

United States District Court,  
D. Delaware.

**LG. PHILIPS LCD CO. LTD,**  
Plaintiff.

v.

**TATUNG COMPANY, Tatung Company of America, Inc., Chungwha Picture Tubes Ltd., and  
Viewsonic Corp,**  
Defendants.

No. CIV.A. 05-292-JJF

**June 13, 2006.**

**Background:** Patentee brought action for alleged infringement of patent related to flat-panel display screens and methods of manufacturing them.

**Holdings:** Following Markman hearing, the District Court, Farnan, J., held that:

- (1) term "interconnecting" meant "electrically connecting with conductors";
- (2) term "removing said outer guard ring and row and column interconnections" meant "physically disconnecting said guard ring and row and column interconnections";
- (3) term "outer electrostatic discharge guard ring" referred to "a closed or open ring, or open L or C-shaped line, outside the active matrix display to provide protection from electrostatic discharges";
- (4) term "resistance" meant "a circuit component that has a specified resistance to the flow of electric current and is used to minimize the current surge from an electrostatic discharge";
- (5) term "corner pad" meant "an area of conductive material"; and
- (6) no further construction of term "pickup pad" was needed.

Patent construed.

5,019,002. Construed.

Richard D. Kirk, Esquire of the Bayard Firm, Wilmington, DE Of Counsel: Gaspare J. Bono, Esquire, Matthew T. Bailey, Esquire, and Cass W. Christenson, Esquire of McKenna Long & Aldridge LLP, Washington, DC, for Plaintiff.

Robert W. Whetzel, Esquire and Matthew W. King, Esquire of Richards, Layton & Finger, Wilmington, DE Of Counsel: Christine A. Dudzik, Esquire and Thomas W. Jenkins, Esquire of Howrey LLP, Chicago, IL, Julie S. Gabler, Esquire of Howrey LLP, Los Angeles, CA, and Glen W. Rhodes, Esquire, J. James Li, Esquire, and Qin Shi, Esquire of Howrey LLP, San Francisco, CA, for Defendants.

## MEMORANDUM OPINION

FARNAN, District Judge.

Plaintiff L.G. Philips LCD Co., LTD ("LPL") filed this patent infringement action against Defendants Tatung Company, Tatung Company of America, Inc., Chungwha Picture Tubes, LTD., and ViewSonic Corporation (collectively "CPT"). LPL alleges that CPT has infringed U.S. Patent No. 5,019,002 ("the '002 patent"). LPL's Complaint (D.I.1) also alleges infringement of U.S. Patent No. 6,738,121 ("the '121 patent"), but LPL has withdrawn all claims relating to that patent. (D.I.180.) Presently before the Court is the claim construction dispute of the parties. The parties briefed their respective positions, and the Court held a Markman hearing on March 20, 2006. This Memorandum Opinion provides the Court's construction of the claim terms and phrases disputed by the parties.

### BACKGROUND

The Patent at issue in this lawsuit relates to flat panel, display screens and methods of manufacturing them that include electrostatic discharge guard rings to protect the active elements of the display from electrostatic discharge during and after manufacturing. In their briefing and at the Markman hearing, the parties disputed twenty-six terms and phrases from the claims of both the '002 patent and the '121 patent. By its Order dated March 22, 2006 (D.I.155), the Court ordered the parties to select a reduced number of terms and phrases to be construed by the Court. The Court allowed LPL to submit a maximum of five terms or phrases and CPT a maximum of eight. (D.I.155.) Following the parties' submissions of the terms and phrases to be construed, LPL filed a Notice Of Voluntary Withdrawal Of Claims Relating To U.S. Patent No. 6,738,121 (D.I.180). As a result of that withdrawal and the fact that one claim term was submitted by both parties, there are currently six claim terms and phrases in dispute: "interconnecting," "outer electrostatic discharge guard ring," "resistance," "corner pad," "removing said outer guard ring and row and column interconnections," and "pickup pad."

### DISCUSSION

#### I. Legal Principles Of Claim Construction

[1] [2] [3] Claim construction is a question of law. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 977-78 (Fed.Cir.1995), *aff'd*, 517 U.S. 370, 388-90, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). In interpreting a claim, a court should look first to the intrinsic evidence, i.e. the patent itself, including the claims and the rest of the specification, and, if in evidence, the prosecution history. *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1582 (Fed.Cir.1996). Although it is within the sound discretion of a court to use extrinsic evidence as an aid in construing a claim, extrinsic evidence is "unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1319 (Fed.Cir.2005) (en banc).

[4] [5] [6] A claim term should be construed to mean "what one of ordinary skill in the art at the time of the invention would have understood the term to mean." *Markman*, 52 F.3d at 986. However, "the 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." *Phillips*, 415 F.3d at 1313. Thus, the specification is usually "dispositive; it is the single best guide to the meaning of a disputed term." *Id.* at 1315 (quoting *Vitronics*, 90 F.3d at 1582). In other words, a claim term

can be given its correct construction only within the context of "what the inventors actually invented and intended to envelop with the claim." Phillips, 415 F.3d at 1316.

## II. Construction Of The Disputed Terms and Phrases

The language of independent claim 1 and dependent claims 3 and 7 is representative of the disputed terms and phrases. In full, claim 1 provides (emphasis added):

1. A method of manufacturing active matrix display backplanes and displays therefrom, comprising:

providing a substrate;

forming a pattern of pixels on said substrate;

forming a plurality of row and column intersecting pixel activation lines, *interconnecting* substantially all of said row lines to one another and substantially all of said column lines to one another;

forming an *outer electrostatic discharge guard ring* on said substrate coupled to said interconnected row and column lines via a *resistance* to provide protection from electrostatic discharges between said row and column activation lines during manufacture of the displays; and

*removing said outer guard ring and row and column interconnections* prior to completion of the display.

('002 patent, col. 8, l. 65-col. 9, l. 12.) In full, claim 3 provides (emphasis added): "3. The method as defined in claim 1 including forming at least one *pickup pad* coupled to said resistance via a shunt switching element." ( *Id.* col. 9, ll. 16-18.) In full, claim 7 provides (emphasis added): "7. The method as defined in claim 1 including forming a *corner pad* on at least one corner of the display and aligning scribe lines with said corner pad for removing said outer guard ring and row and column intersections." ( *Id.* col. 9, ll. 29-33.)

### A. Construction of "Interconnecting"

[7] LPL contends that the term "interconnecting" should be construed as "shorting." (D.I. 135 at 12.) LPL argues that "'interconnecting' was used throughout the entire intrinsic record in a manner consistent with this single meaning." ( *Id.*) CPT contends that "shorting" is impermissibly vague because the specification uses that term in a variety of contexts. (D.I. 144 at 6.) CPT proposes instead the construction "electrically connecting with conductors." (D.I. 164 at 1.)

The Court agrees with CPT that LPL's proposed construction is vague. Substituting "shorting" for "interconnecting" would not clarify the meaning of "interconnecting," but rather would make it more ambiguous. In the '002 patent's specification, "short" is used in at least four different ways: the path taken by an unintended, destructive discharge of a static potential ('002 patent, col. 2, ll. 57-62); a physical defect in electrical components resulting in an unintended current pathway ( *Id.*, col. 4, ll. 27-28); a deliberate re-routing of an electrostatic discharge via a shunt transistor ( *Id.*, col. 7, ll. 35-41); and a deliberate connection between electrical elements to provide an alternate current pathway ( *Id.*, col. 5, ll. 65-68). Only the last of these is consistent with LPL's proposed construction of "interconnecting".

[8] LPL contends that CPT's proposed construction of "electrically connecting with conductors" improperly limits the term "interconnecting" to a single embodiment by specifying that the electrical connection must

be made with conductors. (D.I. 158 at 2.) However, the consistent use of a claim term by the inventor in the specification may serve to limit the scope of a claim. *Nystrom v. TREX Co., Inc.*, 424 F.3d 1136, 1145 (Fed.Cir.2005). Here, CPT's proposed construction is consistent with the inventor's use of "interconnecting" throughout the '002 patent's specification. FN1 "Interconnecting" is consistently described or illustrated in figures as using "lines", "shorts", or "jumpers", i.e. conductors, to connect electrical elements. ( *See e.g.*, '002 patent, col. 5, ll. 65-68; col. 6, ll. 6-9; col. 6, ll. 42-43; col. 8, ll. 5-7.) Therefore, the Court will construe "interconnecting" to mean "electrically connecting with conductors."

FN1. Defendants' proposed construction is also consistent with the use of "interconnecting" in U.S. Patent 4,820,222 (the '222 patent), which has the same inventor as the '002 patent and is incorporated by reference in the '002 patent. ('002 patent, col. 2, ll. 30-36.)

### ***B. Construction of "Removing Said Outer Guard Ring and Row and Column interconnections"***

[9] LPL contends that the phrase "removing said outer guard ring and row and column interconnections" does not require construction, but that the proper construction, if one is necessary, is "physically disconnecting said guard ring and row and column interconnections." (D.I. 135 at 23-24.) CPT's proposed construction is "electrically disconnecting the interconnections between rows and between columns, and electrically disconnecting rows and columns from the outer guard ring." (D.I. 137 at 12.) The Court agrees with LPL's construction.

The parties' dispute hinges on the meaning of "removing," with LPL contending that it means "physically disconnecting" and Defendants contending that it means "electrically disconnecting." CPT's construction depends on its assertion that "removing" means "removing a part or component from an electronic circuit." (D.I. 144 at 3; D.I. 138 at 9.) However, as it is used throughout the specification, "removing" is more logically interpreted as referring to the removal of the guard ring and row and column interconnections from the display panel. ( *See* '002 patent, Abstract ("the external guard ring is removed prior to completion of the display"); col. 2, ll. 64-65 ("the external guard ring is removed at the end of the display manufacturing process"); col. 8, ll. 27-30 ("[t]he outer ESD guard ring ... is removed prior to completion of the display").) Thus, the intrinsic evidence indicates that "removing" is used to mean physical disconnection and separation such that the outer guard ring and row and column interconnections are not included in the finished display panel. Therefore, the Court will construe "removing said outer guard ring and row and column interconnections" as "physically disconnecting said guard ring and row and column interconnections."

### ***C. Construction of "Outer Electrostatic Discharge Guard Ring"***

[10] LPL's proposed construction of the phrase "outer electrostatic discharge guard ring" is "a closed or open ring, or open L or C-shaped line, outside the active matrix display to provide protection from electrostatic discharges." (D.I. 158 at 2.) CPT's proposed construction is "a ring of conductor, located external to the inner electrostatic discharge guard ring if the two rings are used together, for draining off electrostatic buildup to prevent electrostatic discharge." CPT does not dispute that the outer guard ring is "a closed or open ring, or open L or C-shaped line." (D.I. 144 at 6.) The parties do dispute whether the guard ring functions to prevent electrostatic discharge ("ESD") or only to protect against damage caused by ESD. FN2 The parties also dispute the meaning of "outer."

FN2. CPT refers to this dispute as "insignificant," but, nevertheless, maintains the position that the proper construction refers to prevention of ESD rather than protection from ESD. (D.I. 164 at 4.)

The specification consistently refers to the function of the ESD guard rings as protecting the active elements of the display from ESD rather than preventing ESD altogether. ( *See* '002 patent, Abstract ("At least one ESD guard ring is provided to protect the active elements of the display from the potential discharge between the row and column lines."); col. 2, ll. 61-61 ("An external guard ring can be formed, which provides protection during manufacture of the displays ..."); col. 8, ll. 27-29 ("The outer ESD guard ring provides ESD protection only during manufacture of the display ...").) CPT points out that the specification uses the word "prevent" or "preventive" to describe the function of the ESD rings. (D.I. 164 at 4.) However, in both of the locations cited, the specification is referring to the prevention of damage caused by ESD rather than to the prevention of ESD itself.

The central dispute over the phrase "outer electrostatic discharge guard ring" is whether "outer" is used in reference to an inner ESD ring or to the entire display panel. CPT contends that "outer" must refer to the outer guard ring's position relative to the inner guard ring. (D.I. 137 at 8.) This contention is untenable. Independent claims 1 and 19 include an outer ESD guard ring, but no inner ESD guard ring. In the context of those claims, CPT's proposed construction would render the adjective "outer" meaningless.

On the other hand, LPL contends that "outer" refers to the outer guard ring's position relative to the active matrix display. CPT concedes that "active matrix display" as used in the '002 patent and in LPL's proposed construction means the entire finished display panel. (D.I. 164 at 3.) CPT argues that the Court should reject LPL's proposed construction because it is based on "the erroneous notion that the outer ring must be physically removed at the end of the manufacture." ( *Id.*) As the Court concluded in section II.B. above, however, the intrinsic evidence indicates that physical removal of the outer guard ring is precisely what the patent teaches. Therefore, the Court will construe "outer electrostatic discharge guard ring" as "a closed or open ring, or open L or C-shaped line, outside the active matrix display to provide protection from electrostatic discharges."

#### ***D. Construction of "Resistance"***

[11] The parties agree that one of ordinary skill in the art would understand "resistance" to mean a physical property of a material or device characterized by opposition to the flow of electric current. (D.I. 135 at 13; D.I. 137 at 9.) They also agree that in the '002 patent, "resistance" is used to denote a circuit component. (D.I. 135 at 13; D.I. 160 at 2.) LPL contends that because "[a]ll circuit components ... have the characteristic of resistance," the Court should construe "resistance" as "any component used to cause a voltage drop during current flow." (D.I. 135 at 13.) CPT's proposed construction is "[a] resistance, as it is used in the claims, means a resistor, which is a circuit element that has a specified resistance to the flow of electrical current. A resistance does not include switching elements such as transistors and diodes." (D.I. 137 at 9.)

[12] LPL's proposed construction cannot be correct because, as CPT points out, (D.I. 137 at 12), it would exclude the single preferred embodiment that incorporates a "resistance." ( *See* '002 patent, col. 8, ll. 1-48.) The only purposes stated for the "resistance" in that embodiment are to provide an "ESD short for high electrostatic potentials ...," ( *Id.*, col. 8, l. 31), and to minimize "the discharge current surge ...," ( *Id.*, col. 8, l. 35). Thus, "resistance" as used in that embodiment, would not fall within the scope of LPL's proposed construction of "any component used to cause a voltage drop during current flow." A claim construction that excludes a preferred embodiment "is rarely, if ever, correct and would require highly persuasive evidentiary support...." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed.Cir.1996) (citations

omitted). The Court finds no such evidentiary support in this case.

On the other hand, CPT's proposed construction unnecessarily limits "resistance" to one specific electric component, a resistor. There is no support in the intrinsic record for such a narrow interpretation. Moreover, a person skilled in the art would certainly understand the meaning of "resistor" so it is logical to conclude that the inventor would have chosen that term had he intended to refer only to that specific component.

[13] LPL correctly notes, (D.I. 163 at 3), that it is improper to import limitations from a preferred embodiment into the claims. *See JWV Enterprises, Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335 (Fed.Cir.2005). However, "there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed.Cir.2005) (quoting *Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186-87 (Fed.Cir.1998)). Here, because "resistance" is used in the claims in a manner somewhat different from its ordinary meaning to one of skill in the art, the only guidance as to how the Court should construe the term is how it is used in the single embodiment in which it appears. That embodiment mentions a "resistance" three times:

The [ESD guard ring] line **210** is connected to the other set of gate or source lines by a shunt line **224**, a shunt transistor **226** and a large resistance **228**, such as 100 K ohms (illustrated schematically).... The resistance provides an ESD short for high electrostatic potentials which can be incurred during manufacturing .... The resistance minimizes the discharge current surge ....

('002 patent, col. 8, ll. 23-34.) In the claims, the term "resistance" is used consistently to denote only a circuit component used to couple the outer ESD guard ring to the interconnected row and column lines and the pickup pad. ( *See e.g. Id.*, col. 9, ll. 63-65; col. 10, ll. 6-8.)

Reading the claims in light of the specification, which describes the "resistance" only in general terms, the Court concludes that the patentee intended the claims and this embodiment in the specification to be coextensive at least in regard to the term "resistance". FN3 Therefore, the Court will construe "resistance" as "a circuit component that has a specified resistance to the flow of electric current and is used to minimize the current surge from an electrostatic discharge."

FN3. The Court also notes that the patentee explicitly stated that certain elements of the invention could vary from the specific descriptions in that embodiment, but did not include the "resistance" among those elements. ('002 patent, col. 8, ll. 49-62.)

### ***E. Construction of "Corner Pad"***

[14] LPL contends that the term "corner pad" does not require construction, but that the proper construction, if one is necessary is "a reference mark for cutting" (D.I. 135 at 24.) CPT contends that the Court should construe "corner pad" as "a pad of metal or other conductive materials that is located at the corner of an outer guard ring, and electrically connected with the outer ring" (D.I. 137 at 15.) CPT argues, ( *Id.*), and LPL does not dispute, that "corner pad" has no inherent meaning to one of ordinary skill in the art and thus can be understood only within the context of the '002 patent's claims and specification. LPL does concede that "[o]ne of ordinary skill in the art would understand the term 'pad' to be a conductive area." (D.I. 135 at 15; D.I. 143 at 15.)

The term "corner pad" appears in only one embodiment in the specification. ( *See* '002 patent, col. 8, ll. 1-48.) That embodiment describes three features of a "corner pad." First, it is connected to each other corner pad by conductive lines of the outer guard ring. ( *Id.*, col. 8, ll. 8-11.) Second, it can be grounded. ( *Id.*, col. 8, ll. 11-12.) Third, it provides alignment for the scribe lines. ( *Id.*, col. 8, ll. 12-15.) The second feature is explicitly optional, so it need not be included in the Court's construction. The third feature is specifically claimed, so it too need not be included in the Court's construction. ( *See, e.g.*, *Id.*, col. 9, ll. 29-33 ("7. The method as defined in claim 1 including forming a corner pad on at least one corner of the display and aligning scribe lines with said corner pad for removing said outer guard ring and row and column intersections.")) Therefore, the Court concludes that LPL's proposed construction of "a reference mark for cutting" is unnecessary and would be redundant. The location of the corner pad is also specifically claimed as being "on at least one corner of the display." ( *See, e.g.*, *Id.*, col. 9, l. 30.) Thus CPT's inclusion of "located at the corner of an outer guard ring" in its proposed construction is both unnecessary and inaccurate.

The remaining issue is whether the "corner pad" must be electrically connected to the outer guard ring. CPT bases its contention that the "corner pad" must be "electrically connected with the outer ring" on a single sentence from the specification: "A corner pad **208** is connected to each other corner pad (not illustrated) by respective outer conductive lines **210** and **212** of the guard ring **200**." ( *Id.*, col. 8, ll. 8-11.) The Court concludes that it would be improper to import this limitation from the specification into the claims. Therefore, to the extent that "corner pad" requires construction, the Court will construe it as "an area of conductive material."

#### ***F. Construction of "Pickup Pad"***

[15] LPL's proposed construction of "pickup pad" is "a conductive area used to electrically connect the back plane to the front plane" (D.I. 135 at 14.) CPT's proposed construction is "a pad located at the corner region of a backplane for aligning the frontplane and backplane" (D.I. 137 at 13.) CPT contends, and LPL does not dispute, that the term "pickup pad" has no inherent meaning to one of ordinary skill in the art, and thus, can be understood only within the context of the intrinsic evidence. (D.I. 137 at 13.) The parties agree, however, that "pad" would be understood by one of ordinary skill in the art to mean a conductive area. (D.I. 135 at 15; D.I. 143 at 15; D.I. 160 at 3.) The Court concludes that neither proposed construction is appropriate and will decline to construe "pickup pad."

LPL's contention that the "pickup pad" is used to electrically connect the back plane to the front plane has no support in the intrinsic evidence. Neither the specification nor the claims of the '002 patent mentions any electrical connection between the front plane and the back plane via the "pickup pad". Both teach only the electrical connection of the "pickup pad" with other elements on the back plane. Thus, LPL's proposed construction cannot be correct.

[16] CPT's proposed construction would violate the doctrine of claim differentiation. In this context, claim differentiation "refers to the presumption that an independent claim should not be construed as requiring a limitation added by a dependent claim." *Curtiss-Wright Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1380 (Fed.Cir.2006) (citing *Nazomi Communications, Inc. v. Arm Holdings, PLC.*, 403 F.3d 1364, 1370 (Fed.Cir.2005)). In the '002 patent, claim 5 depends from claim 3. FN4 Claim 3 claims "[t]he method as defined in claim 2 including forming at least one pickup pad coupled to said resistance via a shunt switching element." ('002 patent, col. 9, ll. 16-18.) Claim 5 claims "[t]he method as defined in claim 3 including forming a corner on the said pad to align the front plane and back plane of the display." ( *Id.*, col. 9, ll. 23-

25.) To construe "pickup pad" as CPT proposes, as "a pad ... for aligning the frontplane and backplane," would be to read the limitation from claim 5 into claim 3, rendering claim 5 superfluous and violating the doctrine of claim differentiation.

FN4. The discussion that follows applies identically to claims 16 and 14, 23 and 21, and 34 and 32.

All of the significant attributes of the "pickup pad" mentioned in the specification are also specifically claimed. ( *Compare*, '002 patent, col. 8, ll. 18-39, *with* id. col. 9, ll. 16-28.) Therefore, the Court concludes that no further construction of the term "pickup pad" is necessary.

### **CONCLUSION**

An Order consistent with this Memorandum Opinion will be entered setting forth the meaning of the disputed terms and phrases in the '002 patent.

D.Del.,2006.

LG. Philips LCD Co. Ltd. v. Tatung Co.

Produced by Sans Paper, LLC.