

United States District Court,  
N.D. California.

**TECHNOLOGY LICENSING CORP,**  
Plaintiff.

v.

**VIDEOTEK, INC,**  
Defendant.

No. C 01-04204 CRB

**Nov. 14, 2002.**

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## **CLAIM CONSTRUCTION ORDER**

**CHARLES R. BREYER, District Judge.**

This suit involves the alleged infringement of United States Patent Nos. 5,550,594 ("the '594 Patent"), 4,573,070 ("the '070 Patent"), 5,486,869 ("the '869 Patent"), and 5,754,250 ("the 250 Patent"). These patents describe technology for processing broadcast video signals. Now before the Court is the task of construing certain claim limitations over which the parties remain in dispute.

## **BACKGROUND**

The video images that appear on a television screen are the product of a two-step process. First, a television station generates and transmits a television signal. This signal is a composite of video, audio, and other information. Second, the transmitted signal is received by television sets, which must process the signal into its respective components in order to display an image properly. The patents in suit relate to the second step in this process: They describe video processing circuitry that can decipher the various components of composite television signals to produce high-quality images and sounds.

The first of the four patents in suit, *the* '594 Patent, claims "unique combinations of operations, such as oversampling and interpolation, to improve the quality of video signals." Pl.'s Opening Br. at 6. Oversampling involves obtaining the value of a signal more frequently than a person of ordinary skill in the art would believe to be sufficient to generate a quality digital video signal. Interpolation involves using one set of image samples to generate a second set of samples that is of a higher quality and subject to fewer

distortions than the first set. It is the *combination* of oversampling and interpolation, along with other elements, to generate "high quality signal samples having improved resolution compared to those generated using conventional processing techniques," *id.*, that constitutes the novelty of the '594 Patent.

Also in suit is *the '070 Patent*. "The '070 Patent teaches that noise on video signals can be removed or reduced using a filter that operates on different types of systems." *Id.* at 20. The claims of the patent are directed at reducing noise on a particular element of a picture—a pixel—by comparing it to other pixels in its spatial and temporal neighborhoods and combining pixels that are sufficiently similar to generate "a noise-reduced signal that more accurately reflects the undistorted video image." *Id.* at 21.

The final two patents-in-suit, *the '869 Patent* and *the '520 Patent*, describe an apparatus and method for separating two types of information that are carried on the same video signal. FN1 Specifically, the claims of these patents are directed at separating "active video information," such as brightness and color, from "sync pulses," which convey timing information that enables a television to properly display an image. *Id.* at 33. The asserted claims cover a separation apparatus and method that is compatible with different kinds of video signals and can "provide reliable sync [pulses] with minimal distortion to produce high quality video images." *Id.*

FN1. The '520 Patent is a continuation of the '869 Patent.

## CLAIM CONSTRUCTION

### A. Legal Standards for Claim Construction

Like television broadcasting, patent infringement analysis involves two steps. The first step is to construe the asserted claims, and the second step is to determine whether the accused method or product infringes any of the claims as properly construed. *See* *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed.Cir.1995) (en banc), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). The first step, construction of the patent claims, is a matter of law and thus the responsibility of the court. *See id.* at 979.

Extrinsic evidence, such as expert and inventor testimony, dictionary definitions, and learned treatises, may be admitted in the court's discretion "for background and education on the technology implicated by the presented claim construction issues." *Key Pharm. v. Hercon Labs. Corp.*, 161 F.3d 709, 716 (Fed.Cir.1998). However, "[i]n interpreting an asserted claim, the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996).

In examining the intrinsic evidence, the court should first look to the words of the claims themselves to define the scope of the patented invention. *See id.* Words in a claim "are generally given their ordinary and customary meaning." *Id.*

Second, the court should review the patent specification "to determine whether the inventor has used any terms in a manner inconsistent with their ordinary meaning." *Id.* "The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication." *Id.* The Federal Circuit teaches that "the specification is always highly relevant to the claim construction analysis. Usually it is dispositive; it is the single best guide to the meaning of a disputed term." *Id.* Drawings included in the patent application have the same effect on claim language as other portions of the specifications. *See*

Autogiro Co. of America v. United States, 181 Ct.Cl. 55, 384 F.2d 391, 398 (Ct.Cl.1967).

Ordinarily, the intrinsic evidence alone will resolve any ambiguity in a disputed term. By relying first on the patent claims and specification (and prosecution history, if it is in evidence), a court can protect a patentee's rights while at the same time enabling the public to rely on the public record of the patentee's claim. "In other words, competitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee's claimed invention and, thus, design around the claimed invention." *Vitronics*, 90 F.3d at 1583 (citing *Markman*, 52 F.3d at 978-79). For these reasons, "[o]nly if there [is] still some genuine ambiguity in the claims, after consideration of all available intrinsic evidence, should the trial court[ ] resort[ ] to extrinsic evidence." *Id.* at 1584; *see Key Pharm.*, 161 F.3d at 716 (noting that extrinsic evidence is appropriate if the intrinsic evidence "does not answer the question").

## **B. The "Section" and "Circuit" Claims**

Seventeen of the claim limitations in dispute involve either the term "section," as in "an input processing section ... to separate said synchronizing components," or the term "circuit," as in "a processing circuit ... to sum portions of said surrounding element and said central element."

Construction of each of these terms hinges on whether it qualifies as a "means-plus-function" limitation under 35 U.S.C. s. 112, para. 6. This section of the Patent Code provides that a claim element can be expressed as a "means ... for performing a specified function without the recital of structure, material or acts in support thereof." 35 U.S.C. s. 112, para. 6. Claims expressed in this form are "construed to cover the corresponding structure ... described in the specification and equivalents thereof." *Id.* To interpret such a claim, therefore, the Court must first identify the claimed function and then determine which structure or structures disclosed in the specification correspond to that function. *See Micro Chem., Inc. v. Great Plains Chem. Co.*, 194 F.3d 1250, 1257-58 (Fed.Cir.1999). This determination is relevant to later phases of the litigation because a means-plus-function limitation is infringed only when the accused device performs the identical function by means of structures identical or equivalent to those described in the patent specification. *See WMS Gaming, Inc. v. Int'l Game Tech.*, 184 F.3d 1339, 1347 (Fed.Cir.1999).

Defendant argues that each of the disputed limitations in the patents in suit is a means-plus-function limitation. Accordingly, defendant proffers constructions of these terms that designate both the function served by the claim and the structure(s) that corresponds to that function. Plaintiff argues that the limitations do *not* qualify as means-plus-function limitations, and therefore proffers constructions that do not contain discrete functional and structural components.

As both parties acknowledge, a limitation containing the words "means for" is presumed to be a means-plus-function limitation; conversely, a limitation that does *not* contain this language is presumed *not* to fall within s. 112, para. 6. *See Personalized Media Communications, LLC v. Int'l Trade Comm'n*, 161 F.3d 696, 703-04 (Fed.Cir.1998). Since none of the seventeen limitations in dispute contains "means for" language, there is a presumption against construing them as means-plus-function terms. The question thus becomes whether the presumption is rebutted in this case.

As the Federal Circuit has explained, "in deciding whether either presumption has been rebutted, the focus [is] on whether the claim as properly construed recites sufficiently detailed structure to avoid the ambit of s. 112, para. 6." *Id.* at 704. "[W]hen a claim recites a function, but then goes on to elaborate sufficient structure, material, or acts within the claim itself to perform entirely the recited function, the claim is not in

means-plus-function format." Sage Prods., Inc. v. Devon Indus., Inc., 126 F.3d 1420, 1427-28 (Fed.Cir.1997). Similarly, the presumption *against* construing a limitation in means-plus-function terms "is overcome where the element 'nonetheless relies on functional terms rather than structure or material to describe performance of the claimed function.'" Apex, Inc. v. Raritan Computer, Inc., 187 F.Supp.2d 141, 157 (S.D.N.Y.2002) (quoting Micro Chem., 194 F.3d at 1257). FN2 Plaintiff contends that defendant has failed to rebut the presumption, insisting that each limitation in dispute "describe[s] sufficient structure to avoid application of s. 112, para. 6." Pl.'s Reply Brief at 4. Specifically, plaintiff submits that a "circuit" is an "interconnection of electrical elements," and that a "section," which is simply a portion of a circuit, can be defined in the same way.

FN2. Plaintiff argues that the *Sage Products* test is inapplicable to the facts of this case because the court in *Sage Products* began with the presumption that the claim term at issue *was* a means-plus-function claim under s. 112, para. 6. This is a distinction without a difference. Whether one starts with the presumption that s. 112, para. 6 does or does not apply, the test for whether that presumption has been rebutted is the same. *See Personalized Media*, 161 F.3d at 704; *Nilssen*, 80 F.Supp.2d at 928 n. 11 ("Although *Sage Products* addressed a claim element that included the word 'means,' the opinion's reference to what structure is needed to perform the recited function 'entirely' is equally applicable to a claim element that does not employ the word 'means' but is potentially in means-plus-function format despite the word's omission.").

As a literal matter, plaintiff is of course correct: An interconnection of electrical elements is no less a structure than Hadrian's Arch, a freeway interchange, or the helix of a DNA molecule. However, the relevant question is not whether the limitations satisfy the dictionary definition of the word "structure," but rather whether the limitations recite structure *that is sufficiently detailed to perform the recited function*. *See Apex*, 187 F.Supp.2d at 158. As such, plaintiff's approach merely begs the question, since it is not at all obvious that an "interconnection of electrical elements" is sufficiently detailed to one skilled in the art to perform the particular functions recited here.

In the context of video signal processing, at least one court has found that the term "circuit," even when modified by additional verbiage specifying circuitry of a particular type, falls under s. 112, para. 6. In *Apex*, the term "programming circuit" was held to be a means-plus-function claim because the addition of "adjectives qualifying the word[ ] 'circuit' ... do[es] not furnish any small semblance of definite structure to the otherwise indefinite word [ ]. On the contrary, each adjective simply recites a function of the element ..." *Id.* at 158-59; *see also Laitram Corp. v. Rexnord, Inc.*, 939 F.2d 1533, 1536 (Fed.Cir.1991) ("The recitation of some structure in a means plus function element does not preclude the applicability of section 112(6) ... when the structural description ... merely serves to further specify the function of that means."). Likewise, in *Nilssen v. Motorola*, 80 F.Supp.2d 929 (E.D.III.2000), a case involving electronic ballasts for powering fluorescent lights, the court found that a claim limitation directed to a "power conditioning circuit" was a means-plus-function limitation because the disclosed structural elements did not suffice to perform entirely the recited function. *See id.* at 934.

Plaintiff cites *Harmonic Design, Inc. v. Hunter Douglas, Inc.*, 88 F.Supp.2d 1102 (C.D.Cal.2000), and *CellNet Data Systems, Inc. v. Itron, Inc.*, 17 F.Supp.2d 1100 (N.D.Cal.1998), for the contrary proposition that a circuit is a definite structure. In *Harmonic Design*, the court held that the term "electronic circuit" connoted sufficiently detailed structure to one skilled in the art to remove it from the province of s. 112, para. 6. However, central to the court's holding in that case was the fact that the claim specified that the circuit was "electrically connected to the control signal generator and the battery." *Id.* at 1105. No such

locational restrictions appear in the claims at issue here. FN3

FN3. The Court rejects plaintiff's attempts to characterize claim language that (arguably) identifies inputs and outputs of a particular circuit section as language that identifies that section's physical location. *See, e.g., Reply* at 8.

In *CellNet*, the court rested its conclusion that the term "circuit means" was structural on the dictionary definition of that term. *See* 17 F.Supp.2d at 1107. This Court is unpersuaded by such reasoning. As explained above, "the inquiry is not whether a term has a commonly understood definition (as one that may be found in a dictionary), but rather whether the commonly understood definition, if one exists, connotes sufficient structure" to perform the particular function at issue. *Nilssen*, 80 F.Supp.2d at 158. Moreover, unlike the patent in *CellNet*, the patents here in suit do disclose the necessary circuitry in their specifications. *See CellNet*, 17 F.Supp.2d at 1107.

For these reasons, the Court will construe the seventeen terms listed above as means-plus-function limitations under 35 U.S.C. s. 112, para. 6. FN4 Accordingly, each of these terms will be construed to cover the claimed function and the corresponding structures identified in the specification.

FN4. The doctrine of claim differentiation does not mandate a contrary result. At most, the claim differentiation doctrine raises a rebuttable presumption that the limitations at issue are not means-plus-function limitations. *See Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed.Cir.1998). This is the same presumption raised by s. 112, para. 6. For the reasons stated, the Court finds that this presumption is rebutted.

Defendant has identified in its Proposed Claim Construction Order the structures that it believes correspond to the recited functions. Although plaintiff objects to the breadth of certain of defendant's constructions, plaintiff has neither articulated a principled basis for rejecting them nor proposed preferred alternatives. The mere fact that the structures identified in defendant's claim construction papers are different or greater in number than the structures identified in the joint claim construction statement is not a reason to reject them. The Court will therefore construe each of these seventeen limitations in the manner defendant has proposed.

## **C. Other Disputed Terms**

### **1. "Improved Resolution"**

In Claim 1 of the '594 Patent, the parties dispute the proper construction of the term "improved resolution" in the phrase "interpolation section responsive to groups of said samples to perform interpolation thereof to provide filtered samples having improved resolution." Defendant submits that "filtered samples having improved resolution" means "samples that are each represented by a larger number of bits than were the original samples generated by the sampling section." Plaintiff argues that "improved resolution" is not limited to improvements measured in numbers of bits. According to plaintiff, while bit improvements are specified in the preferred embodiment, "improved resolution" may also connote, among other things, reductions in distortions or noise. FN5 Defendant does not contest the fact that reductions in distortion and noise are benefits of the process taught by the patent, but argues that these benefits are merely a side effect of the increase in bits of resolution and do not themselves constitute improved resolution.

FN5. Plaintiff also argues that defendant's reading of this limitation is inconsistent with the scope of the patent because the patent applies to analog as well as digital video, and analog samples are not expressed in terms of bits. The improved resolution, however, results from the process of converting analog signals into digital format. *See* Col. 4:50-67. Accordingly, while it is true that the patent "applies" to analog signals, the improvement in resolution that is the subject of the invention is properly measured in bits.

The patent specification is instructive in this regard. According to the specification, "the use of oversampling and interpolation to an increased number of bits of resolution is believed to be a novel feature *in view of the unexpected result of reducing distortions occurring in the sampling and A-D conversion process.*" '594 Patent, Col. 4:63-67 (emphasis added). This language strongly suggests that reductions in distortion are a central benefit, rather than merely a side effect, of the claimed invention. It also indicates, however, that reduction in distortion is a phenomenon distinct from, albeit complementary to, improvement in the number of bits of resolution. Accordingly, while it may be that the interpolation section provides filtered samples having not only improved resolution but also reduced distortion, the latter benefit is not, as plaintiff suggests, an inherent limitation of the claim. Adopting plaintiff's proposed construction would therefore have the effect of importing a limitation from the preferred embodiment into the claim itself, in violation of well-established rules of claim construction. *See* *Electro Med. Sys. N.A. v. Cooper Life Sciences*, 34 F.3d 0148, 1054 (Fed.Cir.1994). The Court will thus adopt defendant's proposed construction.

## **2. "Central Picture Element," "Surrounding Picture Elements," and "Neighboring Pixels"**

The next dispute involves references in Claim 1 of the '070 Patent to the "central picture element" and "surrounding picture elements." The entire phrase reads as follows: "a comparison circuit means responsive to said input video signal to compare a *central picture element* of said video signal to at least one of the *surrounding picture elements* of said video signal to determine the difference thereof and to further compare said difference to a threshold ...." A related dispute centers on the term "neighboring pixels" in Claim 25 of the '070 Patent, which includes the phrase "comparing two *neighboring pixels* to determine the difference thereof."

Each of these claims concerns the aspect of the technology by which a given pixel is compared to the pixels around it, both spatially and temporally, in order to sharpen the pixel that is being compared. Defendant submits that the "central picture element" is "the pixel under consideration at a given time in the process," and that "surrounding picture elements" are "one or more picture elements which surround a central picture element in either time or space." Plaintiff wishes the Court to construe "central picture element" as "a sample of picture information being noise reduced." In addition, plaintiff objects to defendant's proposed construction of "surrounding picture elements" because the definition employs the word "surround," which plaintiff believes to be "entirely unhelpful in illuminating the proper meaning of the term." Pl.'s Reply at 19. Instead, plaintiff proposes that the Court construe "surrounding" to mean "nearby, proximate to, or within the environs/vicinity of."

Significantly, the parties have agreed that the terms "surrounding picture elements" and "neighboring pixels" should be construed in identical fashion. *See* Pl.'s Proposed Claim Constr. Order at 10. As such, the Court must construe the former term in a manner that is not inconsistent with the construction it would give to the latter.

The parties are not far apart on the meaning of "central picture element." Both parties understand the term to

refer to a particular pixel that is undergoing the noise-reduction process taught by the '070 Patent. Plaintiff objects to defendant's proposed construction because "various picture elements may be 'under consideration' at any point in time." This objection is well-taken. The Court will construe "central picture element" in the manner proposed by plaintiff.

The dispute over "surrounding" and "neighboring" pixels presents the issue of how far away from the central pixel the invention can go in its search for other pixels to compare to and/or combine with the central pixel. While discussion of this topic at the claim construction hearing revealed that the *outer* boundary is not well-defined, the parties agree that comparison is not limited to the pixels immediately adjacent to the central pixel. In light of this agreement, and in keeping with the precept that words in a claim "are generally given their ordinary and customary meaning," *Vitronics*, 90 F.3d at 1582, the Court will construe "surrounding picture element"-and, by extension, "neighboring pixels"-to mean one or more pixels sufficiently near the central pixel in time or space to be useful for the purpose of noise-reducing the central pixel.FN6

FN6. In light of this construction of "neighboring pixels," the Court rejects plaintiff's proposed construction of the phrase "said elements which are normally combined" in Claim 43 of the '070 Patent. The "said elements" in that claim are "a first element and two neighboring elements." '070 Patent, Col. 16:36-37. The Court's construction of "neighboring" renders plaintiff's proposed construction of Claim 43, which seeks to specify that the combined elements are those that "potentially have noise reduction information about each other," superfluous.

### **3. "To Determine the Difference Thereof"**

Also in dispute in Claim 1 of the '070 Patent is the phrase "to determine the difference thereof," as in "a comparison circuit means responsive to said input video signal to compare a central picture element of said video signal to at least one of the surrounding picture elements of said video *signal to determine the difference thereof* and to further compare said difference to a threshold ...."

The Court agrees with defendant that there is no need or reason to substitute the term "dissimilarity" for "difference." However, the Court agrees with plaintiff that the term "difference" is not limited to its mathematical definition.FN7 With this caveat, the Court will adopt defendant's proposed construction of this phrase.

FN7. By contrast, the term "quantizing error" does refer to the mathematical difference between the analog value of a signal and the digital value assigned to the signal during the digitization process. While it is unclear whether the term "quantizing error" remains in dispute, the Court rejects plaintiff's proposed construction of "quantizing error" to the extent it is at odds with this interpretation.

## **CONCLUSION**

In addition to the construction of disputed terms and phrases supplied above, the Court adopts the agreed construction of the parties as set forth in the "Amended Joint Claim Construction Statement" filed September 10, 2002.

**IT IS SO ORDERED.**

N.D.Cal.,2002.

Technology Licensing Corp. v. Videotek, Inc.

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