United States District Court,
N.D. California.

SHARP CORPORATION,
Plaintiff.
v.
AU OPTRONICS CORPORATION, et al,
Defendants.

No. 03-4244 MMC

Aug. 19, 2004.

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ORDER CONSTRUING CLAIMS

MAXINE M. CHESNEY**, District Judge.**

Before the Court is the parties' dispute regarding the proper construction of eight terms in five patents. Plaintiff and defendants have submitted a Joint Claim Construction Statement, pursuant to Patent Local Rule 4-3, as well as briefs and evidence supporting their respective positions on the disputed terms.

The matter came on regularly for hearing on July 26, 2004. Updeep S. Gill of Nixon & Vanderhye P.C. appeared on behalf of plaintiff. Terry D. Garnett and Peter J. Wied of Alschuler Grossman Stein & Kahan LLP appeared on behalf of defendants. Having considered the papers submitted, the claims and specifications set forth in the patent, the tutorial conducted July 6, 2004, and the arguments of counsel, the Court rules as follows.

LEGAL STANDARD

In construing disputed claims, a district court's primary source is the intrinsic evidence of the patent. *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582-83 (Fed.Cir.1996). FN1 Intrinsic evidence includes "the claims, the specification, and the prosecution history," *see* Unique Concepts, Inc. v. Brown,

939 F.2d 1558, 1561 (Fed.Cir.1991), as well as the abstract, *see* Hill-Rom Co. v. Kinetic Concepts, Inc., 209 F.3d 1337, 1341 (Fed.Cir.2000). Language used in the patent is given its ordinary meaning, unless it is clear that the inventor intended the terms to have a different meaning. *See* Vitronics, 90 F.3d at 1582. The patent specification "may act as a sort of dictionary, which explains the invention and may define terms used in the claims." *See* Markman v. Westview Instruments, Inc., 52 F.3d 967, 986 (Fed .Cir.1995), aff'd, 517 U.S. 370 (1996). Although a district court considers the specification in determining the meaning of a disputed claim, it is generally improper to limit the scope of the claim to the examples set forth in the specification. *See* Electro Medical Systems v. Cooper Life Sciences, 34 F.3d 1048, 1054 (Fed.Cir.1994). The claims of the patent, not the specification, "measure the invention." *See* SRI Int'l v. Matsushita Elec. Corp. of America, 775 F.2d 1107, 1122 (Fed.Cir.1985). Finally, the district court reviews the prosecution history, which is "often of critical significance in determining the meaning of the claims." *See* Vitronics, 90 F.3d at 1582.

FN1. A district court considers extrinsic evidence, such as expert testimony, only if the claims are ambiguous and not sufficiently defined by the intrinsic evidence. *See* Bell & Howell Document Management Prods. Co. v. Altek Sys., 132 F.3d 701, 706 (Fed.Cir.1997) (holding that "[w]hen the intrinsic evidence is unambiguous, it is improper for the Court to rely on extrinsic evidence"). A district court may, however, consider "trustworthy extrinsic evidence to ensure that the claim construction it is tending to from the patent file is not inconsistent with clearly expressed, plainly apposite, and widely held understandings in the pertinent technical field." *See* Pitney Bowes, Inc. v. Hewlett-Packard Co., 182 F.3d 1298, 1309 (Fed.Cir.1999). "This is especially the case with respect to technical terms, as opposed to nontechnical terms in general usage or terms of art in the claim-drafting art, such as 'comprising.' " *Id*.

DISCUSSION

The five patents at issue pertain to liquid crystal display devices. The Court considers the disputed terms, in turn.

A. "Linear Light Source"

U.S. Patent No. 5,729,310 (the "'310 patent") claims a "lighting apparatus with excellent maintainability at reduced costs ." *See* '310 Patent, col. 2, lines 53-55. The parties dispute the meaning of the term "linear light source," which first appears in Claim 1:

What is claimed is:

1. A lighting apparatus comprising:

a *linear light source;*

a light guiding plate having an incident surface on which light from said *linear light source* is incident, and an emergent surface from which the incident light emerges; and

an upper frame and a lower frame for holding said *linear light source* and said light guiding plate therebetween,

wherein said upper frame and said lower frame are fixed to each other by at least a pair of protrusions produced on one of said upper and lower frames and a recession formed on the other frame to engage with

said protrusion, each said protrusion having a barb at its end.

See id., col. 6, lines 31-45 (emphasis added).

The term also appears in Claim 10, which claims the "lighting apparatus as set forth in claim 1, wherein said upper frame is made from a material that reflects light and a portion thereof covering said *linear light source* is formed in a shape corresponding to a shape of said *linear light source*." *See* id., col. 8, lines 5-9 (emphasis added).

Plaintiff argues "linear light source" should be construed as a "device arranged in a straight line that provides luminescence" or "a linear device supplying light." (*See* Pl.'s Proposed Order at 1:7-8.) Defendants agree with plaintiff's second proposed construction, with the addition of a limitation, specifically, "a linear device supplying light, without reflector." (*See* Defs.' Proposed Order at 1:7-8.) As clarified at the claim construction hearing, the parties are in agreement that a linear light source and a reflector are separate elements, and defendants are proposing the additional phrase "without reflector" solely to avoid potential jury confusion. Any potential jury confusion, however, can be addressed in the jury instructions.

Accordingly, there being no dispute that the claimed linear light source is not a reflector, the Court construes "linear light source" as "a linear device supplying light."

B. "Gate Electrodes"

U.S. Patent No. 5,028,122 (the "'122 Patent") "relates to a liquid crystal active-matrix display device which has, as addressing devices, reverse stagger type TFTs FN2 whose semiconducting film is made of amorphous silicon." *See* ' 122 Patent, col. 1, lines 11-14. The parties dispute the meaning of the term "gate electrodes," which is found in Claim 1: FN3

FN2. "TFTs" is a reference to "thin film transistors." *See* '122 Patent, col. 1, lines 8-9.

FN3. The term "gate electrodes" is also found in certain dependent claims, as well as independent Claim 9. The parties do not argue that the meaning of "gate electrodes" varies depending on the claim, and have only discussed the term in the context of Claim 1.

What is claimed is:
1. A liquid-crystal active-matrix display device comprising:

picture element electrodes; and

thin film transistors, each including a *gate,* source and drain *electrode* and each corresponding to one of said picture element electrodes, for switching voltages applied to each corresponding picture element electrode;

said thin film transistors and corresponding picture element electrodes being arranged in a matrix format on a substrate;

said thin film transistors being connected to gate lines and source lines at intersections thereof, the gate lines each connecting a plurality of said *gate electrodes* and the source lines each connecting a plurality of said source electrodes;

said drain electrodes being connected to said picture element electrodes;

said *gate electrodes* and non-corresponding adjacent picture element electrodes overlapping at edge portions thereof to form additional capacitors, with a first insulating film and a second insulating film being interposed therebetween.

See id., col. 5, lines 21-46 (emphasis added).
Plaintiff argues that the term "gate electrodes" should be construed as "electrodes that control the current in field-effect transistors." FN4 (*See* Pl.'s Proposed Order at 1:9-10.) Defendants argue the proper construction of a "gate electrode" is "an electrical conductor acting as a gate in a transistor." (*See* Defs.' Proposed Order at 1:9-10.) As clarified at the claim construction hearing, plaintiff does not dispute defendants' proposed construction of "electrode" and defendants do not dispute plaintiff's proposed construction of "gate." Rather, although the parties agree that the gate electrode must be within the transistor, they dispute whether the gate electrode can only be located in the transistor. Specifically, defendants seek a construction limiting placement of the gate electrode to the area in which the TFT is located, while plaintiff seeks a construction that would allow for its extension beyond that point.

FN4. At the claim construction hearing, the parties agreed "field-effect transistors" are synonymous with TFTs.

Although the claim language requires the gate electrode to be "includ[ed]" in the transistor, *see* '122 Patent, col. 5, lines 26-27, the claim does not employ language requiring that the gate electrode be located wholly within the transistor. Nor have defendants shown that "included," when used in reference to two elements, ordinarily means that one element must be located wholly within a second element. Moreover, the specification clearly depicts the claimed device having a gate electrode included in the transistor and extending beyond the transistor. *See* id., Fig. 2 (embodiment of claimed device). Thus, the specification expressly teaches that the claimed gate electrode need not be located wholly within the transistor. *See* Vitronics, 90 F.3d at 1582 (holding specification is "single best guide to the meaning of a disputed term").FN5

FN5. At the claim construction hearing, defendants argued that the figures in the specification do not in fact illustrate the device claimed in the patent. According to the specification, however, the figures illustrate the claimed device. *See* '122 Patent, col. 2, line 65-col. 3, line 13.

Accordingly, the Court construes "gate electrodes" as "electrical conductors that control the current in field-effect transistors."

C. "Overlapping at Edge Portions Thereof"

As noted, the device claimed in Claim 1 of the '122 Patent has "gate electrodes and non-corresponding adjacent picture element electrodes *overlapping at edge portions thereof* to form additional capacitors, with

a first insulating film and a second insulating film being interposed therebetween." *See* '122 Patent, col. 5, lines 41-46 (emphasis added).

Plaintiff argues "overlapping at edge portions thereof" is properly construed as "having edge portions extending over and covering part of each other." (*See* Pl.'s Proposed Order at 1:11-12.) Defendants argue the term should be construed to mean "an edge portion of the gate electrode overlaps an edge portion of the non-corresponding adjacent picture element electrodes." (*See* Defs.' Proposed Order at 1:11-12.)

Plaintiff's proposed construction is based on the ordinary meaning of "overlap," which is to "extend or lie partly over (each other)." *See* Collins Concise Dictionary and Thesaurus 525 (1992).FN6 Defendants' proposed construction does not construe "overlap." Rather, according to defendants, the proper construction should focus on where the overlap can and cannot occur. As defendants explain in their opposition, "the edge portion of the gate electrode must overlap with the edge portion of the non-corresponding adjacent picture element electrode, and *not any other part of that electrode*." (*See* Defs.' Opp. Brief on Claim Construction at 9:10-15 (emphasis added).) At the claim construction hearing, however, defendants clarified they are not arguing the overlap is limited only to the edge portions, but rather that the overlap of the two elements cannot be complete.

FN6. Dictionary definitions are "an available resource of claim construction." *See* Vanguard Products Corp. v. Parker Hannifan Corp., 234 F.3d 1370, 1372 (Fed.Cir.2001) (affirming district court's determination that dictionary definition of "integral" was properly used to construe term where intrinsic evidence did not show inventor used term in more limited or specialized manner).

Defendants do not contend the ordinary meaning of "overlap" supports their proposed construction. Rather, defendants rely on the prosecution history, arguing that the applicant, in an attempt to distinguish prior art, explained the invention as one in which the overlap is not complete.

Statements in the prosecution history may establish that the applicant "disclaimed or disavowed subject matter, narrowing the scope of the claim terms." *See* Nystrom v. Trex Co., 374 F.3d 1105, 1112-13 (Fed.Cir.2004). "[F]or prosecution disclaimer to attach, [Federal Circuit] precedent requires that the alleged disavowing actions or statements made during prosecution be both clear and unmistakable." Omega Engineering, Inc. v. Raytek Corp., 334 F.3d 1314, 1325-26 (Fed.Cir.2003); *see, e.g.,* Microsoft Corp. v. Multi-Tech Systems, Inc., 357 F.3d 1340, 1347 (Fed.Cir.2004) (holding where applicant's statement in prosecution history "unambiguously reflect[ed]" applicant's understanding of its patents as being limited to transmission of data over "telephone line," claim could not be construed as covering transmission of data over "packet-switched network such as the Internet").

Here, the prosecution history reflects that the examiner rejected three of the original claims "as unpatentable under [prior art]." (*See* '122 Patent Presta Decl. Ex. H at SHC 000860.) Specifically, the examiner stated that the "basic structure" of the claimed device "shows in [the prior art]," and that the applicant's addition of a "second insulating layer between the gate electrode and the picture element electrode" was "obvious to one skilled in the art." (*See* id.) The Examiner further stated that it would have been "obvious to modify [the device in the prior art] by using [a] tantalum pentoxide insulating layer and [a] silicon nitride insulating layer." (*See* id. Ex. H at SHC 000861.)

In response, the applicant cancelled the three claims the examiner had rejected and submitted new claims. (

See id. Ex. H at SHC 000887.) In an effort to explain why one of the new claims, Claim 14 (hereafter, in this section, "Claim 9"),FN7 would not be obvious in light of the prior art, the applicant described the prior art as showing a device in which "the gate electrodes are underneath the entirety of the picture element electrode," and in which the gate electrodes "cannot be formed of [ ] a non-transparent material." (*See* id. Ex. H at SHC 000890.) In distinguishing the device claimed in Claim 9 from prior art, the applicant described the claimed device as one in which the "gate electrodes are formed of a non-transparent material," explaining, "[t]his is because the gate electrodes merely overlap with a portion of the picture element electrodes." (*See* id.) Similarly, the applicant stated the claimed "gate electrodes can be of a non-transparent material, in that, the majority of the picture element electrodes does not overlap with the gate electrode." (*See* id. Ex. H at SHC 000891.) The examiner subsequently allowed Claim 9 to issue. (*See* id. Ex. H at SHC 000899.)

FN7. The parties agree that the reference to "Claim 14" in the prosecution history is a reference to Claim 9 in the issued patent. (*See* Pl.'s Brief on Claim Construction at 5:17-22; Defs.' Opp. Brief on Claim Construction at 10:3.)

It is apparent from the above-quoted statements that the applicant clearly and unmistakenly narrowed the scope of Claim 9 to a device in which the "majority of the picture element electrodes does not overlap with the gate electrode." (*See* id. Ex. H at SHC 000891.) Plaintiff does not argue to the contrary. Plaintiff, however, observing that the applicant's statements were made in reference to the device claimed in Claim 9, relies on *Nystrom,* in which the Federal Circuit applied the principle that a district court cannot limit the scope of one claim based on statements in the prosecution history that are "expressly directed" to another claim in the patent. *See* Nystrom, 374 F.3d at 1114-15 (holding where applicant made statements to examiner pertaining to "radius of curvature ratio" when discussing one particular claim, district court erred in limiting all claims to specific radius of curvature ratio to which applicant referred); *see also* Globetrotter Software, Inc. v. Elan Computer Group, Inc., 236 F.3d 1363, 1369 n. 1 (Fed.Cir.2001) (holding defendant's claim construction argument not "relevant," where defendant relied on "portions of prosecution history directed at claims having different limitations than [the claim at issue]"). In other words, plaintiff argues, the statements are directed to the device claimed in independent Claim 9, and not to the device claimed by the other independent claim in the '122 Patent, Claim 1.FN8

FN8. In the prosecution history, Claim 1 is denominated as "Claim 6 ."

Defendants argue that the principle set forth in *Nystrom* is inapplicable here because the applicant's statements pertain to both independent claims in the '122 Patent, in that both claims use the term "overlap." *See* American Permahedge, Inc. v. Barcana, Inc., 105 F.3d 1441, 1446 (Fed.Cir.1997) (holding where applicant, in responding to examiner's comments about two of five claims, made statement limiting meaning of "planar array," such limitation was applicable to other claims using same term).

A review of the prosecution history establishes that the applicant's statements regarding the nature of the overlap between the gate electrode and picture element electrode were not limited to Claim 9. Specifically, the applicant, in discussing a device described in a prior art reference, stated "the picture element electrodes are disposed over the gate electrodes such that the gate electrodes are underneath the entirety of the picture element electrodes, in contradistinction to that of the present invention as claimed in claims [1] and [9]." (*See* '122 Patent Presta Decl. Ex. H at SHC 000893.) Such statement clearly and unmistakenly distinguishes

the devices claimed in both independent claims of the '122 Patent from prior art, and, in each instance, on the ground that the overlap of the gate electrodes and picture element electrodes is not complete.

Accordingly, the Court construes "overlapping at edge portions thereof" as "having edge portions extending over and covering each other to an extent not constituting a majority of any such picture element electrode."

D. "Is Advanced in Time"

U.S. Patent No. 4,649,383 (the "'383 Patent") claims a "method of driving a matrix type liquid crystal display device which compensates for the distortion of scanning signal and data waveforms caused by resistance and capacitance of the display device electrodes." *See* '383 Patent, Abstract. The parties dispute the meaning of the term "is advanced in time," which is first found in Claim 1:

What is claimed is

1. A method of driving a matrix type liquid crystal display device including a liquid crystal picture forming element at the intersection of each line electrode and column electrode and where each liquid crystal element is provided with a thin film transistor connected to the row electrode and the column electrode, comprising the steps of:

(a) applying a scanning signal pulse to the line electrode; and

applying a data signal pulse to the column electrode where the scanning signal pulse *is advanced in time* with respect to the data signal pulse, the advancement in time of the scanning signal pulse being determined in accordance with a resistor-capacitor time constant associated with a capacitance formed by the liquid crystal element and the line electrode and a resistance of the line electrode.

See id., col. 6, lines 4-20 (emphasis added).

In dependent Claim 2, "a trailing edge timing of the scanning signal pulse *is advanced in time* with respect to the data signal pulse." *See* id., col. 6, lines 21-23 (emphasis added). In Claim 4, which is dependent on Claim 2 and thus claims a method wherein "a trailing edge timing of the scanning signal pulse *is advanced in time* with respect to the data signal pulse," a "leading edge timing of the scanning signal pulse is delayed in time with respect to a switching timing of the data signal pulse." *See* id., col. 6, lines 28-31 (emphasis added).

Plaintiff argues that "is advanced in time" should be construed as "is phase shifted earlier in time," (*see* Pl.'s Proposed Order at 1:16-17), while defendants argue that the term is properly construed to mean "the scanning signal pulse is asserted ahead of the data signal pulse," (*see* Defs.' Proposed Order at 1:14-15). Given these two proposed constructions, the parties' dispute is whether "advanced in time" should be construed as "phase shifted earlier in time" or "asserted ahead of."

Plaintiff acknowledges that the ordinary meaning of "advance," as set forth in dictionaries, is "to make occur earlier," *see* Webster's Comprehensive Dictionary, Int'l Edition 21 (1986),FN9 but argues that the prosecution history indicates the applicant "clearly and expressed set forth the intended meaning of the term 'is advanced in time,' " (*see* Pl.'s Opening Brief on Claim Construction at 15:25-26), and that, as a result, dictionary definitions cannot be used to "contradict" that intended meaning, (*see* id. at 16:14-16).

Specifically, plaintiff relies on a document titled "Examiner Interview Summary Record" that states the "examiner agreed that 'advanced in time' and 'phase shift' are substantially equivalent and therefore the remarks stated in paragraph 4 of the last rejection are irrelevant." FN10 (*See* ' 383 Patent Presta Decl. Ex. J at SHC 000790.) Based thereon, plaintiff argues the applicant set forth a special meaning for "is advanced in time," and, in accordance therewith, "phase shift" must be included in the construction of the subject term.

FN9. Plaintiff also offers similar definitions for "advance" found in other dictionaries, such as, "to cause or occur sooner; hasten," *see* American Heritage Illustrated Encyclopedic Dictionary 34 (1st ed.1987), and "to cause (an event) to happen sooner than planned or expected or to bring forward in time," *see* New Lexicon Webster's Dictionary of English Language 12 (1987).

FN10. "Paragraph 4 of the last rejection" reads as follows: "Claims 1-11 are rejected under 35 U.S.C. s. 102(e) as being anticipated by Yasuda et al., Harada, or Fujita. Applicants' remarks address 'phase shift' aspect of this invention and attempt to distinguish the claimed invention over the prior art on this basis. However, the claims do not recite a 'phase shift,' only an 'advance in time' between pulses. Clearly these are two distinct concepts. In view of this, the Yasuda et al. rejection is repeated. Note that Harada specifically recites that the signal pulses are out of phase." (*See* '383 Patent Presta Decl. Ex. J at SHC 000787 .)

Plaintiff relies on the principle that "a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning." *See* Dow Chemical Co. v. Sumitomo Chemical Co., 257 F.3d 1364, 1373 (Fed.Cir.2001) (internal quotation and citation omitted). Under this principle, a district court "must examine the intrinsic evidence to determine whether the patentee has given the term an unconventional meaning." *See id*. As the Federal Circuit has explained, however, "[t]he caveat is that any special definition given to a word must be clearly defined in the specification." *See* Markman, 52 F.3d at 980. Here, the applicant chose not to provide a special definition for "is advanced in time" in the specification. Rather, as noted, plaintiff relies solely on statements in the prosecution history to advance plaintiff's "unconventional meaning" for the disputed term. "Although the prosecution history can and should be used to understand the language used in the claims, it [ ] cannot enlarge, diminish, or vary the limitations in the claims." *See id*. Consequently, plaintiff fails to show that the term "is advanced in time" should not be given its ordinary meaning. *See* Johnson Worldwide Assoc., Inc. v. Zebco Corp., 175 F.3d 985, 989 (Fed.Cir.1999) ("The general rule is, of course, that terms in the claim are to be given their ordinary and accustomed meaning.")

As noted, the ordinary meaning of "advance" is "to make occur earlier" and, consequently, the ordinary meaning of "is advanced in time" is "occurs earlier in time." FN11

FN11. Defendants, in their claim construction brief, argue that the "plain meaning" of "advanced in time" is "asserted ahead of." (*See* Defs.' Opp. Brief on Claim Construction at 15:21-16:3.) At the claim construction hearing, however, defendants stated no disagreement with "earlier in time" as an appropriate construction.

At the claim construction hearing, defendants clarified that, in addition to a construction based on the ordinary meaning of "advance," they seek a construction whereby both the leading edge timing and the trailing edge timing of the "scanning signal pulse" occur earlier in time than the "data signal pulse."

Although defendants have not proposed the specific language of such construction, it appears defendants seek an order construing "is advanced in time" to mean "both the leading and trailing edges of the scanning signal pulse occur earlier in time FN12 than the data signal pulse." The Court declines to adopt this, or a similarly worded, construction.

FN12. As noted, defendants have expressed no disagreement with the use of "earlier in time" in place of "asserted ahead of time."

First, the claim language does not require that the timing of both edges of the scanning signal pulse always be advanced in time with respect to the data signal pulse. Second, nothing in the specification indicates that the inventor intended the claim to be so limited. Indeed, the specification includes a "diagram of the signals supplied to the electrodes of a matrix type liquid crystal device according to an embodiment of the present invention," *see* ' 383 Patent, col. 4, lines 17-20, Fig. 6c, wherein the trailing edge timing of the scanning signal pulse occurs earlier in time than the trailing edge timing of the data signal pulse, while the leading edge timing of the scanning signal pulse occurs later in time than the leading edge timing of the data signal pulse, *see* id . In other words, defendants' proposed limiting construction of "scanning signal pulse" would result in a preferred embodiment falling outside the scope of the patent. As the Federal Circuit has recognized, "[s]uch an interpretation is rarely, if ever, correct and would require highly persuasive evidentiary support," *see* Vitronics, 90 F.3d at 1583; here, such "highly persuasive" evidence is absent.

Third, if the Court were to accept defendants' proposed limitation, the Court would be adopting a construction running afoul of Federal Circuit precedent that a district court "must not interpret an independent claim in a way that is inconsistent with a claim which depends from it." *See* Wright Medical Tech., Inc. v. Osteonics Corp., 122 F.3d 1440, 1445 (Fed.Cir.1997). Specifically, Claim 4, dependent from both Claims 1 and 2, claims a method including a step wherein "a leading edge timing of the scanning signal pulse is delayed in time with respect to a switching timing of the data signal pulse." *See* '383 Patent, col. 6, lines 28-31. If "scanning signal pulse" is construed to mean both the leading edge timing and the trailing edge timing thereof, Claim 1 would be inconsistent with Claim 4, which depends from Claim 1, a result to be avoided. *See* Wright Medical Tech., 122 F.3d at 1445.

Accordingly, the Court construes "is advanced in time" as "occurs earlier in time," and declines to construe "scanning signal pulse" in the limited manner proposed by defendants.

E. "Capacitance Formed by the Liquid Crystal Element and the Line Electrode"

As noted, the second step of the method claimed in Claim 1 of the '383 Patent is "applying a data signal pulse to the column electrode where the scanning signal pulse is advanced in time with respect to the data signal pulse, the advancement in time of the scanning signal pulse being determined in accordance with a resistor-capacitor time constant associated with a *capacitance formed by the liquid crystal element and the line electrode* and a resistance of the line electrode." *See* '383 Patent, col. 6, lines 13-20 (emphasis added). In other words, the "advancement in time" is determinated by a "time constant," which is associated with "a capacitance formed by the liquid crystal element and the line electrode."

Plaintiff argues that the disputed term should be construed as "the property of a capacitor formed by the liquid crystal element and the line electrode by which the capacitor stores electrical energy." (*See* Pl.'s Proposed Order at 1:13-15.). Plaintiff thus seeks a construction of "a capacitance" as "the property of a

capacitor by which the capacitor stores electrical energy." Defendants argue that the proper construction of the term is "the value of the load capacitance formed between the line electrode and the liquid crystal element connected to that line electrode." (*See* Defs.' Proposed Order at 1:16-18.) Defendants thus seek a construction of "a capacitance" as "the value of the load capacitance," and, additionally, seek to limit the location where such capacitance can be formed.

Plaintiff asserts that its proposed construction comports with the ordinary meaning of "capacitance," and offers two dictionary definitions of that word. According to one dictionary, "capacitance" is "the property of a capacitor that determines the amount of electrical charge it can receive and store; capacity." *See* World Book Dictionary 296 (1986). According to a second dictionary, "capacitance" is "the property of a non-conductor by which it stores electrical energy when separated surfaces of the non-conductor are maintained at a difference of potential." *See* New Lexicon Webster's Dictionary of English Language 145 (1987). These definitions, plaintiff argues, support its claimed construction of capacitance as "a property of a capacitor by which the capacitor stores electrical energy."

Defendants do not disagree that plaintiff's proposed construction sets forth the ordinary meaning of the word "capacitance." Rather, defendants argue that two additional limitations should be added to the existing claim language in light of language in the specification and/or the preamble to Claim 1.

First, defendants argue the term "capacitance" should be limited to "load capacitance." Defendants rely on the specification, which, in defendants' view, explains that the reference in the claims to "capacitance" is a reference to "load capacitance." *See* Vitronics, 90 F.3d at 1582 (holding "specification is always highly relevant to the claim construction analysis"; observing specification is "single best guide to the meaning of a disputed term").

In discussing the "conventional driving method" in the prior art, *see* '383 Patent, col. 4, lines 7-11, the specification explains: "If the line electrodes 13 and the column electrodes 14 have [ ] a high resistance, ... the electrode resistance coupled with the load capacitance 24,FN13 connected to the electrodes, and other stray capacitances distort the applied voltagae [sic] waveform," *see* ' 383 Patent, col. 2, lines 45-50 (referring to Figure 4). The specification also describes such "distort[ed]" waveform as a "delayed waveform." *See* id., col. 2, lines 54-57. Thus, although both "load capacitance" and "other stray capacitances" can cause a waveform to be distorted or delayed, only the "load capacitance 24" is described as being connected to the line and column electrodes.

FN13. "24" is a reference to capacitance as illustrated in a figure representing "prior art." *See* '383 Patent, Fig. 2. The specification also refers to "24" as the "capacitance" that is "charged" when the claimed method is employed. *See* '383 Patent, col. 4, lines 44-61.

The "driving method according to the present invention [claimed in the '383 Patent] advances the timing of the scanning signal pulse with respect to the timing of the data signal pulse, to eliminate the effect caused by the delay of the waveform." *See* id., col. 4, lines 29-33. To explain how such an advance occurs, the specification, in discussing one of the figures used in the patent, states that the "amount of change is determined by the maximum delay time T1 which can be estimated from the time constant of the combined resistance and capacitance of the line electrodes." *See* id., col. 4, lines 42-44 (referring to Fig. 6(b)). The specification next teaches that the "capacitance of the line electrodes" in the device wherein the claimed methods are employed is "capacitance 24," *see, e.g.,* id., col. 4, lines 44-48; '383 Patent, col. 4, lines 55-61,

i.e., "load capacitance 24," *see* id., col. 2, lines 48-50.

As noted, Claim 1 comprises a step wherein the "advancement in time" is determined by a "time constant" associated with "a capacitance formed by the liquid crystal element and the line electrode." *See* id., col. 6, lines 4-20. As discussed above, the specification teaches that the "capacitance" involved in such "advancement" is the "load capacitance." Each reference to "capacitance" in the claims is a reference to the "capacitance" involved in the advancement of the timing of pulses, not to the "capacitance" that can distort or delay the waveforms. Consequently, the Court finds that "capacitance," as used in the claims, refers to "load capacitance."

Second, defendants argue that the phrase "connected to that line electrode" must be included in the construction of the disputed term, for the reason that "capacitance formed by the liquid crystal element and the line electrode," *see* id., col. 6, lines 18-20, can only be formed between the line electrode and the liquid crystal element connected to that line electrode. Plaintiffs respond that nothing in the claim language or specification supports such a limitation.

In support of their respective positions, both parties rely on the same language, specifically, the preamble to Claim 1, which describes the device in which the claimed method is employed as a "matrix" that includes "a liquid crystal picture forming element at the intersection of each line electrode and column electrode and where each liquid crystal element is provided with a thin film transistor connected to the row electrode FN14 and the column electrode." *See* id., col. 6, lines 4-9. In other words, the method is employed in a matrix in which, at each point where a line electrode and a column electrode intersect, a liquid crystal picture forming element is connected to those electrodes by a transistor. *See* id. Claim 1 explains that to "drive" the matrix, a data signal pulse is applied to the column electrode and a scanning signal pulse, "advanced in time" with respect to the data signal pulse, is applied to the line electrode, where the advancement of the scanning signal pulse is determined by a time constant associated with a capacitance formed by "the" liquid crystal element, and "the" row, *i.e.,* line, electrode. *See* id., col. 6, lines 4-20.

FN14. The specification uses the terms "line electrode" and "row electrode" interchangeably. *See* id., col. 1, lines 27-29.

The article "the," when used in a claim, "refers the reader back to the first appearance of the element in the claim." *See* Robert C. Faber, *Landis on Mechanics of Patent Claim Drafting* s. 3:9 (5th ed.2003). Here, the initial references to "liquid crystal picture forming element" and "line electrode" in the preamble to Claim 1 are to those elements as they are connected to one another in the matrix. Consequently, Claim 1's later reference to capacitance formed by the liquid crystal element and the line electrode is a reference to capacitance formed by the liquid crystal element and the line electrode at the place where those two elements are connected.

Plaintiff argues that defendants' construction is not supported by the specification because, in plaintiff's view, the "specification refers to many line electrodes and to many liquid crystal elements, and indicates that the capacitance can be formed by any combination thereof." (*See* Pl.'s Reply Brief on Claim Construction at 9:12-14.) In support of this assertion, plaintiff cites to the '383 Patent, col. 3, lines 42-54. The cited passage, however, does not support plaintiff's argument as nothing therein, or in any other part of the specification, the claims, or prosecution history, states that the capacitance associated with the advancement of the timing of the scanning signal pulse can be formed by a liquid crystal picture forming element and a line electrode

that are not connected.

Accordingly, the Court construes "a capacitance formed by the liquid crystal element and the line electrode" as "the value of the load capacitance formed by the line electrode and the liquid crystal element connected to that line electrode."

F. "Overlapping"

U.S. Patent 5,335,102 (the "'102 Patent") relates to "an active matrix driving type display device which performs high-density display by using pixel electrodes arranged in a matrix pattern." *See* '102 Patent, col. 1, lines 8-13. Specifically, the objects of the patent are "to provide an active matrix display device in which any pixel defect can be corrected to an undiscernible level within the assembly device itself" and "to provide a method of manufacturing" such a device. *See* id., col. 6, lines 35-42.

The disputed term, "overlapping," first appears in Claim 1, which states:

What is claimed is:

1. An active matrix display device comprising:

a pair of insulating substrates at least one of which is light transmitting;

scanning lines and signal lines arranged orthogonally on one of said pair of substrates; and

pixel electrodes each connected to an adjacent scanning line and an adjacent signal line via a switching element,

a conductive layer disposed under said adjacent signal line and said pixel electrode and extending therebetween;

an insulating film interposed between said conductive layer and said adjacent signal line, and between said conductive layer and said pixel electrode, respectively; and

a conductive piece formed between said pixel electrode and said insulating film and *overlapping* said conductive layer for facilitating a conductive connection between said conductive layer and said pixel electrode, said conductive layer facilitating another conductive connection between said conductive layer and said adjacent signal line under a defective condition of said switching element.

See id., col. 16, line 60-col. 17, line 5.FN15

FN15. The term is also found in other claims of the '102 Patent. The parties do not contend that "overlapping" has a different meaning when used in those other claims.

Plaintiff argues "overlapping" is properly construed as "extending over and covering a part of." (*See* Pl.'s Proposed Order at 1:18-19.) Defendants argue "overlapping" should be construed to mean "the projection of the edge of the conductive piece is wholly inside of the projection of the edge of the conductive layer (i.e.,

the conductive layer covers the entire conductive piece)." (*See* Defs.' Proposed Order at 1:19-21.)

Plaintiff's proposed construction is based on the dictionary definition of "overlap," which, as discussed above, is "extend or lie partly over (each other)." *See* Collins Concise Dictionary and Thesaurus 525 (1992). Defendants argue, however, that the applicant disclaimed the ordinary meaning of "overlapping" during the application process. Specifically, defendants interpret the prosecution history as including a disclaimer by the applicant of any interpretation of "overlap" that includes the situation "where the conductive piece overlays a portion where the conductive layer is and a portion where the conductive layer is not." (*See* Defs.' Opp. Brief on Claim Construction at 21:12-14.) Plaintiff asserts that defendants have mischaracterized the prosecution history.

As noted, an applicant may "limit the scope of the claims by disclaiming a particular interpretation during prosecution." *See* Microsoft Corp., 357 F.3d at 1347. Here, the applicant initially submitted language for Claim 9, ultimately issued as Claim 1, that, in relevant part, provided for "a conductive piece formed between said pixel electrode and said insulating film and *partially overlapping* said conductive layer for facilitating a conductive connection between said conductive layer and said pixel electrode." (*See* ' 102 Patent Presta Decl. Ex. E at SHC 001620 (emphasis in original; other emphasis omitted.) The examiner rejected the claim, stating as one reason that use of the term "partially overlapping" was "confusing." (*See* id. at SHC 001633.) The Examiner explained:

The phrase "and partially overlapping" is confusing. As written, it sounds as if the conductive piece overlays a portion where the conductive layer is and a portion where the conductive layer is not. As per the figures, the conductive layer is larger than the conductive piece such that the projection, normal to the substrate, of the edges of the conductive piece and the conductive layer do not overlap and the projection of the edge of the conductive piece is wholly inside of the projection of the edge of the conductive layer.

(*See* id.)

In response, the applicant amended the claim to eliminate the word "partially" and stated:

As to the phrase "partially overlapping," although it is submitted that as illustrated in Figure 11, for example, the term adequately indicates that the conductive piece 35, for example, overlaps some but not all of element 34, FN16 the claim nevertheless has now been amended to eliminated [sic] the word 'partially' and thus eliminate the interpretation placed on the former term by the Examiner. As presently amended, it is submitted that all of the terms found in independent claim 9 are clearly readable on the disclosure and that the artisan would not be confused by the terms of the claim when the claim is read in light of the disclosure.

FN16. "Element 34" is a reference to the conductive layer.

(*See* id. at SHC 001653.)

Each of the parties asserts the above-quoted statement by the applicant is supportive of its respective position. According to defendants, by stating he was "eliminat[ing] the interpretation placed on the former term" of "partially overlapping," the applicant disclaimed the interpretation by the examiner, *i.e.,* the applicant intended to "eliminate" the interpretation that "the conductive piece overlays a portion where the conductive layer is and a portion where the conductive layer is not." (*See* id. at SHC 001633.) Plaintiff

argues that the examiner, when making the original comment, was indicating that confusion arose from the use of "partially overlapping" in the claim in light of the figures in the specification illustrating an overlap that, in the examiner's view, was not "partial." Plaintiff interprets the applicant's response as indicating disagreement with the examiner's interpretation, yet stating that the claim would be amended to "eliminate" the examiner's "erroneous interpretation, resulting in a broader claim that covers all possible degrees of overlap." (*See* Pl.'s Opening Brief on Claim Construction at 24:25-28.)

The Court agrees with plaintiff's interpretation of the prosecution history. In context, the applicant's amendment eliminating the word "partial" was intended to make clear that the claim covered a spatial relationship wherein the conductive piece is completely covered by the conductive layer, as was illustrated in one of the figures submitted with the originally-proposed claim language. Nothing in the applicant's response to the examiner indicates the applicant intended to foreclose a relationship where the claimed conductive piece is not completely covered by the conductive layer. At a minimum, the applicant's statements do not evidence a clear and unmistakable intent to disclaim all spatial relationships other than those in which the conductive piece is completely overlapped by the conductive layer.

Accordingly, the Court construes "overlap" as "extending over and covering a part of."

G. "Slidably Detached"

U.S. Patent No. 5,280,372 (the "'372 Patent") relates to "a liquid crystal display device used in a word processor, personal computer and the like." *See* ' 372 Patent, col. 1, lines 6-9. The object of the patent is "to provide a compact LCD device which is easy to assemble and easy to exchange a built-in light source." *See* id., col. 1, lines 34-36.

The term "slidably detached" is found in Claim 1, which reads:

What is claimed is:

1. A liquid crystal display device with a built-in back light device for illuminating a liquid crystal element, said back light device comprising:

a light transmitting plate disposed behind said liquid crystal element;

a cylindrical light source disposed in the vicinity of one end of said light transmitting plate and extending along said one end;

a reflector for reflecting light from said cylindrical light source towards said light transmitting plate, said reflector being integrated to said cylindrical light source and holding a lead wire extending along said cylindrical light source; and

a slide mechanism for allowing said reflector to be *slidably detached* from said light transmitting plate,

said cylindrical light source having an end to be coupled to a power source and another end to be coupled to said power source through said lead wire.

See id., col. 3, line 15-col. 4, line 5 (emphasis added).

1. Applicability of s. 112, para. 6

The parties disagree as to whether the term "slide mechanism," which begins the phrase in which "slidably detached" is found, is subject to construction as a means-plusfunction element under 35 U.S .C. s. 112, para. 6.

Claims written in means-plus-function language are "construed to cover the corresponding structure set forth in the specification and its equivalents." *See* 35 U.S.C. s. 112, para. 6. A district court's task in interpreting a claim written in means-plus-function language is to determine the structure linked by the specification and the prosecution history to the function recited in the claims. *See* B. Braun Medical, Inc. v. Abbott Labs., 124 F.3d 1419, 1424-25 (Fed.Cir.1997).

"It is well settled that a claim limitation that actually uses the word 'means' invokes a rebuttable presumption that s. 112, para. 6 applies." Apex Inc. v. Raritan Computer, Inc., 325 F.3d 1364, 1371 (Fed.Cir.2003) (internal quotation, alteration, and citation omitted). "By contrast, a claim term that does not use 'means' will trigger the rebuttable presumption that s. 112, para. 6 does not apply." *Id*. (internal quotation and citation omitted). Here, because the claim does not use "means," the claim is presumed to be not subject to s. 112, para. 6. *See, e.g.,* Greenberg v. Ethicon Endo-Surgery, Inc., 91 F.3d 1580, 1582-84 (Fed.Cir.1996) (holding "detent mechanism" not subject to s. 112, para. 6; stating "use of a different formulation [than 'means'] generally does not" invoke s. 112, para. 6).

To rebut the presumption that s. 112, para. 6 does not apply, defendants have "the burden of going forward with evidence" and must "demonstrate that the claim term fails to recite sufficiently definite structure or else recites a function without reciting sufficient structure for performing that function." *See* Apex, 325 F.3d at 1372 (internal quotations and citations omitted). Specifically, defendants must "show by a preponderance of the evidence that one of ordinary skill in the art believes the term does not recite sufficiently definite structure." *See* id. at 1373.

In their claim construction brief, the only evidence on which defendants rely is the dictionary definition of "mechanism," wherein the term is defined, *inter alia,* as "a mechanical device." *See* Webster's II New College Dictionary 679 (2001). Based on this definition, defendants argue that "[a] slide mechanism is not understood in the mechanical arts to have any particular meaning; indeed, a mechanism is any mechanical device." (*See* Defs.' Opp. Brief on Claim Construction at 25:9-10.) The relevant inquiry, however, is whether "slide" or "slide mechanism" denotes structure, not whether "mechanism" in the abstract denotes structure. *See* Greenberg, 91 F.3d at 1583 (holding, in analyzing whether "detent mechanism" should be subject to s. 112, para. 6, that "detent (or its equivalent 'detent mechanism')" is term that "denotes a type of device with a generally understood meaning in the mechanical arts"). Defendants offer no evidence, or even discuss, the meaning of "slide."

Having failed to meet their burden to show that persons of ordinary skill in the art would believe "slide mechanism" does not recite sufficiently definite structure, defendants have failed to rebut the presumption that s. 112, para. 6 is inapplicable. *See id*.FN17

FN17. At the claim construction hearing, defendants argued their construction is supported by the Federal Circuit's decision in Toro Co. v. Deere & Co., 355 F.3d 1313 (Fed.Cir.2004), wherein the Federal Circuit held that a claim term beginning with "control mechanism" disclosed a function and did "not provide

sufficient structural description of [the] mechanism." *See* id. at 1325. As noted *infra,* however, there is a significant distinction between "control" and "slide."

Moreover, although plaintiff does not have the burden to produce evidence, plaintiff offers evidence that "slide" denotes "a guiding surface (as a feeding mechanism) along which something slides." *See* Webster's Third New Int'l Dictionary 2142 (1993). As explained by the Federal Circuit, "[m]any devices take their names from the functions they perform," such as "filter," "brake," "clamp," "screwdriver," and "lock." *See* Greenberg, 91 F.3d at 1583. A dictionary definition employing functional terms can make clear the subject noun is a "type of device with a generally understood meaning in the [relevant] art." *See id*. (holding dictionary definition of detent as "mechanism that temporarily keeps one part in a certain position relative to that of another, and can be released by applying force to one of the parts" sufficient to "make clear" term had generally understood meaning in relevant art).

Accordingly, the Court finds "slide mechanism" is not subject to construction as a means-plus-function element under 35 U.S.C. s. 112, para. 6.

2. Construction of "Slidably Detached"

Plaintiff argues that "slidably detached" should be construed as "capable of being separated by sliding." (*See* Pl.'s Proposed Order at 1:20-21.) Defendants argue that "slidably detached" is properly construed to mean "detachment directed by a smooth continuous contact of a linear guide." (*See* Defs.' Opp. Brief on Claim Construction at 26:3-5.) Each party asserts its respective proposed construction is in accord with the ordinary meaning of "slidably detached."

Plaintiff has formulated its proposed construction with reference to the dictionary definitions of "slidable" and "detached," specifically, the definition of "slidable" as "capable of sliding or of being slid," *see* Webster's Third New Int'l Dictionary 2142 (1993), and the definition of "detached" as "standing by itself: separate, unconnected, isolated," *see id*. at 615. Plaintiff submits that in view of the above definitions, "slidably detached" is commonly understood to mean "capable of being separated by sliding."

Defendants argue that the Court should not use the dictionary definitions provided by plaintiff and instead adopt as the common understanding of "slidably detached" a construction defendants base on the definition of "slidably guided" as found in the United States Patent and Trademark Office Manual of Classification ("Manual of Classification").FN18 The Manual of Classification, in a section pertaining to the "class" of "land vehicles," defines "slidably guided" to mean "the movement of the portion of the body is directed by a smooth continuous contact of tracks or telescoping struts or linear guides or similar means." *See* Manual of Classification 296-7 (Dec.2002 ed.). Defendants, however, have not cited a single case, and the Court has located none, in which a claim construction was based on a definition found in the Manual of Classification. By contrast, numerous opinions exist in which the ordinary meaning of a term is based on dictionary definitions. Moreover, the Manual of Classification's definition of "slidably guided" pertains to patents relating to land vehicles, not liquid crystal devices or similar technologies. Consequently, the Court declines to base the construction of "slidably detached" on the definition of "slidably guided" as found in the Manual of Classification.

FN18. "The Manual of Classification is the key to the U.S. Patent Classification System." Manual of Patent Examining Procedure s. 902 .01 (8th ed.2001). "There are over 400 classes in the U.S. Patent Classification

System, each having a title descriptive of its subject matter and each being identified by a class number." *Id*. "The Manual of Classification contains ordered arrangements of the class and subclass titles, referred to as class schedules." *Id*. "These titles are necessarily brief, although they are intended to be as suggestive as possible of the subject matter included." *Id*. "Therefore, it is best not to depend exclusively upon titles to delineate the subject matter encompassed by a class or subclass." *Id*. "Reference to respective definitions and notes is essential." *Id*.

Accordingly, the Court construes "slidably detached" as "capable of being separated by sliding."

I. "Guide Rail"

The remaining disputed term, "guide rail," is found in Claim 4 of the '372 Patent. Claim 4 claims the "device according to Claim 1, wherein said slide mechanism comprises a *guide rail* along which said reflector is slid out from said light transmitting plate." *See* '372 Patent, col. 4, lines 17-20 (emphasis added).

Plaintiff argues the proper construction of "guide rail" is "a rail that serves as a guide." (*See* Pl.'s Proposed Order at 1:22-23.) This proposed construction is based on the dictionary definition of "guide rail," which is "a track or rail that serves as a guide." *See* Webster's Third New Int'l Dictionary of English Language Unabridged 1009 (1993).

Defendants argue that plaintiff's proposed construction "does nothing to clarify the scope of the claim, but simply reverses the order of the two words in the claim term." (*See* Defs.' Opp. Brief on Claim Construction at 27:24-26.) Rather, defendants assert, "guide rail" should be construed as "a rail, between two walls, for guiding the movement of the reflector." (*See* id. at 27:19-21.) Thus, neither party suggests "rail" requires construction.

Defendants have not cited any dictionary definition or other support for their proposed construction. Moreover, nothing in the specification indicates that the "guide rail" must be "between two walls." The only explicit references in the specification to how the "guide rail" is positioned are statements that the guide rail is "fitted to an end of the frame," *see* '372 Patent, col. 2, lines 52-53, and "[o]ne end of the guide rail 22 is made open so that the reflector 14 is slide [sic] along the guide rail 22," *see* id., col. 2, lines 53-55. Nothing in the specification indicates that the guide rail must be bounded by two walls.

Accordingly, the Court construes "guide rail" as "a rail that serves as a guide."

CONCLUSION

For the reasons expressed, the eight disputed terms are construed in the manner set forth above.

IT IS SO ORDERED.

N.D.Cal.,2004.
Sharp Corp. v. AU Optronics Corp.