from and how the voltage is to be terminated. The defendant argues, however, that based on the structure disclosed by the preferred embodiments in the specification, the connection must be physical. The specification does not specifically define coupled as physically connected, rather coupled is used to describe what components and/or electrical inputs or outputs are connected. The preferred embodiment may consist of a structure with physical connections. However, this does not require the structure of the accused device consist of physical connections, only that the device be equivalent. This construction of coupled also applies to the remaining elements of Claim 21.

A means-plus-function element "shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. s. 112, para. 6. A "structure disclosed in

the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." Braun Medical, Inc., v. Abbott Labs., 124 F.3d 1419, 1424 (Fed.Cir.1997). The specification includes 4 preferred embodiments for the absence detector invention. The first embodiment, analog single-tone, selective-call receiver, clearly links the following structure and acts, stated in two separate passages, to the absence detector function in Claim 21:

(1) "Basically, the filter 40, the comparator circuit 60 and the decay circuit 70 may be viewed as a signal absence detector which responds to any processed signal that has been driven to limiting by the limiter 13 to commence production of a comparator signal that extends the duration of the supply voltage from the battery-saver circuit 20."; and

(2) "The filter 40, comparator circuit 60, the decay circuit 70 and the duration sensor 80 may be considered to be a frequency sensor having a given bandwidth which is an example of one type of signal absence detector that may be employed."

'765 patent, col. 9, lines 65-68; col. 10, lines 51-5 (numbers referring to Figures 1 and 2). Therefore, the above disclosed structure is the structure corresponding to the function in element 2 of Claim 21.

The next element to be construed is element 3 of Claim 21, the duration sensor element. First, the element contains the phrase "means ... for," giving rise to the presumption that it is a means-plus-function element. The phrase "means for" is clearly linked to the function of "producing an output signal when the processed character has the predetermined character for a first predetermined duration." To further clarify the function, the Court finds predetermined character has the same meaning as it did in element 2. Also, prior to the Markman hearing, the meaning of "predetermined duration" was disputed; however, both parties now agree that predetermined duration means a set period of time. The Court finds this interpretation consistent with the meaning in the '765 patent.

With respect to structure in element 3, the plaintiffs contend the phrase "duration sensor" connotes structure, and that, along with "coupled to said absence detector," the element contains enough detailed recitation of structure to overcome the presumption and not fall within the means-plus-function statute. Mr. Luther testified that a person of ordinary skill in the art would consider the words duration and sensor separately in order to interpret the phrase "duration sensor." Sensor would mean "a device which looks for some characteristic of a signal," and duration modifies sensor by indicating the characteristic being look for is a period of time. Markman Hr'g. Tr., 123:12-6. From this interpretation, a structure could be created. Mr. Luther noted, however, that there are several different circuit structures that could be used. Dr. Donald Cox, defendant's expert, testified that duration sensor does not connote a structure to one of ordinary skill in the art. Regardless, the Court does not believe the connoted structure Mr. Luther offered constitutes the detailed recitation of structure required by *Kimberly-Clark, supra,* and its progeny necessary to overcome the means-plus-function presumption. Furthermore, in Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1584 (Fed.Cir.1996), the Federal Circuit indicated that when the means-plus-function presumption arises, connoted structure does not overcome patentee's choice of using means-plus-function language. Therefore, element 3 is a means-plus-function element.

The specification, in describing the preferred embodiment, states as follows:

"the duration sensor 80 ... includes a timing circuit defined by a resistor 81 connected in parallel with a diode 82, and a capacitor connected to the B+ supply voltage. The duration sensor further includes an electronic switch in the form of a NAND gate."

'765 patent, col. 17, lines 1-5 (numbers referring to Figures 1 and 2). This structure is clearly linked to element 3 of Claim 21 and is the structure corresponding to the duration sensor function.

Finally, element 4 of Claim 21 is the timer means element. The use of the term means creates a presumption that this is a means-plus-function element. The function of the means is to be "responsive to the start of the output signal to produce a timer signal persisting for a second predetermined duration ..." Again, timer connotes some structure. However, for the same reasons as discussed with regard to elements 2 and 3, any structure connoted is not of sufficient detail to overcome the means-plus-function presumption. Therefore, element 4 is a means-plus-function element. The corresponding structure in the specification clearly linked to the timer means is "a timing network having a resistor 91 and a capacitor 92 connected in parallel between ground and the input and an electronic switch in the form of a NAND gate. " '765 patent, col. 17, lines 1-5 (numbers referring to Figures 1 and 2).

C. CLAIM 22

Claim 22 consists of a preamble and two elements. The parties dispute the meaning of essentially three phrases in Claim 22: "absence detector," "predetermined code," and "as soon as detection is made." The meaning of the term coupled is also disputed. However, the Court, in agreement with the parties, finds coupled has the same meaning in Claim 22 as it did in Claim 21.

Absence detector is contained in element 2 of claim 22 and is used in the same context as it is in claim 21. Element 2's first clause, "an absence detector having an input coupled to the processor circuit and having an output coupled to said battery-saver circuit," is exactly the same as the first clause in element 2 of Claim 21 and serves the same purpose. The remaining language in element 2 recites the function of "detecting whether or not said processed signal includes the predetermined code and terminating the supply voltage as soon as detection is made that said processed signal does not include said predetermined code." This functional language is prefaced by the phrase "said absence detector including *means for,*" thus, giving rise to the presumption that element 2 is a means-plus-function element. Once again, the plaintiffs contend "absence detector," along with the description "having an input coupled to the processor circuit and an output coupled to said battery-saver circuit," connotes a structure to a person of ordinary skill in the art. The plaintiffs use the same arguments to support their contention in this claim as they did in Claim 21. The Court finds, based on the same reasoning discussed with respect to Claim 21, element 2 of Claim 22 recites a function without reciting sufficient definite structure to over come the means-plus-function presumption and render the means-plus-function statute inapplicable. This finding is further supported by the fact that the patentee used the phrase "means for" in this claim, which presumptively invokes the means-plus-function statute. *See Greenberg, supra*. The absence detector means' corresponding structure is the same structure as recited above with respect to element 2 of claim 21.

The second disputed phrase in Claim 22 is "predetermined code." The plaintiffs argue predetermined code, like predetermined character, is synonymous with address. As stated above, an address can be either analog or digital. The defendant contends that predetermined code does not mean address because predetermined code should be interpreted as referring only to a tone or sequence of tones (analog technology).

The '765 patent intrinsically defines predetermined code. First, Claim 22's preamble states that the claim applies to "a selective-call communication receiver of an incoming signal modulated by a predetermined code ..." In a selective-call communication system "[e]ach [pager] is designed to intercept the same carrier wave, but its alerting circuitry is rendered operative only when the carrier wave is modulated by a predetermined code." '765 patent, col. 2, lines 8-13. Therefore, in a general sense, the predetermined code fulfills the same function as predetermined character did in Claim 21. The predetermined code is the distinctive differentiating feature of a processed signal, other than the carrier wave, assigned in advance to a pager.

Second, claim 22 does not in any way limit the scope of predetermined code as to a tone or sequence of tones. The specification points out that "[t]he code used to signal [a pager] could be binary in nature or a tone signal." '765 patent, col. 2, lines 22-23. Binary code refers to digital code, and tone signal code is "a

single tone, two or more simultaneous tones, or a tone sequence." '765 patent, col. 2, lines 22-25. Even though the preferred embodiments in the specification use analog technology and a tone signal code to illustrate the claims, to the extent equivalents could be used on digital codes, the embodiments do not limit the claim to tone signals only.FN6

FN6. In the prosecution history, the patent examiner stated, "[i]n claim [[22], the predetermined code is a particular tone."'765 patent, Examiner's Action dated September 1, 1981, pg. 5. The patent examiner made the statement when he was comparing Claim 22 to the Ward prior art patent which covered only tone receivers. The statement does not limit predetermined code to include only a particular tone outside of that context..

Finally, the doctrine of claim differentiation neither mandates predetermined code include both analog and digital addresses nor requires predetermined code be limited to include only a tone or sequence of tones. The plaintiffs argue that predetermined code must include digital codes in order to make Claim 22 different from Claims 28 and 30. Claims 28 and 30 are identical to Claim 22 except that Claim 28 uses "tone" instead of code and Claim 30 uses "sequence of tones" instead of code. Plaintiffs overlook the fact that even if predetermined code was interpreted to not include digital codes, Claims 28 and 30 would still be different from Claim 22 because predetermined code could mean tone or sequence of tones. The defendant argues Claims 23, 26 and 27, which depend on Claim 22, require predetermined code not include digital codes because Claims 23, 26 and 27 use language that narrows the definition of predetermined code to logically include only a tone or sequence of tones. Claims 23, 26 and 27 are narrower than Claim 22 because they require the absence detector means to include specific structure. The Claim 22 absence detector element is a means-plus-function element that claims the specific structure in the specification and equivalents thereto. The fact that later dependent claims require the absence detector means being implemented in the respective claim to include specific structure that may relate only to analog codes does not change the meaning of predetermined code in Claim 22. Further, "where some claims are broad and others are narrow, the narrow claim limitations cannot be read in the broad" in order to escape infringement. Transmatic, Inc. v. Gulton Indus., Inc. 53 F.3d 1270 (Fed.Cir.1995) (quoting *D.M.I., Inc. v. Deere & Co.,* 75 F.2d 1570, 1574 (Fed.Cir.1985)).

Therefore, the Court finds predetermined code as used in Claim 22 would be interpreted by one of ordinary skill in the art to mean the distinctive differentiating feature of a processed signal, other than the carrier wave, assigned in advance to a pager. The predetermined code can be binary, a tone, or a sequence of tones.

The final phrase to be construed in Claim 22 is "as soon as detection is made." The parties' dispute regarding this phrase is essentially the same as their dispute regarding "substantially immediately." That is, the parties agree that "as soon as" means "without delay," but dispute what triggers the termination of the supply voltage. *Webster's Third New International Dictionary* 133, 1129 (1971). The language of Claim 22 is clear. The absence detector means is to terminate the supply voltage "as soon as detection is made that said processed signal does not include said predetermined code." The trigger is the detection of the absence of the predetermined code. The prosecution history supports this construction, wherein the patentee pointed out Claim 22 was different from prior art because the supply voltage is on only for the time required for the detector to determine the wrong code is present. '765 patent, Amendment dated July 21, 1982, pg. 9. Therefore, the Court finds "as soon as detection is made" means supply voltage is terminated immediately after the time required for the detector to detect that the processed signal does not include the predetermined code.

CONCLUSION

IT IS ORDERED that Claims 21 and 22 of the '765 patent shall be construed as set forth above in this Memorandum Opinion.

D.Neb.,1997.
Wycoff v. Motorola, Inc.

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