United States District Court,
C.D. California.

BROADCOM CORP,
v.
QUALCOMM INC.

No. SACV 05-467-JVS(RNBx)

Sept. 11, 2006.

Attorneys Present for Plaintiffs: Not Present.

Attorneys Present for Defendants: Not Present.

Court-Filed Expert Resumes

JAMES V. SELNA**, J.**

Karla J. Tunis Deputy Clerk

Not Present Court Reporter

Proceedings: (In Chambers) Order re Claim Construction

Plaintiff Broadcom Corporation ("Broadcom") has instituted the instant patent infringement action against Defendant Qualcomm Incorporated ("Qualcomm"). Broadcom contends that Qualcomm has infringed U.S. Patent Nos. 5,657,317 ("the '317 patent"), 6,389,010 ("the '010 patent"), 6,847,686 ("the '686 patent"), 6,285, 865 ("the '865 patent"), and 5,425,051 ("the '051 patent"). 6,096,341 ("the '341 patent"). The relevant claim language is construed by the Court as set forth in Section II, below.

I. LEGAL STANDARD

It is well settled that claim construction is "exclusively within the province of the court." Markman v. Westview Instruments. Inc., 517 U.S. 370, 372 (1996). Such construction "begins and ends" with the claim language itself, Interactive Gift Express, Inc. v. Compuserve. Inc., 256 F.3d 1323, 1331 (Fed.Cir.2001), but extrinsic evidence may also be consulted "if needed to assist in determining the meaning or scope of technical terms in the claims." Pall Corp. v. Micron Separations. Inc., 66 F.3d 1211, 1216 (Fed.Cir.1995).

In construing the claim language, the Court begins with the principle that "the words of a claim are generally given their ordinary and customary meaning." Phillips v. AWH Corp., 415 F.3d 1303, 1312 (Fed.Cir.2005) (internal quotation marks omitted). Further, this ordinary and customary meaning "is the meaning that the [claim] term would have to a person of ordinary skill in the art in question at the time of

the invention i.e., as of the effective filing date of the patent application." Id. at 1313. "[T]he person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Id*.

"In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Id*. at 1314. In these circumstances, general purpose dictionaries may be useful. *Id*. In other cases, "determining the ordinary and customary meaning of the claim requires examination of terms that have a particular meaning in a field of art." *Id*. In those cases, "the court looks to those sources available to the public that show what a person of skill in the art would have understood the disputed claim language to mean," including "the words of the claims themselves, the remainder of the specification, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." (*Id;* internal quotation omitted.) If, and only if, the intrinsic evidence is not sufficient for determining the acquired meaning, then extrinsic evidence may be consulted. Interactive Gift Express v. CompuServe. 231 F.3d 859, 866 (Fed.Cir.2000).

The claim terms are not presumed to have the meaning that a person of ordinary skill in the relevant art would ordinarily attribute to them if (1) the patentee acts as his own lexicographer, or (2) the claim term is too vague for an accurate meaning to be ascertained from the language used. Novartis Pharms. Corp. v. Abbott Labs., 375 F.3d 1328, 1334 (Fed.Cir.2004). All that is required for a patentee to act as his own lexicographer is that a different meaning is set out in the specification in a manner sufficient to provide notice of the meaning to a person of ordinary skill in the art. In re Paulsen, 30 F.3d 1475, 1480 (Fed.Cir.1994).

Pursuant to 35 U.S.C. s. 112, para. 6, a claim element can be expressed as a means for performing a specified function. Construing a means-plus-function term is a two-step process. JVW Enterprises. Inc. v. Interact Accessories. Inc., 424 F.3d 1324, 1330 (Fed.Cir.2005). First, the Court must determine the claimed function. *Id*. (internal citations omitted). A court may not adopt a function different that recited in the claim. *Id*. at 1331. Second, the Court identifies "the corresponding structure in the written description that performs that function." *Id*. at 1330. In order "to qualify as corresponding, the structure must not only perform the claimed function, but the specification must clearly associate the structure with performance of the function." *Id*. at 1332 (internal citations omitted).

With these principles in mind, the Court now turns to the construction of the claim language at issue.

II. ***DISCUSSION***

A. ***The*** '317 Patent

The '317 patent, entitled Hierarchical Communication System Using Premises, Peripheral, and Vehicular Local Area Networking, recognizes that when a user of a mobile device roams from one base station coverage area, the user will not be able to communicate with a new base station area without "obtaining and synchronizing to the new parameters." ('317 patent, 2 :35-39.) According to the patent, this can cause a backlog in communication. (Id.) Similarly, a user may desire to maintain communication with multiple networks at the same time. The '317 patent therefore claims a device capable of communicating with "different communication parameters and protocols." (Id., 4:34-37.)

1. ***Radio Unit-Claims 1, 6, 9, 12, 28***

The first disputed term in the '317 patent is "radio unit." Broadcom defines "radio unit" using a description of what the radio unit is capable of doing and urges this Court that its definition is consistent with the ordinary meaning of the term. Qualcomm's construction is based not on what the "radio unit" does but rather what it is allegedly composed of-a control processor, a memory device, and a transceiver.

Each party's proposed claim construction of "radio unit" is as follows:

Broadcom's Construction	Qualcomm's Construction
Equipment capable of transmitting and/or receiving information in the form of electromagnetic radio waves without using wires.	A single radio unit which has a control processor, a memory device, and a transceiver.

To support its construction, Broadcom points the specification's description of Figure 37 "as an exemplary block diagram of a radio unit capable of concurrent communication on multiple LANs," FN1 comprising transmitting circuitry and receiving circuitry, a frequency generator circuit, an antenna switching circuit, a control processor, and memory. (Broadcom Opening Br., p. 7, citing ' 317 patent, 55 :39-56 :57.) According to Broadcom, these components constitute equipment capable of transmitting and/or receiving information in the form of electromagnetic radio waves.

FN1. Local Area Network

Qualcomm contests Broadcom's construction stating that the definition is not within the ordinary meaning of the term "radio unit." Rather, according to Qualcomm, in the radio communications field, a radio unit is just a receiver. (Qualcomm Reply Br., p. 16, citing Forys Dep., 77:22-78:16, attached to Cote Decl. Ex. K.)

This objection is not well-taken. According to Dr. Leonard Forys, one of Qualcomm's experts, the term "radio unit" can have a very different meaning depending upon the context. (Id.) For example, while in the field of radio communications, the term "radio unit" would mean receiver, in the field of mobile communications, a "radio unit" would include a receiver and a transmitter. (Id.) In so stating, Dr. Forys essentially concedes that in the field of mobile communications, a radio unit both transmits and receives. Although the term's meaning may vary if radio communications were at issue, the patent at hand deals with mobile communications. Accordingly, the parties agree that, in the field of mobile communications, a "radio unit" means a device capable of transmitting and receiving.

Qualcomm further contends that its construction should be favored over Broadcom's construction because Broadcom's definition fails to list out the component parts of a radio unit, including a control processor, a memory device, and a transceiver. The Court, however, finds this argument faulty because although these three components are listed in Claims 1,6, 9, and 12; the radio unit described in Claim 28 does not list these three components. Moreover, the language in the specification cited to by Qualcomm does not require the presence of these three components, but rather states that "a roaming computing device may have a single radio unit which has a control processor, memory, and a transceiver." ('317 patent, 6 :29-32.) As Broadcom correctly notes, this language states what an embodiment may have, not what it must have.

Broadcom additionally disputes Qualcomm's definition because it restricts radio units to a single device,

whereas no such requirement is described in the patent. Broadcom, however, overlooks the fact that the patent refers to a "unit," which implies a single device-regardless of the components within the device.

In Texas Digital Systems. Inc. v. Telegenix, Inc., 308 F.3d 1193 (Fed.Cir.2002), the Federal Circuit indicated that claim terms should be given their ordinary meaning, unless there is a compelling reason why they should not be given their ordinary meaning. Given that a radio unit in the field of mobile communications implies the ability to send and receive and the use of the term "unit," the Court adopts the following construction: a unit capable of transmitting and receiving information in the form of electromagnetic waves without using wires.

This construction does not read the term "radio unit" out of the patent as Qualcomm contends. It simply reflects the fact that a radio unit in the present context must have the capabilities of a transceiver, but does not restrict a radio unit to just those capabilities.

2. *Transceiver-Claims 1, 6, 9, and 12*

Broadcom's Construction	Qualcomm's Construction
Equipment capable of transmitting and receiving radio frequency communications.	A component in the radio unit that is capable of both transmitting and receiving electronic signals.

The parties' dispute regarding the proper construction of the term "transceiver" turns on whether, as Qualcomm contends, a single component within the radio unit transmits and receives, or whether the specification does not require this limitation, as Broadcom asserts. According to Broadcom, Figure 37 and its accompanying disclosure depict separate components-one set of circuitry that transmits and one set of circuitry that receives. ('317 patent, 55 :37-67; Figure 37.) Accordingly, one skilled in the art would understand transceiver as having separate equipment rather than being a single component, even if the transmitter and receiver are within a unitary component.

Qualcomm, on the other hand, asserts that a transceiver is necessarily a single, "integrated **combination** of a transmitter and a receiver." (Qualcomm Reply Br., p. 17, citing Forys Decl., Exh. C., BCMSA007392 (emphasis in original).) Rather, according to Qualcomm, Figure 37 does not show different receiving and transmitting components. (Qualcomm Reply Br., p. 18, n. 11.) Moreover, Qualcomm contends that the claimed invention in the '317 patent is directed to a radio unit with a single transceiver capable of communicating with two networks. (Qualcomm Opening Br., p. 26, citing '317 patent, 6 :29-34; 12 :42-46; 63 :15-33; 64 :43-61.) Qualcomm concludes by averring that extrinsic evidence supports its definition-namely that the IEEE Standard Dictionary of Electrical and Electronics Terms ("IEEE Dictionary") defines transceiver as "the combination of radio transmitting and receiving equipment in a common housing" and a related patent defined radio transceiver as "a component capable of transmitting and receiving radio frequency signals in one unit." (Qualcomm Opening Br., p. 27 & n. 10, citing Forys Decl., Exh. C at BCMSA007392 and Su Decl., Exh. B.)

The Court finds that Broadcom's construction is closest. First, the Court notes that Broadcom's interpretation of Figure 37 and its related disclosure described separate equipment performing the separate functions. Moreover, the Court finds that the IEEE definition actually supports Broadcom's construction because it recognizes separate transmitting and receiving equipment, even if in common housing. Finally, simply because one skilled in the art would recognize economic efficiencies in utilizing common circuitry (Qualcomm Opening Br., p. 26), this does not mean that the '317 patent calls for such a construction of the

term "transceiver." Nonetheless, so as to differentiate the transceiver from the radio unit, the Court finds it necessary to modify Broadcom's construction.

Broadcom also disputes Qualcomm's construction for its requirement that the transceiver be capable of transmitting and receiving electronic signals as opposed to radio frequency communications. According to Broadcom, because the transceiver is within the radio unit, it must be capable of transmitting and receiving radio frequency communications. Qualcomm does not discuss this issue in its moving papers. The Court agrees with Broadcom and finds that a transceiver must be capable of transmitting and receiving radio frequency communications and not electronic signals.

For the reasons stated above, the Court finds it necessary to adopt its own definition of transceiver. Accordingly, in light of the principles of *Markman* construction, a transceiver is: equipment that is part of a radio unit that is capable of transmitting and receiving radio frequency communications.

3. *Memory Device [Storing] Communication Protocols-1, 6, 9, and 12*

In Claims 1, 6, and 9, the '317 patent disclose "a memory device which stores a plurality of communication protocols." Claim 12, on the other hand, discloses a "memory device storing the first and second communication protocols." Each party's proposed claim construction is as follows:

Broadcom's Construction	Qualcomm's Construction
A designated space for storing information which stores a plurality of operating procedures for taking part in communications.	An electronic memory which contains the software procedures for communicating on two or more [RF/wireless] communication networks.

Broadcom contests Qualcomm's construction as being too narrow. First, Broadcom asserts that the limitation to electronic memory contradicts the specification. According to Broadcom, the patent does not specify what kind of memory and that one skilled in the art would know that memory can take many forms. (Exh. F, Stuber Decl., para. 46.) Qualcomm does not respond to this argument. Rather, Qualcomm counters that Broadcom's definition is too broad and vague because it describes mere "designated space," which potentially reads "device" out of the patent. The Court agrees with Broadcom that the patent specification does not limit memory to electronic memory, but rather, memory can "be any type of memory" capable of storage. ('317 patent, 56 :31-33.) Nonetheless, the Court also agrees with Qualcomm that the term "designated space" is too broad, given that the asserted Claims do use the word "device."

Additionally, Broadcom contends that the term "communication protocols" is not limited to software (volatile) procedures, but rather operating procedures may be stored in non-volatile memory, referred to as firmware. (Broadcom Opening Br., p. 9; Broadcom Reply Br., p. 4.) Broadcom asserts that while operating procedures are stored in volatile memory such as random access memory, they are referred to as software; operating procedures stored in non-volatile memory such as magnetic storage, they are called firmware. (Id.) According to Broadcom, both volatile and non-volatile types of memory fall within the specifications definition of memory. Qualcomm, on the other hand, asserts that communication protocols are properly limited to software. (Qualcomm Opening Br., p. 27, citing '317 patent, 56 :1-5; 56 :31-33; Figure 42.)

The '317 patent does disclose "software routines stored in memory" ('317 patent, 56 :1-3), as well as "memory could be any type of memory unit(s) or device(s) capable of software storage" (Id., 56:31-33). Moreover, Figure 37 explains that the control processor selects which LAN to communicate with by

"[r]esponding to the software routines stored in the memory." (Id., 56:17-18.) Most persuasively, though is Figure 42, which "illustrates further detail of some of the storage requirements of the memory 3522 of Fig. 37." (Id., 56:58-59.) In that specification, the patent explains that the memory stores "a plurality of software protocols, one for each LAN/WAN to be supported." (Id., 56:64-65.) These citations seem to indicate that the specification limits the information stored to software. On, the other hand, the specification also notes that operating procedures may be stored in any type of memory-"memory 3522 contains routines which define a series of protocols for concurrent communication on a plurality of LANs." (Id., 56:3-5.) This would seem to allow storage in both volatile and nonvolatile memory-in other words, as software or firmware. Any tension is harmonized if one views firmware as a subspecies of software.FN2

FN2. The IEEE Dictionary definition set forth by Broadcom, supports this determination. According to the IEEE dictionary, firmware is mere software that is stored in a "class of memory that cannot be dynamically modified." (Massa Decl., Exh. B, p. 316.) In other words, firmware is software stored in non-volatile memory.

Because this Court has already determined that the patent allows for any kind of memory, to limit communication protocols to software would have the effect of limiting the type of memory that would satisfy the Claims at issue. For the sake of consistency, the Court declines to include the term "software" in the construction. In other words, to use the term "software" would indicate that the information could only be stored in volatile memory; however, the Court has already determined that memory is not restricted to volatile memory.

Qualcomm contests Broadcom's construction because Broadcom's construction fails to recognize the purpose behind the communication protocols-which, according to Qualcomm, is to govern radio operation on one of the many communication networks. Qualcomm is concerned that, under Broadcom's construction, a mere portion of a protocol could satisfy the limitation. The Court agrees that Broadcom's language "taking part in communications" does miss the purpose behind the '317 patent, which is to be able to communicate on two or more communication networks and that with out this delineation, Broadcom's construction is too broad.

Accordingly, the Court finds it adopt its own construction of the disputed term. In light of the principles set forth in *Markman* and *Phillips,* the Court construes the term as follows: a device used for storing information, which stores a plurality of operating procedures for communicating on two or more communication networks.

4. ***Simultaneous Participation-Claims 1, 6, 9, and 12***

In Claims 1, 6, and 9, the patent discloses

a control processor coupled to the transceiver and the memory device, the control processor selecting from the memory device ones of the plurality of communication protocols to enable the transceiver to simultaneously participate on corresponding ones of the plurality of wireless communication networks.

('317 patent, 63 :24-29; 63: 65-64 :3; 64 :28-33.) Additionally, Claims land 12 disclose a "control processor managing the simultaneous use by the radio unit of the first and second communication protocols." (Id., 63:31-33; 64:59-61.) Claim 12 further discloses a transceiver "capable of participation" on both

communication networks, and a radio unit "participating on the first RF communication network ... while simultaneously participating on the second RF communication network." (Id., 63:53-57.)

The patent at issue discloses a device that is capable of communicating with more than one network. The questions presented by the parties' constructions are whether the radio unit device must be actively participating in more than one network at a time and when participating in more than one network, whether the participation must occur at exactly the same instant or interleaved at such a quick rate that the user perceives the communications as simultaneous. Each party's proposed claim construction is as follows:

Broadcom's Construction	Qualcomm's Construction
Capable of taking part in communications during the same period of time.	Active communications with two or more [RF/wireless] communication networks at the same point in time.

a. ***Participating***

Broadcom contests Qualcomm's use of the term "active communications," arguing that the patent does not require active communication, but rather recognizes that a transceiver may be actively participating on one network while in "sleep mode" on other networks. (Broadcom Opening Br., p. 10.) According to Broadcom, the transceiver is still participating, albeit not actively, when in sleep mode. (Id. citing '317 patent, 59 :67-60 :29; 60 :6-7.) Broadcom concedes that a transceiver would have to establish active participation status to communicate with a network, but nonetheless contends that sleep mode is participation. (Broadcom Opening Br., p. 10.) Qualcomm asserts that the specification and the Claims themselves refer to active communication. (Qualcomm Opening Br., p. 29.)

Moreover, Qualcomm contests Broadcom's use of the term "capable of" participating. (Id.) Qualcomm notes that the patent claims distinguish between devices capable of participating on a network and devices that actually do participate. (Id.) To construe participating as "capable of participating," according to Qualcomm, would read "capable of participating" out of the asserted Claims. (Qualcomm Reply Br., p. 20.) Qualcomm argues that it is simply improper to extend participation to periods of sleep mode, especially because the '317 patent does not identify sleep mode as a form of participation. (Id.)

Figure 43 illustrates the operation of the control processor of Figure 37. In the specification, the patent explains that the control processor first determines whether the radio unit must communicate with an additional network. "If such additional participation is needed ... the radio unit may register sleep mode operation with other participating LANs ...." ('317 patent, 60 :5-9.) The patent does not say that when entering sleep mode, the radio unit ceases to participate, but rather refers to the first network as participating. The Court interprets this to mean that mere entering of sleep mode does not end participation. Accordingly, active participation is not required. Nonetheless, defining participating as a capability to participate would render meaningless the differences in the Claim language. Rather, the Court construes participation to include both active and sleep-mode periods.

b. ***Simultaneous***

Broadcom contends that the patent inventors used the terms "simultaneous" and "concurrent" interchangeably to describe interleaved communications by a radio unit on multiple networks within a given period of time. (Broadcom Opening Br., p. 10, citing '317 patent, Figure 34.) Rather, according to Broadcom, when the patent describes communications at exactly the same time, it uses the term "fully

simultaneous." (Broadcom Opening Br., pp. 10-11, citing '317 patent, 12 :50-13 :9.) As Broadcom explains the patent, the radio unit enters sleep mode with the first network as it communicates with the second network, and back again. This interleaving occurs so rapidly within a period of time that the user perceives simultaneous or concurrent communication.

Qualcomm contests Broadcom's construction as contrary to the ordinary meaning of the word "simultaneous" as well as its usage in the patent. (Qualcomm Reply Br., p. 19, citing '317 patent, 27 :30-32; 12 :46-49.) Rather, Qualcomm, relying on Figure 34 for its construction as well, contends that Figure 34 discloses that communications occur at the same time. (Qualcomm Opening Br., p. 28, citing '317 patent, 53:42-47.) Qualcomm further asserts that the patent distinguishes between concurrent and simultaneous participation. (Qualcomm Opening Br., p. 29, citing '317 patent, 11:15-20, 12:42-46, 13:1-8; 55:38-40.)

The question really turns on whether Figure 34 shows a device communicating on multiple networks at the same time or interleaved. Block 3273 of Figure 34 represents the moment where two networks seek to communicate with the device at the same time. The specification notes

If the master has two radio transceivers, the master can service both networks. If, however, the master only has one radio transceiver, the master chooses to service one network based on network priority considerations.

('317 patent, 53 :46-50.) Thus contrary to Qualcomm's assertion, Figure 34 does not show a device with one transceiver communicating with two networks at the exact same time. As both parties concede that the patent discloses a device with one transceiver, this description of Figure 34 supports Broadcom's assertion that the communications are actually interleaved.

Moreover, as Broadcom notes, the patent uses the language "fully simultaneous" when describing a device containing more than one transceiver. (Id., 12:50-13:9.) Thus, the term "simultaneous," in contrast to "fully simultaneous," must describe a time period broader than "the same point in time" (Qualcomm's construction); to construe otherwise would make redundant the term "fully." Additionally, as Qualcomm concedes, according to the patent, actual simultaneity requires multiple transceivers. (Qualcomm Reply Br., p. 19, citing '317 patent, 12 :42-54.) However, because the '317 patent claims a radio unit with a single transceiver, and because a single transceiver cannot achieve full communication with two networks at the same time, Qualcomm's construction could mean that the patent would not perform its stated function. Accordingly, the Court agrees with Broadcom that the construction "during the same period of time" most accurately construes the meaning of the term simultaneous.

In sum, the Court adopts the following construction of "simultaneous participation": Taking part in communications with two or more networks either actively or in sleep-mode during the same period of time.

5. ***Spontaneous Communication Network-Claim 16***

Claim 16 describes "[t]he communication system of claim 12 wherein the second RF network is a spontaneous communication network ." Each party's proposed claim construction is as follows:

Broadcom's Construction	Qualcomm's Construction
An ad hoc communication network that exists for a limited time and is formed when at least	A wireless local area network automatically established for a limited period of time for the specified purpose of

two network devices establish direct communication with each other	allowing portable devices to communicate information to a local area network.

The specification of the patent states that

a spontaneous wireless local area network or spontaneous LAN is one that is established for a limited time for a specific purpose, which does not use the premises LAN to facilitate communications between devices or provide access to outside resources.

('317 patent, 36 :22-26.) The specification goes on to explain the differences between a spontaneous LAN and a premises LAN, including the number of devices the LAN can support, power limitations, and the prevalence of the types of communications. (Id., 36:34-37:7 .) The patent also states that a spontaneous LAN "comes into existence when two or more devices establish communications, and ceases when its population falls to less than two." (Id., 37:45-47.) Communications, and thus the spontaneous network, are established by the devices themselves.

Broadcom asserts that Qualcomm's construction is faulty because it requires the spontaneous network to be a LAN. According to Broadcom, the '317 patent merely discloses the spontaneous LAN as one type of communication network. (Broadcom Opening Br., p. 13, citing '317 patent, 9 :56-65.) Broadcom's criticism, however is not well-taken. In fact, as Qualcomm notes, the '317 patent only describes "spontaneous communication networks" as spontaneous LANs, and never as a wide area network. (*See* '317 patent, 9:56-65.)

Broadcom asserts that other claims in the patent, such as Claim 35, use the term "spontaneous LAN," and for reason "spontaneous communication network" must not be limited to a LAN. In the context of the patent, however, it is clear that the spontaneous network must be a LAN. If the language in Claim 35 appeared in a claim dependent on Claim 16, Broadcom's position would be bolstered. Here, the context prevails over any claims differentiation argument.

With principles of construction in mind, the Court finds the following construction to be the most accurate: An ad hoc local area network established for a limited period of time and for a specific performance, and is formed when two or more devices establish communications with each other.

6. ***Peripheral Communications Network-Claim 17***

The '317 patent explains that sometimes a spontaneous communication network will include peripheral devices, in which case it is termed a peripheral communication network. Claim 17 discloses "the communication system of claim 16 [spontaneous communication network] where in the spontaneous communication network is a peripheral communication network."

Each party's proposed claim construction of "peripheral communication network" is as follows:

Broadcom's Construction	Qualcomm's Construction
A spontaneous communication network that is operable over short ranges and includes at least one peripheral device.	A type of spontaneous local area network which serves as a short range interconnect between a mobile device and one or more peripheral devices, such as printers, code scanners, magnetic card readers, or input stylus.

As was the case above, the parties dispute whether the peripheral communication system should be limited to a LAN (as opposed to allowing for a wide-area network communication system as well).

The patent notes that constituents of a premises LAN may also "contain facilities ... for communicating with their peripherals via the separate low power, short range radio LAN, hereinafter a peripheral LAN or MicroLAN." ('317 patent, 5 :28-32.) The patent goes on to explain that a peripheral LAN is a "spontaneous LAN created between the computing devices and peripheral devices." (Id., 10:12-15.) A peripheral LAN is "intended to provide communication between two or more devices operating within near proximity." (Id., 11:1-3.) Finally, the patent explains that "A peripheral LAN is a type of spontaneous LAN which serves as a short range interconnect between a portable or mobile computing device (MCD) and peripheral device." (Id., 39:39-42.) As above, every reference to a peripheral network states that it is a LAN.

Nonetheless, Broadcom asserts that importation of the LAN requirement is a mere preferred embodiments and in fact the patent does not require such a limitation. For the reasons stated above, the network must be a LAN.

Still, the Court finds that Qualcomm's construction is faulty in that it limits the types of peripheral devices to printers, code scanners, magnetic card readers, or input stylus. Rather the patent is clear that this list is non-exhaustive. (Id., 10:55-57 ("Peripheral devices **may** be printers, code scanners, magnetic card readers, or input stylus, **etc.**") (emphasis added); 2:49-50 ("Many different peripheral devices also exist, such as printers, modems, graphic scanners, text scanners, code readers, magnetic card readers, external monitors, voice command interfaces, external storage devices, and so on").)

Accordingly, the Court adopts the following construction: spontaneous local area communication network that is operable over short ranges and includes at least one peripheral device.

7. "*Registers with the first RF communication network that the radio unit will not be participating on the first RF communication network*"-Claim 28

Claim 28 discloses a communication system, wherein the radio unit is configured to be able to communicate with two RF systems. When the radio is within range of the first network, it communicates with that network. Similarly, when the radio unit is in range of the second network, it communicates with the second network. However,

when in range of both the first and second plurality of network devices, the radio unit participates on the second RF communication network only after the radio unit registers with the first RF communication network that the radio unit will not be participating on the first RF communication network.

('317 patent, 66 :18-23.)

The parties' construction is as follows:

Broadcom's Construction	Qualcomm's Construction
Indicates to the first RF communication network that the radio unit will not be capable of taking part in communications on the first RF	The radio unit sends a message to the first RF communication network that the radio unit will no longer be taking part in communications on the first RF

communication network. communication network.

As Broadcom notes, Claim 28 does not require simultaneous participation on two networks. Rather a roaming mobile device will remain attached to the base station of the first RF network until it is out of range and the link quality becomes unacceptable. At that point, the roaming device will detach from the first network and attach to a new base station that is within range. ('317 patent, 43 :3-24.)

The parties' dispute revolves around two issues: (1) does the mobile device have to send a message to the first network that it is detaching or does the patent teach roaming through the use of an algorithm; and (2) is the message that the device will not "be capable of communicating" with the first RF network or that it simply will "no longer communicate." The Court will address each argument in turn.

Broadcom contends that the patent teaches that the device detaches by initiating a roaming algorithm and that although the device may send out a message, the patent does not require this to occur. (Broadcom Opening Br., p. 14; Broadcom Reply Br., pp. 7-8.) Qualcomm contends that by using the word "register," the patent requires an affirmative act, in other words, sending a message that the device will detach. (Qualcomm Opening Br., p. 31; Qualcomm Reply Br., p. 23.) For support, Qualcomm states that the embodiment disclosed in Figure 43 requires " 'when a portable terminal [*i.e.,* mobile computing device] desires to operate on a shorter range vehicular LAN ...,' it may be required 'to inform the premises LAN that it is *detaching* [from it] and can only be accessed through the vehicular LAN." (Qualcomm Opening Br., p. 31, quoting '317 patent, 60 :41-45, emphasis in Opening Brief.) Qualcomm's reliance on this statement is misplaced because the specification specifically states that "the portable device **may** be required by the protocol of the premises LAN to establish active communication on the premises LAN to permit the radio unit to inform the premises LAN that it is detaching." ('317 patent, 41-45, emphasis added.) The specification is clear that a protocol of the premises LAN **may** require a communication that the device is detaching; the language of the specification does not indicate that this is the only means for detachment to occur.

Moreover, the patent teaches that "different device operating scenarios dictate different roaming strategies." ('317 patent, 31 :13-15.) For example, a device operated from a high capacity vehicular power system, once signal strength drops below a roaming threshold, "will initiate a search for an alternative NET." (Id., 31:35-37.) "If roaming is indicated, the device initiates a Roaming Algorithm." (Id., 31:42-43.) Further, the patent teaches that "the radio unit may implicitly detach at a block 3923 if the protocol of the LAN from which the radio wishes to detach requires no action by the radio unit." (Id., 60:33-36.) Accordingly, the Court agrees with Broadcom that sending a message is not required by the patent.FN3

FN3. Qualcomm implicitly acknowledges this point by noting that two things, including sending a message, must occur "[i]n this embodiment." (Qualcomm Opening Br., p. 31.)

Qualcomm disputes Broadcom's use of the words "will not be capable of taking part in communications." According to Qualcomm, if Broadcom insists that sleep-mode is still a form of participation with respect to Claims 1, 6, 9, and 12, then Broadcom should not be able to assert that sleep-mode means "not actively participating" when construing Claim 28. This argument too is misplaced. There is a difference between sleep-mode and detaching. Sleep-mode reflects the status of participation when two networks seek to communicate with the device at the same time and the device enters sleep-mode with the first network so that it may communicate with the second network. In that instance, the device does not detach from the first

network. The device disclosed in Claim 28, however, is not necessarily directed to simultaneous communication between the two networks, but rather addresses the circumstance where the device loses the signal from the first network, and therefore detaches from that network. In other words, as the citations from the specification above indicate, detaching may occur when the signal drops below a threshold such that the device will not be capable of communicating any longer with the first network. Or detaching may occur when a device simply ceases to operate on a shorter range LAN and thus chooses to detach. In either case, the device detaches and will no longer be capable of communicating on the first network.

For these reasons, the Court adopts Broadcom's construction.

B. ***The*** '010 Patent

1. "*network having a predetermined allocated bandwidth*" *and* "*network having a variable bandwidth*"- *Claim 1*

In Claim 1, the '010 Patent discloses "[a] telephone for use with a first network having a predetermined allocated bandwidth and a second network having a variable bandwidth...." ('010 Patent, 102:4-6.)

The parties propose the following constructions:

	Broadcom's Constructions	Qualcomm's Constructions
"network having a predetermined allocated bandwidth"	Network having a predetermined fixed bandwidth (e.g., a circuit-switched voice communication network).	A network that provides a dedicated user-to-user communication channel over which data is transmitted at a constant rate.
"network having a variable bandwidth"	Network in which the available bandwidth varies (e.g., a packet-switched voice communication network).	A network that provides a shared communication channel over which data can be transmitted at a variable rate.

The parties disagree on two points.FN4

FN4. Broadcom refers to a third point of disagreement, namely, that Qualcomm argues that the boundary of a network with a predetermined allocated bandwidth extends from the microphone of one user's phone to the speaker of the other's. (Broadcom Reply Br., p. 10.) However, this argument is not evident from Qualcomm's construction, and the Court does not read their brief to argue this. (*See* Qualcomm Opening Br., p. 33.) Regardless, the Court does not construe the boundary of the network to be so broad.

a. ***Shared or Dedicated***

Qualcomm argues that because sharing a network can result in varying transmission rates, a variable bandwidth network must necessarily be shared. (Qualcomm Opening Br., p. 34.) However, the Court agrees with Broadcom that a network with a predetermined allocated bandwidth can use a shared communication channel (*see* La Porta Dep., pp. 146-47, 152, 193-94, attached to Massa Reply Decl ., Ex. C), and that a network with variable bandwidth does not necessarily have to be shared (*see* Id., pp. 143, 145).

The Court declines to construe either term to require that the network be shared or dedicated to a pair of users.

b. ***Definition of "bandwidth "***

The primary dispute is over the definition of "bandwidth." Broadcom contends that bandwidth means the maximum data capacity of the network that can be used (Broadcom Opening Br., p. 18), whereas Qualcomm contends that bandwidth means the rate at which data are actually transmitted through the network (Qualcomm Opening Br., p. 35).

The Court has reviewed Qualcomm's citations to the intrinsic evidence, and finds nothing to support its proposition that bandwidth is the rate at which data are actually transmitted. Furthermore, Qualcomm's reference to the Peterson and Davie treatise clarifies the distinction between bandwidth and "throughput":

A useful distinction might be made, however, between the bandwidth that is available on the link and the number of bits per second that we can actually transmit over the link in practice. We tend to use the word *throughput* to refer to the *measured performance* of a system. Thus, because of various inefficiencies of implementation, a pair of nodes connected by a link with a bandwidth of 10 Mbps might achieve a throughput of only 2 Mbps.

(Larry L. Peterson & Bruce S. Davie, *Computer Networks: A Systems Approach* s. 1.2.4 (Norman Kaufmann Publishers, Inc.1996), attached to La Porta Decl. of Apr. 24, 2006 (emphasis added).) It thus appears that Qualcomm has confused "bandwidth" for "throughput" in its construction.

Other intrinsic evidence also supports Broadcom's construction of bandwidth as data capacity of a network or communication channel, or a metric therefor. (*See, e.g.,* '010 Patent, 2:30-31 ("[p]acket by packet, the data is transmitted as channel bandwidth becomes available"); 2:32-37 ("disabling a channel by dedicating bandwidth to service only a pair of participants"); 100:52-55 ("attempting to minimize overall bandwidth usage").)

At oral argument, Qualcomm asserted that the word "available" in Broadcom's construction of variable bandwidth leads to potential ambiguity. The Court declines to delete the word. It connotes capacity at a given instant, not throughput.

In light of the intrinsic and extrinsic evidence, the Court construes the word "bandwidth" to mean: capacity on a particular data channel to accommodate data transmission, or a metric therefor. Having so defined bandwidth, the Court adopts Broadcom's constructions of the disputed terms.

C. ***The*** '686 Patent

The '686 patent, entitled Video Encoding Device, claims a digital signal processor for video encoding. The '686 patent is a continuation of U.S. Patent Number 6,385,244 ("the '244 patent"), which the parties agree, has an identical specification. The '244 patent claims a video encoding system, which is comprised of, among other components, a global controller and a digital signal processor. ('244 patent, 15 :31-46, attached Massa Opening Deck, Exh. K.) The '244 patent also claims a "video encoding device according to claim 1 wherein said digital signal processor comprises:" a DSP controller, a plurality of processing units and at least one storage unit, and where the DSP controller controls the plurality of processing units. (Id., 18:3-15.)

In comparison, the '686 patent claims a "digital signal processor for processing a multiple frame video

digital signal." ('686 patent, 16:5-7.) It does not describe the digital signal processor in the claim in the context of a video encoding device. Moreover, while the digital signal processor is described in the '686 patent with the exact same language of the '244 patent, the inventors added the following language to differentiate the '686 patent from prior art: "wherein said DSP controller, said plurality of processing units, and said at least one storage unit are on a single chip." ('686 patent, 16:5-22; Colwell Deck, Exh. I, pp. 4-5; Exh J, p. 5.)

1. ***Digital Signal Processor***

Broadcom's Construction	Qualcomm's Construction
A video encoding component for processing digital video data.	Programmable special-purpose processor designed for processing digital signals (*e.g.,* audio, image and video).

The parties agree that the function of the digital signal processor is to process digital signals/data. The parties disagree, however, on the following three considerations: (1) is the digital signal processor a component of a video encoding device or is it a stand alone device; (2) must the digital signal processor be programmable; and (3) must the digital signal processor be special-purpose. The Court will address each dispute in turn.

Broadcom asserts that, although a video encoding device is not claimed, the patent specification is clear that the digital signal processor is a component of a video encoding device. According to Broadcom, this construction is supported by the prosecution history, which reveals that the '686 patent is, as mentioned above, a continuation of the '244 patent, which does claim a digital signal processor that is a component of the video encoding system. (Broadcom Opening Br., p. 19.) Moreover, Broadcom asserts that the specification repeatedly refers to the digital signal processor in conjunction with the other components of the video encoding device. (Broadcom Reply Br., p. 11, citing '686 patent, 5:58-67, Title, Abstract, and Summary, Figure 3, Figure 7.) Qualcomm, on the other hand, contends that because the '686 patent contains no recitation in its claims of a video encoding device, it is improper to limit the digital signal processor to being a component of such as device. (Qualcomm Opening Br., p. 4.) Qualcomm asserts that this is important because the referral to the video encoding device was specifically left out in the '686 patent as compared to the '244 patent. (Id.)

The Court agrees with Broadcom that the digital control processor is properly construed as a component of a video encoding device. First, claim terms common to related patents are to be construed consistently. *NPT,* Inc. v. Research in Motion. Ltd., 418 F.3d 1282, 1293 (Fed.Cir.2005). Accordingly, if the Court were to construe a digital signal processor in the '686 patent as a stand alone device, then it would be so construed in the '244 patent. This, however, would be contrary to the express language of the '244 patent. Second, although the Court notes that the video encoding device is absent from the claim language of the '686 patent, the same cannot be said for the Title, Abstract, Figures, and Specification, all of which are intrinsic evidence to be relied upon in construing a term. Phillips, 415 F.3d at 1314. For example, the Abstract begins: "Video encoding device including a video input processor, ..., a global controller, ... a motion estimation processor, a digital signal processor, and a bit-stream processor ...." ('686 patent, Abstract.) Figures 3 and 4 are illustrations of a video encoding device, which depict a digital signal processor as a component. (Id., Figures 3-4.) The specification describes Figure 7 as "a schematic illustration in detail of the digital signal processor, of the video encoding device of Fig. 3." (*Id.,* 5:14-17.) Finally, the specification describes the digital signal processor in part in terms of how it relates to the other components of the video encoding device. (*Id.,* 6:62-64.) The Court finds that this language conclusively

dictates that the digital signal processor is a part of the video encoding device.

Next, Broadcom contests Qualcomm's addition of the limitation "programmable" to the construction. Qualcomm has added this term based on the portion of the specification that states that the processor can "operate in two modes: a programming mode and an operational mode." (*Id.,* 10:44-45.) According to Broadcom, one skilled in the art would understand "programmable" to refer to the ability of the digital signal processor to receive and execute new programs. (Broadcom Opening Br., p. 20, citing Massa Decl., Exh. N, para. 3.) Broadcom asserts that there is nothing in the specification that indicates that the processor must be capable of being programmed with additional control programs. (Broadcom Reply Br., p. 12.) In other words, merely because the processor has a programming mode, does not mean it is capable of receiving new or additional control programs. (*Id.,* citing Massa Decl., Exh. N, para. 3.) Qualcomm counters that one skilled in the art would in fact understand that a device that has a programming mode is in fact programmable. (Qualcomm Reply Br., p. 1.) According to Qualcomm, expanding the processor to include hard-wired (non-programmable) circuits would cover a concept not found in the patent. (*Id.*)

As the Court understands it, Broadcom fears that the addition of the word "programmable" suggests that the digital signal processor is capable of receiving new programs, and not that it allows users to execute functions of existing programs. To that extent, the Court finds Broadcom's fear rational as no where in the patent specification does it cite a limitation that the processor be capable of receiving new programs. On the other hand, in as much as the specification states that the processor has a programming mode, the Court would agree that it is capable of receiving data and control parameters and the Court agrees that the patent does not specify whether the digital control processor can or cannot accept new programs. Because of the capability of receiving new programs is not recited in the specification, and because that is a definition applied by at least some skilled in the art (Massa Deck, Exh. N, para. 1), the term "programmable" should not be included. The Court finds Broadcom's microwave analogy apt and informative.FN5 The Court is reluctant to add an ambiguity to a construction.

FN5. The microwave can be "programmed" to cook for a certain period at a certain power setting. It is not capable of receiving a new instruction set.

Finally, Broadcom contests Qualcomm's limitation of the digital signal processor to a "special-purpose processor." Qualcomm asserts that because the specification states that the "general-purpose processors" of the prior art were inefficient in executing encoding procedures, the patent teaches that the digital signal processor seeks to improve on this disadvantage and is thus special purpose. (Qualcomm Opening Br. p. 4, citing '686 patent, 2:13-18; Qualcomm Reply Br., p. 2.) Broadcom asserts that merely citing the disadvantages of a prior art is not a sufficient disclaimer of general-purpose processors from the scope of the claims. (Broadcom Opening Br., p. 21, citing Northrop Grumman Corp. v. Intel Corp., 325 F.3d 1346, 1355 (Fed.Cir.2003).)

Federal Circuit precedent is clear: "absent a clear disclaimer of particular subject matter, the fact that an inventor may have anticipated the invention would be used in a particular way does not mean that the scope of the patent is limited to that context." *Id.* (citing Telefex, Inc. v. Ficoso N. Am. Corp., 299 F.3d 1313, 1328 (Fed.Cir.2002)). Applied to the patent at issue, merely describing the disadvantages of a prior art does not indicate an intent to disclaim the ability to function as that prior art. In other words, just because the inventors described the problems associated with general-purpose processors in the Background of the Invention, does not mean that the inventors intended the digital signal processor to be special-purpose.

Absent such a clear disclaimer, the Court is not prepared to limit the digital signal processor to being a special-purpose processor. *See* Northrop, 325 F.3d at 1355.

For the foregoing reasons, the Court finds that Broadcom's construction most accurately defines "Digital Signal Processor."

2. "*DSP controller controlling said plurality of processing units* "

The parties dispute both the term "DSP controller" as well as "DSP controller controlling said plurality of processing units." The Court will address each term in turn.

a. *DSP Controller*

Broadcom's Construction	Qualcomm's Construction
A controller that controls units that process data.	A DSP component whose primary purpose is to distribute control instructions to be executed by the plurality of processing units and receive data processed by the processing units.

Broadcom contests Qualcomm's construction on the basis that it lists the DSP controller's primary functions (as seen by Qualcomm): to distribute control instructions and to receive data. According to Broadcom, the patent does not limit the DSP controller to those two functions, but rather a control unit can be a DSP controller "even if it has other purposes." (Broadcom Reply Br., p. 14.) This argument is not well-taken: merely because the construction includes two primary purposes, it does not at all indicate that the DSP controller cannot perform other functions. Nonetheless, the Court agrees with Broadcom that the controller does perform other functions such as receiving data from the global controller and other processing procedures ('686 patent, 10:62-67; Colwell Decl., Exh. K, para. 37), and the patent does not list receiving data and distributing control functions as primary functions, rather merely as functions.

Moreover, the Court finds Broadcom's next contention persuasive. FN6 Broadcom asserts that although the preferred embodiment can receive data, it is improper to limit the claim to the feature of a preferred embodiment. (Id.) In the detailed description of Figure 7, the patent states that the controller "distributes control instructions to the processing units ... and receives processed data from each of these units." ('686 patent, 11:1-3.) Ordinarily, claims are not limited to the preferred embodiment disclosed in the specification, Interactive Gift Express, 231 F.3d at 874. Rather, words of a claim are generally given their ordinary and customary meaning. Phillips, 415 F.3d at 1312. To add the function of "receipt of data" to a device called a "controller" merely because the preferred embodiment permits receipt of data would contravene these principles of *Markman* construction. The Court therefore declines to adopt Qualcomm's construction.

FN6. The parties agree that the DSP controller does distribute instructions to the processing units. (Broadcom Opening Br., p. 22; Qualcom Proposed Construction.)

Nonetheless, the Court will not adopt Broadcom's construction either for the following reason. Qualcomm asserts, and the Court agrees, that Broadcom's construction is too broad. As Qualcomm notes, the construction "a controller that controls units that process data" also covers the local controllers of the other components of the video encoding device such as motion estimator processor.

Accordingly, the Court finds it necessary to provide its own construction. In light of the principles of *Markman* and *Phillips,* the Court construes DSP controller as: a component FN7 of the DSP that, among other functions, distributes control instructions to the plurality of processing units.

FN7. The role of the global controller is discussed below.

b. ***DSP controller controlling said plurality of processing units***

Broadcom's Construction	Qualcomm's Construction
Under the direction of a global controller, the DSP controller controls units that process data.	DSP controller distributes control instructions to be executed by the plurality of processing units.

Here, the focus of the parties's dispute is whether the DSP controller must work under the direction of the global controller or as an independent component. Qualcomm contends that because the '686 patent, as compared to the '244 patent does not claim a global controller, Broadcom's construction improperly imports a claim limitation. Qualcomm asserts that to include "under the direction of the global controller" would add ambiguity because the bounds of the "global controller" are unknown. (Qualcomm Reply Br., p. 2.) Broadcom, on the other hand, asserts that because the DSP controller does not operate independently but rather is a part of the video encoding device, which operates under the direction of a global controller, it necessarily follows that the DSP controller too would operate under such direction. (Broadcom Reply Br., p. 14.)

The Court agrees with Qualcomm's conclusion but for different reasons. Having parsed the language of the specification, the Court notes as follows. First, as mentioned above, the digital signal processor itself is a part of the video encoding device. Second, the patent specifically states that the "[G]lobal controller controls and schedules ... the digital signal processor." ('686 patent, 7:9-12.) The digital signal processor comprises a DSP controller. (Id., 16:9.) When the digital signal processor is in the programming mode, "the global controller 110 (Fig.3) transfers data and control parameters to/from master controller 250." (Id., 10:47-49.) "The master controller 250 can independently program each processing unit." (Id., 10:49-51.) The Court interprets these specifications to mean that the DSP controller both operates under the direction of the global controller but can also independently send instructions to each processing unit. For this reason, the Court cannot adopt Broadcom's construction.

At oral argument, Broadcom contended that Qualcomm's construction was insufficient because it did not capture the fact that the DSP controller operates under both the direction of a global controller and independently. To capture the fact that the DSP controller can operate independently or at the behest of the global controller, the Court adopts the following construction: The DSP controller, either independently or under the direction of a global controller, distributes control instructions to be executed by the plurality of processing units.

3. "***Plurality of processing units [ ] for processing said multiple frame video digital signal*** "

Broadcom's Construction	Qualcomm's Construction
Units that process multiple frame video data by performing discrete-cosine transformation (DCT), inverse-DCT (IDCT), quantization,	Two or more identical units, each of which is programmable to process multiple frame video data by performing discrete-cosine transformation (DCT), inverse-

inverse quantization, frame type decisions, or the like.	DCT (IDCT), quantization, inverse quantization, or frame type decisions.

Here, the focus of the parties' dispute is whether the processing units must be identical and programmable, as asserted by Qualcomm. Taking the issue of "identical" first, Qualcomm cites to the Background, where the specification states that the DSP processor 50 "includes a plurality of identical processing units." ('686 patent, 2:44-45.) Qualcomm, however, seems to disregard the fact, that the DSP processor 50, referenced in Figure 2, is known in the art, and, in fact, is labeled prior art. (Id., 2:40-42; Figure 2.) Qualcomm seems to argue that because Figure 2 labels its processing units "P.U.I" and the specification states that processor 50 includes identical processing units "P.U.," then "P.U.1. refers to the prior art and "P.U." refers to the claimed invention. This rationale does not hold water. As Broadcom's expert noted, the processing units in Figure 2 are all labeled P.U.I to indicate that they are identical. (Expert Report of Dr. Clark, attached to Colwell Deck, Exh. K, para. 39.) This is as compared to Figures 7 and 8, both of which are preferred embodiments of the invention, which label each processing unit (P.U.) with a different number, *e.g.* P.U.1, P.U.2, etc. (Id.; '686 patent, Figures 7 and 8.) The Court interprets this to mean that the processing units in the claimed invention need not be identical.

Second, Broadcom contests the use of the word "programmable" for the same reasons discussed with the respect to the construction of the term "Digital Signal Processor." For the same reasons as above, the Court denies applying the term programmable to the processing units. As with the digital signal processor, to the extent that programmable means capable of receiving and executing new programs but excluding processing units with a set of fixed programs, the Court finds nothing in the specification that indicates that the processing units are programmable. Accordingly, the Court declines to adopt Qualcomm's construction and instead adopts the construction proposed by Broadcom.

D. *The* '865 Patent

The '865 patent addresses the tuning of receivers by adjusting electronic filters that allow only desired signals to pass. ('865 patent, Abstract.) The specification describes the use of a dummy filter to determine the correct parameters to allow the desired signals to pass. Those parameters are used to set the operative filter used to tune the receiver. (Id., 1:60-2:12.) The patent teaches two inventions: (1) the dummy filter is tuned first and then the parameters are transferred to the operative filer, and (2) the dummy filter and operative filter are tuned simultaneously. (Id., 31:16-18; 34:46-49.)

1. "*Means for selecting a number of the first plurality of capacitors to adjust the first filter to a desired frequency* "

Broadcom's Construction	Qualcomm's Construction
Function: selecting a number of the first plurality of capacitors to adjust the first filter to a desired center frequency.	*Function:* selecting a number of the first plurality of capacitors to adjust the first filter to a desired center frequency.
	Corresponding structure:
Corresponding structure: Oscillator, phase detector (e.g., 31:1-16) and	A. A reference frequency signal (2508) generated by a narrowband PLL B. Phase detector (2510), including a Gilbert multiplier / mixer (2520) and a low pass filter (2522) for generating a signal indicating the phase

equivalents.	differential between a reference signal input supplied to the "first adjustable on-chip filter" (2506) and the output from the "first adjustable on-chip filter" C. Zero crossing comparator (2516) for detecting when there is zero phase difference between the reference frequency input to the "first adjustable on-chip filter" and the output from that filter, and D. Counter 2504 for incrementing the amount of discrete capacitance selected by control lines 2526.

The parties agree that this is a means-plus-function element, requiring the Court to identify the function and the corresponding structure. JVW Enterprises, 424 F.3d at 1330-32. Though the parties agree on the function, they dispute which structure is properly associated with that function. This dispute is based on an interpretation of the claim language. On the one hand, Broadcom asserts that Claims 1 and 6 require sequential tuning and that Qualcomm has improperly associated a structure that performs simultaneous tuning-the invention disclosed in Claim 12. Qualcomm, on the other hand, contends that Claim 1 does not in fact limit the invention to sequential tuning but rather allows for both sequential and simultaneous tuning. The Court agrees with Qualcomm that Claim 1 is not limited to a sequential tuning device. Rather, as Qualcomm points out, because Dependent Claim 6 narrows "transferring means" to sequential tuning, to interpret Claim 1 as allowing only sequential tuning would render Dependent Claim 6 superfluous, which is disfavored. Versa Corp. v. Ag-Bag, Int'l, 392 F.3d 1325, 1329-30 (Fed.Cir.2004). FN8

FN8. Though claim differentiation cannot broaden claims beyond their original scope, Kraft Foods, Inc. v. Int'l Trading Co., 203 F.3d 1362, 1368 (Fed.Cir.2000), the Court sees no other plausible interpretation of Claim 1 given the language of Dependent Claim 6.

Having determined that Claim 1 is not limited to the sequential method of tuning, the Court must now identify which structures perform the stated function. As the federal circuit has noted, where a patent discloses alternative structures for performing a recited function, the proper claim construction identifies all the structures. Ishida Co. v. Taylor, 221 F.3d 1310, 1316 (Fed.Cir.2000). Because Claim 1 claims both methods, a sequential structure and simultaneous structure must be identified.

Here, Broadcom's proposed structure describes the components necessary to perform sequential tuning: the local oscillator and the phase detector. Qualcomm contends that these two circuits alone cannot perform the stated function. According to Qualcomm, although the phase detector and oscillator do play a role in identifying when the dummy filter has been tuned, these circuits do not control number of capacitors selected for the dummy filter. (Qualcomm Reply Br., p. 5.) The Court does not agree. Rather, the specification describes that the "control circuit is a phase detector and on-chip oscillator to which the operative filter is to be tuned." ('865 patent, 31:6-8.) The patent teaches that the output of the local oscillator and dummy filter are coupled with the inputs of the phase detector to sense the difference in frequencies. The output of the phase detector is then coupled with the dummy filter to adjust the bank of capacitors to tune the dummy filter. (*Id.,* 31:9-18.) Once the dummy filter is tuned, the state of its capacitor bank is transferred to the operative filter. The Court finds that this language clearly indicates that the phase detector and local oscillator are responsible for selecting the number of capacitors in the sequential tuning system.

Qualcomm introduces the structure that performs the selection of the capacitors in a simultaneous tuning

system. Figure 25 discloses a counter 2504 that "controls the application of the switched capacitors." (*Id.,* 33:53-54.) This counter adds capacitors until the desired center frequency is met. (*Id.,* 34:38-40.) As Qualcomm notes, the structure also includes a reference frequency signal, a phase detector, and a zero crossing capacitor that select the number of capacitors. (Id-, 34:5-42.) Control lines then switch the capacitors to the dummy filter and operative filter simultaneously. (*Id.,* 34:46-49.) The Court finds that Qualcomm's proposed structure specifically performs the stated function in a simultaneous tuning system.

Because proper claim construction identifies all structures that can perform the function, Ishida, 221 F.3d at 1316, the Court adopts both Broadcom's and Qualcomm's proposed structures.

2. "***Means for transferring the selection of the first plurality of capacitors to the second plurality of capacitors to adjust the second filter to a center frequency proportional to the desired frequency*** "

Broadcom's Construction	Qualcomm's Construction
Function: transferring the selection of the first plurality of capacitors [the selection of capacitors that was made by the "means for selecting" to adjust the first filter to the desired frequency] to the second plurality of capacitors to adjust the second filter to a center frequency proportional to the desired frequency	Function: transferring the selection of the first plurality of capacitors to the second plurality of capacitors to adjust the second filter to a center frequency proportional to the desired frequency.
Corresponding structure: Components between the first and the second filter (see, e.g., Figs. 24a and 24b, and '865, 31:13-18, 44-47, 56-59) and equivalents	Corresponding structure: This function is performed by the control lines 2526 (shown in Fig. 25) that select switchable capacitors in both the "dummy" and the "operative" filters. If the "operative" filter is to have the same center frequency as the "dummy," then the values of the capacitors in each filter that are selected by control lines 2526 should be identical, other things being equal. If the operative filter is to have a center frequency that is a fixed ration to that of the dummy, then the value of the capacitors in the operative filter that are selected by control lines 2526 should be at the fixed ratio with the value of the capacitors in the dummy filter that are selected by the same control lines.

The parties agree on the stated function.FN9 As above, the parties disagree on the appropriate structure. First, the Court notes that Broadcom's proposed structure cannot be adopted. As Qualcomm points out, Broadcom merely identifies unnamed components in Figures 24a and 24b. Figure 24b is mere a flowchart that does not show components and Figure 24a shows one signal connection. Moreover, the portions of the specification cited to do not reveal any components. The Court agrees with Qualcomm and finds Broadcom's structure to be without meaning and unhelpful.

FN9. Broadcom's bracketed portion is irrelevant given the Court's finding that Claim 1 is not limited to sequential tuning,

Nonetheless, as explained above, Qualcomm's proposed structure is acceptable insofar as it explains the transferring means in a simultaneous tuning system. FN10 Though the Court agrees that the control lines do perform the function of transferring the selection of capacitors, the Court does not adopt Qualcomm's structure in so far as it incorporates Figure 25, which is limited by the specification to the simultaneous tuning system.

FN10. The Court notes that Qualcomm's construction in the Amended Joint Claim Construction is different that the construction provided in Broadcom's moving papers. The construction considered is the one provided in the Amended Joint Claim Construction.

Accordingly, the Court adopts the following structure: control lines that select switchable capacitors in both the "dummy" and the "operative" filters.

E. ***The*** '051 Patent

The '051 patent claims a system that adjusts the parameters of a network to address the wide range of operating conditions that effect the network, such as fading. ('051 patent, Abstract.) The parameters that may be adjusted include

the length and frequency of the spreading code in direct sequence spread spectrum communications; the hop frame length, coding, and interleaving in frequency-hopping spread spectrum communications; the method of source encoding used; the data packet size in a network using data segmentation.

(Id.; *See also* Id., 2:30-36.)

1. ***An RF data communication system having spread spectrum capability for collecting and communicating data (Claim 1): A data communication system having spread spectrum capability for collecting and communicating using RF data signal transmission (Claim 6): An RF data communication system for collecting and communicating data (Claim 24)***

Broadcom's Construction	Qualcomm's Construction
An RF data communication system having spread spectrum capability for collecting and communicating data	A system that gathers and brings together data transmitted as RF signals from a plurality of RF transceivers.

a. ***Disclaimer***

Though Qualcomm initially asserted that Broadcom's construction improperly reclaimed a disclaimed invention, it appears from the Amended Joint Claim Construction, that Qualcomm has abandoned this argument and has acceded to Broadcom's position on this issue. (Amended Joint Claim Construction ["AJCC"], Exh. C, p.l, n.l.) At oral argument, Qualcomm asserted that the Court had misunderstood the footnote in the AJJC. Qualcomm asserted that it no longer contended that Broadcom had disclaimed the general application of the patent to cellular systems, but just the particular device described by Kaufmann. As discussed in more detail below, Broadcom's discussion of Kaufmann was not general disclaimer. In fact it was no disclaimer at all-either of cellular systems in general or the device described by Kaufmann. Qualcomm position fails.

In an initial review by the Patent and Trademark Office, the claims of the '051 patent were rejected under 35 U.S.C. s. 102(b) as anticipated by Hans Kaufmann, et al. In response, the inventor of the '051 patent cancelled the claims and submitted new claims. In so doing, the inventor described the new claims as "directed to an RF data communications system having a base station and a mobile terminal, wherein, based on an evaluation of channel conditions, characteristics of the communication channel are modified." (Sklar Decl., Exh. E3, p. 9.) The patentee went on to explain

In contradistinction, the Kaufmann et al. reference neither discloses nor suggests a means for evaluating channel conditions and the adjusting of the communication parameters set forth in the newly added claims. Instead, the Kaufmann et al. reference is directed to a cellular spread spectrum radio transmission system wherein each coverage area or cell contains a base station which utilizes a set of spreading codes to manage communication within that cell. The base station allocates available spreading codes to pairs of mobile stations so that multiple communication exchanges are capable of coexisting in a single cell. The present invention as set forth in the newly added claims is not directed to such functionality.

(Id., pp. 9-10.) In response, the patent examiner allowed the claims.

Qualcomm contends that this statement operates as a disclaimer of a cellular spread spectrum system. Broadcom, however, asserts that in stating the above, the inventor explained to the patent office that while the new invention has the ability to evaluate channel conditions and adjust communication parameters, this capability was absent in the Kaufmann device. Broadcom contends that the statement that the claimed invention was not directed to the Kaufmann device (which according to Broadcom is a cellular system that has a particular set of spreading codes), was not an intention to disclaim **all** cellular spread spectrum systems. In other words, a cellular spread spectrum system that met all of the elements of the claims of the '051 patent was never disclaimed. (Broadcom Reply Br., pp. 19-21.)

In construing claims, a court may rely on the prosecution history as a basis to exclude an interpretation that was disclaimed during prosecution. Phillips, 415 F.3d at 1317. "Disclaimers based on disavowing actions or statements during prosecution, however, must be both clear and unmistakable." Sorensen v. Int'l Trade Comm'n, 427 F.3d 1375, 1378-79 (Fed.Cir.2005) (quoting Omega Eng'g. Inc. v. Raytek Corp., 334 F.3d 1314, 1326 (Fed.Cir.2003)). The Court agrees with Broadcom that the statement above does not amount to a clear disclaimer of all cellular spread spectrum systems that meet the elements of the '051 patent. Rather, the inventor, as Broadcom explains, merely differentiated between the Kaufmann device which could not evaluate network conditions and adjust parameters and the '051 patent device which can. The statement does not amount to a clear and unambiguous waiver. As Broadcom noted in its oral argument, disclaimer applies to items that fall within the claims of a patent. The Kaufmann device, because it does not evaluate and adjust, does not fall within the claims of the '051 patent.

b. ***Spread Spectrum / Claim Preambles***

Next, Qualcomm contends that a reading of the preambles of the asserted claims requires a construction that limits spread spectrum to direct sequence and excludes frequency hopping so as to avoid reclaiming the disclaimed functionality described above.

The patent claims as follows:

1. An RF data communication system having spread spectrum capability for collecting and communicating

data, comprising:

...

said base station and said mobile terminal being responsive to said evaluating means for selectively adjusting the length of the spreading code used by the transceivers.

...

6. A data communication system having spread spectrum capability for collecting and communicating data using RF data signal transmission, comprising:

...

said base station and said mobile terminal being responsive to said evaluating means for selectively adjusting the frequency of the spreading code used by the transceivers.FN11

FN11. The Court notes that Claim 24 does not refer to the use of spread spectrum.

('051 patent, 21:45-74; 22:4-14.)

"In considering whether a preamble limits a claim, the preamble is analyzed to ascertain whether it states a necessary and defining aspect of the invention, or is simply an introduction to the general field of the claim." On Demand Mach. Corp. v. Ingram Indus., Inc. v. Ingram Indus., Inc., 442 F.3d 1331, 1343 (Fed.Cir.2006). In other words, the inquiry is whether the preamble is "necessary to give life, meaning and vitality to the claims or counts." *Id*. (quoting Kropa v. Robie, 38 C.C.P.A. 858, 187 F.2d 150, 152 (1951)). In *On Demand,* the preamble was "high speed manufacture of a single copy of a book" and the invention was a method to manufacture a single book copy. 442 F.3d at 1334, 1342. The court held that the preamble was a limitation because it stated the framework and purpose of the invention. Id. at 1343. The Federal Circuit noted that the preamble "stated the totality of [the] limitations" and therefore limited the claim to the subject matter of the preamble. *Id*. Here too, the preambles state the framework of the '051 patent by claiming a data communication system with spread spectrum capability for collecting and communicating data. However, the Court cannot say that it gives "life, meaning and vitality" to the claims because the preamble does not mention the adaptive capabilities of the claimed system. The Court, therefore, does not find that the preambles limit the construction of "spread spectrum."

Qualcomm further asserts that the term "spread spectrum," while ordinarily does refer to both direct sequence and frequency hopping, in the context of Claims 1 and 6 of the '051 patent, must be limited to direct sequencing. FN12 Qualcomm so asserts because the patent claims the limitation of a base station and mobile terminal that is responsive to the evaluation either by adjusting the length of the spreading code or the frequency of the spreading code, both of which describes direct sequence spread spectrum. Broadcom, however, asserts that "length" and "frequency" refers not only to direct sequence but also to frequency hopping. The Court agrees with Broadcom. First, the patent does not state that the base station and mobile device respond by adjusting the length of the wave. Rather, by saying the length or frequency of the spreading code, the authors recognized that in both direct sequence and frequency hopping, the boundaries of the signal are broadened-in direct sequence by spreading the signal over greater frequency and in

frequency hopping by hopping over a broader range of frequencies. Thus the Court does not interpret the preamble to be limited to direct sequence spread spectrum. FN13

FN12. As the Court understands it, in a prior construction of spread spectrum, Qualcomm advocated a plain meaning interpretation that would include both direct sequence and frequency hopping. (Massa Decl., Exh. P., p. 1.) In that proceeding, Broadcom asserted that although the patent referred to "spread spectrum," the invention must be limited to CDMA signals based on the context provided in the specification. (Cote Decl., Exh. F., pp. 4-5.)

FN13. Moreover, the Court notes that in Claim 11, the authors clearly limited the preamble to frequency hopping. Thus, if the authors wanted to limit Claims 1 and 6 to direct sequence, they could have done so.

c. *Collecting and Communicating*

Broadcom contests Qualcomm's changing of the phrase "collecting and communicating data" to "gathers and brings together data transmitted as RF signals from a plurality of RF transceivers." According to Broadcom, Qualcomm's construction improperly adds the limitation of gathering and bringing together data and improperly eliminates the requirement of communication. (Cox Decl., para. 2, attached to Massa Decl., Exh. O.) Rather, according to Broadcom, communicating and collecting are readily understood and do not require construction. (Broadcom Reply Br., p. 20.)

Qualcomm, on the other hand, asserts that the specification repeatedly refers to collection as data gathering. (*See e.g.* '051 patent, Abstract; 1:54-58; Figure 12.) Nonetheless, the Court also agrees that Qualcomm's construction fails to address the term "communicating." Though Qualcomm asserts that it uses "communicating" to mean the "transmission of data from a source to a destination, neither requiring nor precluding ***two-way transmission,***" (Qualcomm Reply Br., p. 7 quoting Cox Dep., pp. 129:1-130:20, attached to Cote Decl., Exh. D (emphasis in Reply Brief)), the Court does not find this definition in Qualcomm's proposed construction. Because Qualcomm construes a term out of the patent, its construction cannot be adopted.

Qualcomm's final concern is that Broadcom's construction covers activity performed by any cellular system, even one disclaimed in the prosecution history. The Court, however, finds this objection unavailing because the Claims themselves limit the claimed system to one which can evaluate network conditions and make appropriate adjustments. Thus, although the preamble may be construed broadly, the claim language limits which systems meet its elements.

Rather, the Court agrees with Broadcom that collecting and communicating does not require a definition, nor does it necessarily require action.FN14

FN14. As Broadcom and the Court noted during oral argument, collecting can be passive such as in a rain gauge.

* * *

In light of the above discussion and in light of the rules of construction, the Court adopts Broadcom's

construction

2. ***Base Station***

Qualcomm's construction, which has been adopted by Broadcom is as follows: a fixed station configured to provide RF communication services to mobile terminals within its coverage areas. (See also, AJCC, Exh. C, p. 1. n. 1.)

3. ***RF Transceiver***

Broadcom's Construction	Qualcomm's Construction
Equipment capable of transmitting and receiving radio frequency communications.	A component of the base station or mobile terminal capable of transmitting and receiving radio frequency signals in one unit.

The dispute here revolves around whether the transceiver must be, as Qualcomm contends, in one unit. Broadcom asserts that nothing in the patent requires one chip capable of receiving and transmitting. Qualcomm, on the other hand, argues that those with skill in the art would understand transceiver to be a single unit capable of transmitting and receiving. Qualcomm asserts that Broadcom's challenge is misplaced because Qualcomm is not advocating that the transceiver be one unit but rather that the transmitting and receiving circuitry be housed in one unit. (Qualcomm Reply Br., p. 9.) Qualcomm presents the definitions of various dictionaries that support this construction. (Qualcomm Opening Br., p. 15.)

As discussed above, a transceiver need not be a single integrated unit capable of transmitting and receiving. (*See* Supra, p. 5.) Rather, as Qualcomm concedes here, a transceiver may in fact include separate sets of circuitry-one that transmits and one that receives. Nonetheless, having examined the specification of the '051 patent, the Court agrees that one skilled in the art would understand that even if there is separate circuitry, it is housed in one unit. The patent refers to "a base station transceiver" ('051 patent, 3:68), "number of base transceiver units (id., 4:39-40), and Figure 7 refers to a "base transceiver unit" (id., 7:36). These references indicate that the patent conceives of the transceiver circuitry being within one unit. Moreover, the IEEE dictionary, the Encyclopedia of Electronics, and the American Heritage Dictionary confirm this understanding. (Sklar Decl., Exh. V, p. 1028; Exh. W, p. 856; Exh. Y, p. 1435.)

Qualcomm additionally contests Broadcom's use of the word "equipment" as opposed to "component." According to Qualcomm, the specification is clear that the transceiver is part of base station and mobile terminal. (Qualcomm Opening Br., p. 15, citing'051 patent, 7:35-37; Figure 7; Figure 13.) Broadcom, however, seems to be using the term equipment rather than component to avoid a construction that requires the transmitting and receiving to be on a single chip. Because the transceiver is limited to being part of the base station and part of the mobile terminal by the language of the claim, the Court finds use of the language "component of the base station or mobile terminal" unnecessary. (*See* '051 patent, 21:50-51; 22:7-8.)

For the foregoing reasons, the Court adopts the following construction of RF transceiver: Equipment housed in one unit capable of transmitting and receiving radio frequency communications.

4. ***Mobile Terminal-Claims 1, 6, 24***

Broadcom's Construction	Qualcomm's Construction

A movable device configured to communicate wirelessly with a base station.	A movable device having a collection means for capturing data from objects, e.g., bar code scanner, and configured to communicate the data wirelessly with a base station.

The only dispute here is whether the mobile device has a collection means for capturing data from objects. Broadcom asserts that limiting collection to capturing data from objects improperly excludes collecting voice messages, which is included in one of the preferred embodiments. (Broadcom Opening Br., p. 29, citing '051 patent, 9:16-17. In response, Qualcomm asserts that its construction does not in fact require communication of data and that it does not improperly exclude the embodiment at 9:16-17. (Qualcomm Reply Br., p. 10.) According to Qualcomm, one skilled in the art would understand that embodiment to mean a mobile terminal capable of both types of exchanges. (Id.) Having examined the specification, and specifically the embodiment in Figure 12, the Court agrees with Broadcom that limiting collection to data from objects excludes the possibility of the collection of digitized voice messages, which according to the specification, the mobile terminal may be capable of collecting. ('051 patent, 9:16-17.)

In oral argument, Qualcomm disputed Broadcom's construction for its failure to include the mobile terminals' collection function in the construction. Broadcom does not dispute that the mobile terminal is capable of collecting information (whether as data from objects or as digitized voice packets) and is capable of communicating as well. As discussed above, the preambles of the claims at issue is, with some variations, a data communication system with the capability of collecting and communicating data, and that this systems comprises (includes) a mobile terminal. The Court agrees with Qualcomm that this does give context to (though does not limit) the understanding of mobile terminal. Moreover, having examined the language of the specification, the patent describes the mobile terminal as capable of collecting data and communicating wirelessly. (*See* '051 patent, 1:55-58; 7:15-25; 9:22-30, Abstract.) Because Broadcom's construction omits the communicating capability, Broadcom's construction cannot be adopted.

For the foregoing reasons, the Court finds it necessary to adopt its own construction. In light of the principles of *Markman* and *Phillips,* the Court construes mobile terminal as follows: a movable device capable of collecting data (including voice communication) and configured to communicate wirelessly with a base station.

5. "***Means responsive to transmissions received for evaluating the current data communication system***" ***(Claims 1. 6. 24) / Evaluating means (Claims 1, 5, 6, 10, 24, 26-28)***

Broadcom's Construction	Qualcomm's Construction
Function: Evaluating the current data communication system	*Function:* Evaluating the current data communication system/response to transmissions received
Function Interpretation: Evaluating operating conditions of the data communications system	*Function Interpretation:* In response to transmissions received, providing a measured indication of the present channel condition of the data communication system
Corresponding Structure: A system that measures fading and/or amount of data to be transmitted.	*Corresponding Structure:* 1. A received signal strength indicator ("RSSI") embodiment (introduced at Col. 16:25-54 of the '051 patent, and further described and illustrated

at Figure 12 of the '313 application) configured to measure fading; or
2. A signal quality indicator ("SQI")embodiment [introduced at Col. 16:20-25of the '051 patent and further described and illustrated at Figure 12 of the ' 313application) configured to measure clock jitter.

The parties agree that the above phrase is a means-plus-function element. As previously explained, the Court must first determine the claimed function and then identify the corresponding structure in the written description that performs the function. JVW Enterprises, 424 F.3d at 1330-31.

a. ***Function***

The parties agree that the correct function identified is "evaluating the current data communication system." Nonetheless, Qualcomm asserts that "responsive to transmissions received" is also functional. According to Broadcom, "responsive to transmissions received" is a characteristic and not properly part of the claimed function.

The Court does not agree with Broadcom that "responsive to transmissions received" is a characteristic. In Ferguson Beuregard/Logic Controls v. Mega Sys., LLC, 350 F.3d 1327, 1344-45 (Fed.Cir.2003), the Federal Circuit affirmed the construction that "valve means responsive to said actuation signals to derive said control inputs" to have two functions: (1) responsive to said actuation signals and (2) to derive said control inputs. Similarly here, the phrase "responsive to transmissions received" is a function-in other words, one of the functions delineated in the patent is responding to transmissions received, along with the evaluation of the current data communication system.

b. ***Construction of the Function***

Broadcom argues that the function must be interpreted as evaluating the operating conditions of the system because the specification describes such evaluation and associated adjustment of network parameters.

Broadcom contests Qualcomm's interpretation, claiming that it narrows the scope of the function to specific embodiments by limiting evaluating to "a measured response" and limiting operating conditions to "channel conditions." According to Broadcom, this amounts to an adoption of a function different than that claimed in the patent. (Broadcom Opening Br., p. 31, citing ACTV, Inc. v. Walt Disney, Co., 346 F.3d 1082, 1087 (Fed.Cir.2003)). Qualcomm, on the other hand, asserts that its construction adheres to the prosecution history, where, in order to procure a patent over prior art, the inventor limited the function to evaluating channel conditions. Qualcomm further contends that the construction "measured indication" is proper because it uses specification language, because evaluation indicates the production of an output, and on the basis of dictionary definitions.

Looking first at "channel conditions," the Court notes that in applying for the '051 patent, the inventor, in contrasting the new invention to the Kaufmann invention, noted that the '051 patent discloses "a means for evaluating channel conditions." (Sklar Decl., Exh. E-3, p. 9.) "Where an applicant argues that a claim possesses a feature that the prior art does not possess in order to overcome a prior art rejection, the argument may serve to narrow the scope of the otherwise broad claim language." Seachange Int'l, Inc. v. C-COR, Inc., 413 F.3d 1361, 1372-73 (Fed.Cir.2005). Nonetheless, such a disclaimer must be clear and unambiguous. *Id*. While the Court notes that the inventor did describe the '051 patented invention as capable of evaluating channel conditions, the inventor did so in contradistinction of the Kaufmann invention and not

necessarily with the intent to limit the '051 patent to such functionality. In other words, merely stating that the Kaufmann invention cannot evaluate channel conditions does not mean that the '051 patent invention is limited to evaluating channel conditions.

With respect to "measured indication," the Court does not believe that an interpretation of "evaluation" is so required. Although the specification does use the phrase "measured indication" in one instance ('051 patent, 16:26-27), "evaluate" does not necessarily require a measure or an output. (*See* The Random House Dictionary of the English Language, p. 670, attached to Sklar Deck, Exh. U, ("to judge or determine the significance, worth, or quality of").) Accordingly, the Court finds that "evaluate" does not need construction.

The final point of contention, as raised by Qualcomm, is that Broadcom's construction of the function fails to account for the word "current." The Court agrees and for this reason, finds it necessary to adopt its own construction: In response to transmissions received, evaluating current operating conditions of the data communications system.

c. *Corresponding Structure*

Broadcom asserts that the appropriate corresponding structure is a system that measures fading and/or amount of data to be transmitted. Qualcomm, on the other hand, contends that the proper structure is either an RSSI or an SQL In the specification, the patent states that "one example of a receiver making such a measurement of fading can be found in the abandoned patent application of Ronald L. Mahany, U.S. Ser. No. 07/485,313 ... which is incorporated herein by reference." ('051 patent, 16:28-30.) Though the patent does specifically incorporate by reference the RSSI structure, material incorporated by reference cannot provide a corresponding structure. Default Proof Credit Card Sys., Inc. v. Home Depot U.S.A. Inc., 412 F.3d 1291, 1301 (Fed. Cir2005); Atmel Corp. v. Information Storage Devices, Inc., 198 F.3d 1374, 1381 (Fed.Cir.1999). Accordingly, the RSSI disclosed in the abandoned patent application cannot be the structure for evaluating means.

Rather, the Court finds the structure proposed by Broadcom sufficient. As Broadcom noted in oral argument, because spread spectrum can include both direct sequence and frequency hopping, the appropriate structure must be able to measure both fading and the amount of data in the system. Accordingly, the Court adopts Broadcom's proposed structure.

* * *

For the foregoing reasons, the Court adopts the following means-plus-function construction:

Function: Evaluating the current data communication system / responsive to transmissions received.

Function Interpretation: In response to transmissions received, evaluating current operating conditions of the data communications system.

Corresponding Structure: A system that measures fading and/or amount of data to be transmitted.

6. *Source Encoding-Claim 24*

The parties propose the following constructions:

Broadcom's Construction	Qualcomm's Construction
A type of method of modulation to be used in maintaining RF communication	A method, occurring earlier in time than RF carrier modulation, of converting source information into baseband pulse waveforms of a particular type, *e.g.,* NRZ, PR, etc.

Qualcomm's construction is more limiting than Broadcom's for two reasons: (1) it requires the source encoding to occur earlier in time than RF carrier modulation; and (2) it limits source encoding to baseband modulation, excluding bandpass modulation. The Court will address these two limitations in turn, and will also address Qualcomm's challenge of Broadcom's inclusion of the word "modulation" in its construction.

a. ***earlier in time than RF carrier modulation***

Qualcomm argues that the source encoding must occur earlier in time than the RF carrier modulation because of the language in the claim that says source encoding is "to be used in maintaining RF communication." ('051 patent, 24:4-6.) The Court is not persuaded by this argument. As Broadcom notes, there is no requirement that RF carrier modulation be performed. (Broadcom Opening Br., p. 33-34 .) For converse reasons, the Court rejects Qualcomm's suggestion at oral argument that the Court insert "using the source signal" after "modulation" in Broadcom's construction. There is nothing in the patent that either requires or excludes the possibility that the source signal is modified prior to modulation.

b. ***source encoding limited to baseband modulation***

Qualcomm argues that source encoding should be limited to baseband modulation and what it calls "traditional" source encoding, and should exclude bandpass modulation. (Qualcomm's Reply Br., p. 13-14.) To this end, Qualcomm puts forth two arguments.

First, Qualcomm argues that the specification uses NRZ and PR modulation, which are types of baseband modulation. However, these are just examples within the specification, and do not limit the scope of the actual claim. Furthermore, the specification itself does not distinguish between baseband and bandpass modulation.

Second, Qualcomm refers to extrinsic evidence to argue that source encoding is limited to baseband modulation. In particular, Qualcomm argues that the abandoned application of Ronald L. Mahany, U.S. Ser. No. 07/485,313 ("'313 application"), incorporated by reference, explicitly limits "source encoding" to baseband modulation. The Court has reviewed Qualcomm's reference to the '313 application and found it unhelpful to Qualcomm's argument. Even if the '313 application were so explicit, the '051 Patent only refers to the '313 application as "[a]n *example* of a transceiver using [an NRZ/PR scheme]." ('051 Patent, 19:39-42 (emphasis added).)

Qualcomm also refers to two textbooks to argue that source encoding is limited to baseband modulation and excludes bandpass modulation. (*See* Sklar Supp. Decl., Exhs. AA & BB.) The Court has reviewed the portions from these textbooks which Qualcomm has provided and finds them unhelpful. In fact, there is very little mention of baseband modulation, and in the few instances where the textbooks mention baseband modulation (*e.g.,* Sklar Supp. Decl., Exh. BB, pp. 48, 55-56), they do not distinguish it from bandpass modulation.

c. ***Broadcom's inclusion of the word "modulation"***

Finally, Qualcomm challenges Broadcom's inclusion of the word "modulation" in the construction on the basis that it is inconsistent with the preferred embodiment. Qualcomm argues that as it is used in the specification, "modulation" implies "frequency modulation." Frequency modulation is a type of bandpass modulation, and if "modulation" means a type of bandpass modulation, then including "modulation" in the construction would exclude the preferred embodiment's NRZ and PR modulations ('051 Patent, col. 19), which are types of baseband modulation.

The Court agrees with Broadcom that the specification does not limit "modulation" to frequency modulation because the specification refers to NRZa baseband function-as a type of "data modulation." ('051 Patent, 19:10.) Thus, modulation must also include baseband as well as bandpass modulation. The Court is not persuaded by Qualcomm's argument that "the applicant here was simply referring to frequency modulation where NRZ encoded data forms the *input* ...." (Qualcomm's Opening Br., p. 20-21.) The Court has also reviewed the exhibits Qualcomm submitted, and finds that they provide no support to Qualcomm's argument. (*See* Sklar Decl., Exhs. R, K.)

Thus, for the reasons set forth above, the Court adopts Broadcom's construction of "source encoding."

7. "*Said base station and said mobile terminal being responsive to said evaluating means for selectively adjusting the length of the spreading code used by transceivers*"-Claim 1 / "*Said base station and said mobile terminal being responsive to said evaluating means for selectively adjustine the frequency of the spreading code used by transceivers*"-Claim 6 / "*Said base station and said mobile terminal being responsive to said evaluating means for selecting a type of source encoding to be used in maintaining RF communication-Claim 24*

a. ***Means-Plus-Function***

The first issue in dispute is whether this term is governed by 35 U.S.C. s. 112, para. 6. As mentioned above, patent law recognizes that a claim element can be expressed as a means for performing a specified function. Id. Ordinarily, use of the term "means" creates a presumption that the element is to be construed as a means-plus-function element. Kemco Sales, Inc. v. Control Papers Co., Inc., 208 F.3d 1352, 1360 (Fed.Cir.2000). Conversely, absence of the term "means" creates a presumption that the element is not be construed in accordance with 35 U.S.C. s. 112, para. 6. *Id*. This presumption may be rebutted if the claim limitation is determined not to recite sufficiently a definite structure to perform the claimed function. *Id*. In determining whether the presumption has been rebutted, the Court may examine any intrinsic and relevant extrinsic evidence. Personalized Media Communications v. Int'l Trade Comm'n, 161 F.3d 696, 704-05 (Fed.Cir.1998).

In Claim 1, the patent discloses an RF data communications system comprising a base station and a mobile terminal, and which in response to transmissions received, evaluates the current data communication system. Claim 1 then goes on to disclose that "said base station and said mobile terminal being responsive to said evaluating means for selectively adjusting the length of the spreading code used by transceivers." The parties agree that the term does not use the triggering phrase "means." Thus, the question is whether the claim element recites a sufficiently definite structure to perform the claimed function.

Qualcomm seems to argue that the terms "base station" and "mobile terminal" are not sufficiently definite structures to perform the claimed function because the specification describes each of them as including multiple structures and components and because the claim language fails to identify which of the components performs the function.FN15 (Sklar Decl., para.para. 145-46.) Broadcom does not respond to

this argument. Although a base station and mobile terminal may be composed of different components, it is the different components within the base station and the mobile terminal that work together to do the adjusting. First, the Court notes that the specification explains that the transmitter and receiver are responsible for adjusting the length and frequency of a spreading code ('051 patent, 17:21-35) and that the base station and roaming terminal adjust the hop frame length in frequency hopping spread spectrum (*id.,* 17:59-64). Moreover, after describing the various parameters, the specification goes on to state that all of the "parameters must be maintained in local memory at both the transmitter and the receiver so that successful communication can occur." ('051 patent, 20:20-23.) The specification then describes the role the transceivers play in the adjusting. (*See id.,* 20:26-21:15.) Therefore, the Court concludes that it is the multiple components within the base station or mobile terminal that performs the function. Accordingly, the claim language is sufficiently specific and the presumption arising from the lack of the word "means" is not overcome. FN16

FN15. Dr. Sklar seems to base this argument on a figure from a patent ("7 patent) which is not incorporated by reference in the '051 patent. (Sklar Decl., 146.) First, the Court notes that the patent number is 4,910,794 ("the '794 patent"). (Id., Exh. E-9.) Dr. Sklar fails to explain why reference to this '794 patent is relevant to a discussion of the '051 patent.

FN16. Dr. Sklar repeatedly refers to a microcomputer or microprocessor in the base station or mobile terminal, which is configured to perform the algorithm described in Column 20:19-21:24 of the '051 patent. The microcomputer, however, is described in the '794 patent and not in the '051 patent. The '051 patent does not refer to the '794 patent at all and the Court is unclear why the '794 patent is relevant to the construction of the elements of the '051 patent. Regardless, the Court finds that merely stating the base station or mobile terminal is enough.

b. ***Construction***

Having determined that the disputed term does not fall within the ambit of 35 U.S.C. s. 112, the Court must now construe the disputed terms. The parties propose the following constructions:

Broadcom's Construction	Qualcomm's Construction
Based on output of the evaluating means, the base station and mobile terminal -> selectively adjust the length of the spreading code used by the	In response to a measured indication of the present channel condition of the data communication system provided by the evaluating means, the base station and mobile terminal each vary/switch

	transceivers.	
-> selectively adjust the frequency of the spreading code used by the transceivers		
	-> select modulation type	
Claim 1: Length of	No construction	the period (in chips) of; a period the duration of which (in time) is equal to the symbol duration of the information carrying signal is excluded through prosecution disclaimer
		[The Court notes that Qualcomm has modified the term period to be repetition period (Qualcomm Reply Br., p. 15.)]
Claim 6: Frequency of:	No construction	the chip rate (in chips/second) of
Claim 1, 6: Spreading code used by the transceivers	No construction	the pseudo-noise ("PN") signal (or the corresponding PN code sequence) used by both the base station and mobile terminal RF transceivers to spread and despread signals; this PN signal (or the corresponding PN code sequence) is capable of spreading a signal that is in a relatively narrow band over a wider range of frequencies; and 2) satisfies balance, run and correlation tests for randomness properties

Spreading CodeFN17

FN17. Qualcomm states that Broadcom proposed the following construction: "Code bits, used by the transceivers, that are multiplied with data bits in a spread spectrum communication system." (Qualcomm Opening Br., p. 22.) This construction, however, is not mentioned in Broadcom's moving papers nor in the AJCC.

Qualcomm contends that its definition of spreading code is proper because the specification teaches that a direct sequence spread spectrum system uses a "sequential pseudo-noise signal to spread a signal" ('051 patent, 17:11-12), and frequency hopping system switches transmission frequencies according to a "sequence that is fixed or pseudo-random" (id., 17:38-31). Accordingly, Qualcomm asserts that the spreading code is the pseudo-noise (PN) signal or PN code sequence. Qualcomm then contends that the specification uses the term "spreading code" interchangeably with "PN signal" but cites to portions of the specification describing only "spreading code." In those instances, the patent explains how the spreading code encodes data to be sent and then decodes when it is received. (Id., 17:22-26.) It also teaches how the length and frequency of the spreading code can be adjusted based on rejection or noise immunity. (Id., 17:30.) Nowhere does the Court see, however, that the terms are used interchangeably.

Furthermore, although Broadcom's expert, Dr. Cox, admitted that in direct sequence spread spectrum, the PN waveform spreads a data message to be transmitted (Cox Decl., Par. 26, attached to Sklar Decl., Exh. X), this is limited to direct sequence spread spectrum. This does not mean it should be extended to frequency hopping spread spectrum, which the Court has already determined is included in the definition of spread

spectrum.

Finally, although the patent specification does state that the PN signal is used "to spread a signal that is relatively narrow band over a wider range of frequencies" ('051 patent, 17:11-14), nowhere in the specification does it limit the PN signal to one that "satisfies balance, run and correlation tests for randomness properties" (Qualcomm construction.) Qualcomm relies on extrinsic evidence, such as a publication by its expert, Dr. Sklar. (Sklar Decl., Exh. N, p. 546.) Qualcomm also relies on the IEEE dictionary definition of "pseudorandom number sequence" as "a sequence of numbers ... that is satisfactorily random for a given purpose." (Sklar Decl., Exh. V., p. 748.) But Qualcomm cites no support for its construction in the specification. Accordingly, the Court is not prepared to limit spreading code to a PN signal that "satisfies balance, run and correlation tests for randomness properties."

For these reasons, the Court finds construction of the term "spreading code" unnecessary.

8. ***Measuring circuit that produces a signal indicative of the signal strength of received transmissions- Claim 27***

Broadcom's Construction	Qualcomm's Construction
No construction need. If construed: Measuring circuit that produces a signal indicative of the signal strength of the received transmission.	The RSSI, limiter-discriminator, and analog-to-digital converter of part one of the structure corresponding to "evaluating means." The limited-discriminator is configured to limit the received signal; the RSSI is configured to provide an output voltage or current proportional to the degree of limiting of the received signal by the limiter-discriminator; and the analog-to-digital converter is configured to provide digital samples of the RSSI output voltage or current. These digital samples form a signal indicative of the signal strength of received transmissions.

Broadcom asserts that no construction is necessary and that its plain meaning is sufficient. (Broadcom Opening Br., p. 34, citing Cox Decl., Par 123, attached to Massa Decl., Exh. J.) Moreover, Broadcom contends that Qualcomm's construction is improper because, although the RSSI is an example of a measuring circuit, the '051 patent does not limit the measuring circuit to this specific example. Having examined the patent, the Court agrees that the RSSI is a mere example and is therefore not prepared to limit the term "measuring circuit" to the RSSI. (See '051 patent, 16:34-35.) Moreover, the Court agrees that the plain meaning of the claim language is adequate here.

III. *CONCLUSION*

For the foregoing reasons, the Court adopts the following constructions:

'317 Patent

Term	Construction
Radio Unit	A unit capable of transmitting and receiving information in the form of electromagnetic waves without using wires
Transceiver	Equipment that is part of a radio unit that is capable of transmitting and receiving radio frequency communications
Memory Device [Storing] Communication Protocols	A device used for storing information, which stores a plurality of operating procedures for communicating on two or more communication networks
Simultaneous Participation	Taking part in communications with two or more networks either actively or in sleep-mode during the same period of time
Spontaneous Communications Network	An ad hoc local area network established for a limited period of time and for a specific performance, and is formed when two or more devices establish communications with each other
Peripheral Communications Network	Spontaneous local area communication network that is operable over short ranges and includes at least one peripheral device
Registers with the first communication network that the radio unit will not be participating on the first REG communication network	Indicates to the first RF communication network that the radio unit will not be capable of taking part in communications on the first RF communication network

The '010 Patent

Term	Construction
"Network having a predetermined allocated bandwidth" and "Network having a variable bandwidth"	Bandwidth: capacity on a particular data channel to accommodate data transmission, or a metric therefor *Network having a predetermined allocated bandwidth:* Network having a predetermined fixed bandwidth (e.g., a circuit-switched voice communication network) *Network having a variable bandwidth:* Network in which the available bandwidth varies (e.g., a packet-switched voice communication network)

The '686 Patent

Term	Construction
Digital Signal Processor	A video encoding component for processing digital video data
DSP controller controlling said plurality of processing units	*DSP controller:* a component of the DSP that, among other functions, distributes control instructions to the plurality of processing units
	DSP controller controlling said plurality of processing units: The DSP controller, either independently or under the direction of a global controller,

	distributes control instructions to be executed by the plurality of processing units
Plurality of processing units [ ] for processing said multiple frame video digital signal	Units that process multiple frame video data by performing discrete-cosine transformation (DCT), inverse-DCT (IDCT), quantization, inverse quantization, frame type decisions, or the like

The '865 Patent

Term	Construction
Means for selecting a number of the first plurality of capacitors to adjust the first filter to a desired frequency	*Function:* selecting a number of the first plurality of capacitors to adjust the first filter *Structure:* -> Oscillator, phase detector (e.g., 31:1-16) and equivalents and -> A reference frequency signal (2508) generated by a narrowband PLL -> Phase detector (2510), including a Gilbert multiplier / mixer (2520) and a low pass filter (2522) for generating a signal indicating the phase differential between a reference signal input supplied to the "first adjustable on-chip filter" (2506) and the output from the "first adjustable on-chip filter" -> Zero crossing comparator (2516) for detecting when there is zero phase difference between the reference frequency input to the "first adjustable on-chip filter" and the output from that filter, and
	-> Counter 2504 for incrementing the amount of discrete capacitance selected by control lines 2526.
Means for transferring the selection of the first plurality of capacitors to the second plurality of capacitors to adjust the second filter to a center frequency proportional to the desired frequency	*Function:* transferring the selection of the first plurality of capacitors to the second plurality of capacitors to adjust the second filter to a center frequency proportional to the desired frequency. *Structure:* control lines that select switchable capacitors in both the "dummy" and the "operative" filters

The '051 Patent

Term	Construction
An RF data communication system having spread spectrum capability for collecting and communicating data (Claim 1); A data communication system having spread spectrum capability for collecting and communicating using RF data signal transmission (Claim 6); An RF data communication system for collecting and communicating data (Claim 24)	An RF data communication system having spread spectrum capability for collecting and communicating data
Base Station	A fixed station

	configured to provide RF communication services to mobile terminals within its coverage areas
RF Transceiver	Equipment housed in one unit capable of transmitting and receiving radio frequency communications
Mobile Terminal	A movable device capable of collecting data (including voice communication) and configured to communicate wirelessly with a base station
Means responsive to transmissions received for evaluating the current data communication system (Claims 1, 6, 24) / Evaluating means (Claims 1, 5, 6, 10, 24, 26-28)	*Function:* Evaluating the current data communication system / responsive to transmissions received. *Function Interpretation:* In response to transmissions received, evaluating current operating conditions of the data communications system.
	Corresponding Structure: A system that measures fading and/or amount of data to be transmitted.
Source Encoding	A type of method of modulation to be used in maintaining RF communication
Said base station and said mobile terminal being responsive to said evaluating means for selectively adjusting the length of the spreading code used by transceivers-Claim 1 / Said base station and said mobile terminal being responsive to said evaluating means for selectively adjusting the frequency of the spreading code used by transceivers-Claim 6 / Said base station and said mobile terminal being responsive to said evaluating means for selecting a type of source	Not means-plus-function

encoding to be used in maintaining RF communication-Claim 24	Spreading code: no construction necessary Length of: construction to be determined pending further briefing
Frequency of: construction to be determined pending further briefing	
Measuring circuit that produces a signal indicative of the signal strength of received transmissions-Claim 27	No construction needed

CIVIL MINUTES-GENERAL

Date September 8, 2006

Case No. SACV 05-467-JVS(RNBx)

Title Broadcom Corp. V. Qualcomm Inc.

Present: The Honorable James V. Selna

Karla J. Tunis Deputy Clerk

Court Reporter Not Present

Attorneys Present for Plaintiffs: Not Present

Attorneys Present for Defendants: Not Present

Proceedings: ***(In Chambers) Order to Supplement Briefing***

At oral argument the Court permitted the parties to submit additional briefing on the terms "length of" and "frequency of." In Broadcom's Supplemental Brief, Broadcom asserts as follows: "Because data symbols occur with a particular rate per second, the "frequency" of the spreading code, defined in terms of chips per data symbol, also occurs with a particular rate per second." (Broadcom Supplement Br., p. 4.) Though the Court found the supplemental briefing helpful, the Court would benefit from a further elucidation of this sentence. Broadcom is therefore ordered to supplement further briefing of no more than 3 pages by September 15, 2005. Qualcomm may file a responsive brief of no more than 3 pages by September 22, 2005.

CIVIL MINUTES-GENERAL

Case No. SACV 05-467-JVS(RNBx)

Date September 26, 2006

Title Broadcom Corp. V. Qualcomm Inc.

Present: The Honorable James V. Selna

Deputy Clerk Karla J. Tunis

Not Present Court Reporter

Attorneys Present for Plaintiffs: Not Present

Attorneys Present for Defendants: Not Present

Proceedings: (In Chambers) ***Order re Construction of Additional Terms***

Plaintiff Broadcom Corporation ("Broadcom") instituted the instant patent infringement action against Defendant Qualcomm Incorporated ("Qualcomm"), arguing that Qualcomm infringed several of its patents, including U.S. Patent No. 5,425,051 ("the '051 patent"). This Court has already construed the disputed terms in the '051 patent, as well as the other patents involved in this suit. Although the Court had limited the parties to certain terms for construction, Qualcomm added two terms, without the permission of this Court, to be construed: "length of" and "frequency of." Because these terms were presented for construction by Qualcomm without permission of the Court, the Court afforded the parties the opportunity to submit additional briefing material to aid in the Court's construction analysis. As a result of that briefing, the Court ordered the parties to submit additional briefing in response to a question raised by the Court. Having all the additional information before, the Court now construes the remaining two contested terms.

The parties propose the following constructions:

	Broadcom's Construction	Qualcomm's Construction	Court's Construction Tentative Construction
Length of	Number of chips per data symbol	the period (in chips) of; a period the duration of which (in time) is equal to the symbol duration of the information carrying signal is excluded through	number of chips per repetition period

Karla J. Tunis Deputy Clerk

Not Present Court Reporter

Attorneys Present for Plaintiffs: Not Present

Attorneys Present for Defendants: Not Present

Proceedings: (In Chambers) ***Order re Construction of Additional Terms***

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The parties propose the following constructions:

	Broadcom's Construction	Qualcomm's Construction	Court's Tentative Construction
Length of	Number of chips per data symbol	the period (in chips) of; a period the duration of which (in time) is equal to the symbol duration of the information carrying signal is excluded through prosecution disclaimer	number of chips per repetition period
Frequency of	Chip clock rate	The chip rate (in chips/second)of	Chi p clock rate

Broadcom explains in both its August 7, 2006 Supplemental Brief ("August Brief") and its September 15, 2006 Supplemental Brief ("September Brief") that the '051 patent describes the spreading code in both absolute terms and relative terms. In absolute terms, the spreading code can be described as having a certain rate of number of chips per second. In relative terms, the spreading code can be defined in terms of chips per data symbol or data bits. "Length of" describes the spreading code in relative terms-how many chips per data symbol. "Frequency of" describes the spreading code in absolute terms-how many chips per second. Previously, the Court defined "length of" in terms of a repetition period, which both parties contested as either overlapping with its definition of "frequency of" or confusing because it conceived of "length of" in terms of time as opposed to data bits. Accordingly, the Court modifies its initial construction and adopts the following construction: Number of chips per repetition period, where repetition period is defined in terms of data symbols. FN1 Moreover, because both parties agree with the Court's tentative construction of "frequency" of (Broadcom's September Brief, p. 3; Qualcomm's August 14, 2006 Brief, p. 5), the Court's tentative construction remains.

FN1. This should alleviate Qualcomm's concern that without the term repetition period the construction covers only the limited circumstance where the entire spreading conde is applied to each symbol. (*See* Qualcomm Incorporated' Supplemental Brief re: '051 Patent, p. 2.)

Accordingly, the Court adopts the following constructions:

Length of	Number of chips per repetition period, where repetition period is defined in terms of data symbols.
Frequency of	Chip clock rate

AMENDED 10-4-06

CIVIL MINUTES-GENERAL

AMENDED 10-4-06

Case No. SACV 05-467-JVS(RNBx)

Title Broadcom Corp. V. Qualcomm Inc.

Date September 26, 2006

Present: The Honorable James V. Selna

Karla J. Tunis Deputy Clerk

Not Present Court Reporter

Attorneys Present for Defendants: Not Present

Attorneys Present for Plaintiffs: Not Present

Proceedings: (In Chambers) ***Order re Construction of Additional Terms***

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