

United States District Court,  
E.D. Texas, Marshall Division.

**HITACHI PLASMA PATENT LICENSING CO., LTD,**

v.

**LG ELECTRONICS, INC.**

No. 2:07-CV-155-CE

**May 7, 2009.**

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### ***MEMORANDUM OPINION AND ORDER***

**CHARLES EVERINGHAM IV, United States Magistrate Judge.**

#### **I. Introduction**

Hitachi Plasma Patent Licensing Co., Ltd. ("Hitachi") filed its complaint against LG Electronics, Inc. and LG Electronics USA, Inc. (collectively, "LG") on April 23, 2007. Hitachi accuses LG of infringing seven patents: U.S. Patent Nos. 6,297,590 ("the '590 patent"), 7,030,563 ("the 563 patent"), 7,133,007 ("the '007 patent"), 6,630,916 ("the '916 patent"), RE37,444 ("the '444 patent"), 6,707,436 ("the '436 patent"), and 7,009, 585 ("the 585 patent"). The court will address briefly the technology at issue in the case and then turn to the merits of the claim construction issues.

#### **II. Background of the Technology**

The seven patents-in-suit relate to different aspects of plasma screen televisions, specifically, the structure of a plasma display panel ("PDP") and the manner in which electrical signals are provided to the PDP to produce a picture.

The typical PDP comprises two glass substrates, or plates, that face each other and are narrowly separated. The narrow separation between the glass substrates houses a grid of electrodes-the horizontal electrodes,

commonly known as "display" electrodes, and the vertical electrodes, commonly known as the "address" electrodes. The horizontal electrodes are found on the inside face of the front glass substrate, which is the glass substrate facing outward; this is where the image would normally appear. The vertical electrodes are found on the inside face of the rear glass substrate. The rear glass substrate also contains the phosphors, which are fundamental in creating the brilliant color typically associated with PDPs. The arrangement of the vertical and horizontal electrodes in a checkerboard pattern results in numerous intersections. Each intersection defines a specific subpixel; according to the type of electrode configuration, a subpixel may include two or more electrodes. Each subpixel is associated with either a green, blue, or red phosphor color. The association of three adjacent green, blue, and red subpixels forms a pixel. The arrangement of numerous pixels in concert with one another creates a picture.

Also sealed between the two substrates is a mixture of gasses, e.g., Xenon and Neon. This gas mixture is normally in a stable state. Upon excitation by the horizontal and vertical electrodes, however, the gas ionizes to form plasma. This excitation is accomplished via the application of electrical pulses to the electrodes known as "driving." The ionization of the gas releases positively charged ions and negatively charged electrons which, in conjunction with the phosphors, causes the plasma to emit visible and/or ultraviolet light.

The following figure from the '563 patent provides a good representation of the typical configuration of a PDP.



PDPs are categorized according to a number of structural and functional configurations. Some examples include electrode configuration and driving method.

Regarding electrode configuration, there are two general categories, a two-electrode display panel and a three-electrode display panel. In a two-electrode display panel configuration, the horizontal electrodes are not paired, and each subpixel is formed at the intersection of a vertical and a horizontal electrode, commonly known as "data" (X) and "scan" (Y). Two-electrode panels are also called "opposed-discharge" PDPs. In a three-electrode display panel, the pair of display electrodes are commonly referred to as "sustain" (X) and "scan" (Y) electrodes. In this configuration, the horizontal electrodes are paired, and each subpixel is centered on a pair of horizontal display electrodes and one vertical address electrode. Three-electrode panels are also called "surface-discharge" PDPs. Figures 6 and 8 of the '916 patent provide a typical representation of a two- and three-electrode display panel.



A central dispute in this case is whether the '916 patent claims a two- or three-electrode display panel.

In surface-discharge panels, there are two common ways in which the scan (Y) and sustain (X) display electrodes are arranged on the front substrate of the PDP-X-Y-X-Y arrangement or a X-Y-Y-X arrangement. A central dispute in the ' 444, '436, and '585 patents is whether each patent claims one or both display electrode configurations.

Regarding the driving methods, there are two common categories, Address While Driving Method ("AWD") and Address Display Separated Method ("ADS"). In the AWD method, the display lines are selected and displayed one at a time in sequence. This method is often referred to as the "line sequential" method. In the ADS method, all lines are displayed at the same time. A dispute in the '007 and ' 444 patents is whether each patent claims one or both driving methods.

While driving generally describes the method of applying electrical pulses to the electrodes, there are two fundamental periods in driving: the address (or write) period and the display (or sustain) period. The drive methods are further categorized according to their address scheme. In addressing, electrical charges are provided to the electrodes, and the subpixels are prepared to be lit. In each of the above methods, AWD and ADS, the subpixels are addressed by first applying a write pulse to establish wall charge (storage of charge within the walls of a subpixel) in all of the subpixels along a line to be displayed (AWD) or all the subpixels to be lit in the panel (ADS). The wall charges are then subsequently eliminated from those subpixels that are not to be lit. This method is known as "erase addressing." Alternatively, a PDP may address a subpixel by selectively creating a wall charge in only those subpixels to be lit. This method is known as "write addressing." A fundamental dispute in the '916 patent is whether it claims an erase addressing and/or write addressing scheme.

### **III. Discussion**

#### **A. General Principles Governing Claim Construction**

"A claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention." *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed.Cir.1999). Claim construction is an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970-71 (Fed.Cir.1995) (en banc), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996).

To ascertain the meaning of claims, the court looks to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. Under the patent law, the specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. A patent's claims must be read in view of the specification, of which they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* "One purpose for examining the specification is to determine if the patentee has limited the scope of the claims." *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed.Cir.2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee's claims. Otherwise, there would be no need for claims. *SRI Int'l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed.Cir.1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics*, 952 F.2d

1384, 1388 (Fed.Cir.1992). And, although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Scis., Inc.*, 34 F.3d 1048, 1054 (Fed.Cir.1994).

This court's claim construction decision must be informed by the Federal Circuit's decision in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed.Cir.2005) (en banc). In *Phillips*, the court set forth several guideposts that courts should follow when construing claims. In particular, the court reiterated that "the *claims* of a patent define the invention to which the patentee is entitled the right to exclude." *Id.* at 1312 (emphasis added) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed.Cir.2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term "is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313. This principle of patent law flows naturally from the recognition that inventors are usually persons who are skilled in the field of the invention. The patent is addressed to and intended to be read by others skilled in the particular art. *Id.*

The primacy of claim terms notwithstanding, *Phillips* made clear that "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." *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of "a fully integrated written instrument." *Id.* at 1315 (quoting *Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314-17. As the Supreme Court stated long ago, "in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims." *Bates v. Coe*, 98 U.S. 31, 38, 25 L.Ed. 68 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1250 (Fed.Cir.1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction.

Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. The prosecution history helps to demonstrate how the inventor and the PTO understood the patent. *Phillips*, 415 F.3d at 1317. Because the file history, however, "represents an ongoing negotiation between the PTO and the applicant," it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence. That evidence is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims.

*Phillips* rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court condemned the suggestion

made by *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed.Cir.2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before resorting to the specification for certain limited purposes. *Id.* at 1319-24. The approach suggested by *Tex. Digital*-the assignment of a limited role to the specification-was rejected as inconsistent with decisions holding the specification to be the best guide to the meaning of a disputed term. *Id.* at 1320-21. According to *Phillips*, reliance on dictionary definitions at the expense of the specification had the effect of "focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of the claim terms within the context of the patent." *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.* What is described in the claims flows from the statutory requirement imposed on the patentee to describe and particularly claim what he or she has invented. *Id.* The definitions found in dictionaries, however, often flow from the editors' objective of assembling all of the possible definitions for a word. *Id.* at 1321-22.

*Phillips* does not preclude all uses of dictionaries in claim construction proceedings. Instead, the court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the court emphasized that claim construction issues are not resolved by any magic formula. The court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323-25. Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

Of the various claims of the various patents which Hitachi asserts, the parties dispute numerous terms. As briefed by the parties during the claim construction hearing, however, there exists fundamental disputes with the patents, the resolution of which will alleviate the majority of such term disputes. Accordingly, the court will construe those terms which it believes are pertinent to the fundamental issues in this case. The court now turns to a discussion of the disputed claim terms.

## **B. Specific terms in dispute**

The seven patents in this case share common technical concepts. The court will address the disputed terms organized into six sections, with the disputed terms of the '590, '563, '007, '444, and '916 patents discussed individually and the terms of the '436 and '585 patents discussed jointly.

### **1. The '590 Patent**

The '590 patent, titled "Surface Discharge Plasma Display Panel," claims a PDP having a light-shielding film located between adjacent pairs of surface display electrodes. The '590 patent intended to improve contrast by blocking white light through the use of a light shielding film. The '590 patent includes 22 claims. Claim 1 is exemplary of the '590 patent as a whole and reads as follows:

1. A surface discharge plasma display panel of the three-electrode-type, comprising:

a plurality of display electrode pairs arranged in parallel on a front substrate, the display electrodes of one display electrode pair being separated by a discharge slit for surface discharge, and adjacent display electrode pairs being separated by reverse slits where a discharge does not occur, and

a plurality of address electrodes and a plurality of strip-shaped phosphors arranged perpendicular to the display electrode pairs on a rear substrate, the surface discharge plasma display panel further including:

a belt-shaped light shielding film arranged in the reverse slits between adjacent display electrode pairs on the front substrate, for shielding visibility of the stripe-shaped phosphors on the rear substrate.

<i>Disputed Claim Term ('590 Patent)</i>	<i>HPPL Proposed Construction</i>	<i>LG Proposed Construction</i>
"strip[e]-shaped phosphors"	phosphors arranged to give the appearance of bands	bands of phosphor having uniform width that are undivided across display lines [or alternatively, the issue can be simplified by defining this term as "bands of phosphors that are undivided across display lines"]
Claim(s): 1, 9, 10, 11		
"reverse slits"	gaps	gap extending from the edge of one display electrode pair to the edge of the adjacent display electrode pair
Claim(s): 1, 11		

#### a. "strip[e]-shaped phosphors"

Each of the asserted independent claims of the '590 patent require "stripe" or "strip-shaped" phosphors. *See* '590 Patent, cls. 1, 9, 10, & 11. The issue regarding this term is whether the bands of phosphors are necessarily a solid line. The '590 patent's claim of "stripe-shaped phosphor" is directed to the patent's disclosure of multiple columns of phosphors, where each column is entirely one color and arranged such that a stripe-pattern is formed. In its attempt at limiting the term to a solid line, LG cites the patentee's alleged attempt at limiting the phosphors to a "continuous" line. *See id.* at col. 5, ll. 31-32; col. 6, ll. 49-59. As indicated by LG, the seemingly limiting statement is prefaced by the phrase, "present invention." As argued, "when a patent uses the term 'present invention' to describe a disclosed feature, the specification ordinarily limits the scope of the invention." *Defs.' Claim Construction Brief at A-8* (citing *Verizon Servs. Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1308 (Fed.Cir.2007)). The analysis regarding the patentee's use of "present invention," however, is not conclusive. *Verizon* instructs that, "[w]hen a patent thus describes the features of the 'present invention' *as a whole*, this description limits the scope of the invention." *Verizon Servs. Corp.*, 503 F.3d at 1308 (emphasis added). The cited portion, while discussing a continuous layer, does so in the context of a specific embodiment. *See* '590 Patent, col. 5, ll. 32-33. Notwithstanding LG's argument, the court is unwilling to limit the term to an undivided line. While the patentee uses "continuous" in a number of instances in the patent, there is no disavowal of a divided line.

As such, the court defines "strip[e]-shaped phosphors" as "**long, narrow bands of phosphor.**"

#### b. "reverse slits"

This term also appears in claims 1, 9, 10, and 11 of the '590 patent. The parties dispute whether the gaps should be limited to a specific size and shape. Both parties agree that the patent defines the term, but disagree as to the extent. *See* '590 Patent, col. 2, ll. 7-10. The court will not impose an unnecessarily broad and arguably inconsistent definition as suggested by the plaintiff, nor will it re-write the express guidance of the specification as suggested by the defendants.

Accordingly, the court defines "reverse slit" as "a gap (S2) between a line of paired electrodes X and Y, with a width (w2) greater than the width (w1) of the discharge slit (S1)."

## 2. The '563 Patent

The '563 patent, titled "Full Color Surface Discharge Type Plasma Display Device," claims a variety of inventions related to the physical structures of a PDP, including the electrodes, barrier ribs, and phosphors to enhance PDP performance. The '563 patent is a continuation of U.S. Patent No. 5,661,500 ("the '500 patent"). Both patents share the same specification and are directed to the same subject matter.

Claim 1 is exemplary of the '563 patent as a whole and reads as follows:

1. A discharge cell of a surface discharge type plasma display panel, comprising:

a cavity bounded by a pair of opposing and spaced sidewalls of respective barriers, formed on a first substrate, extending commonly with the pair of sidewalls in a first direction, said barriers having respective flat top portions having a width not less than 7:5 ( $\mu$ m) in a second direction;

an address electrode on the first substrate and extending in the first direction;

a pair of display electrodes on a surface of a second substrate, covered by an insulating layer and positioned in opposed relationship with the address electrode, the pair of display electrodes extending in the second direction, transversely to and crossing the barriers and the cavity there between, and defining the discharge cell; and

a phosphor layer within the cavity on one of the first and second substrates, the phosphor layer having a thickness in a range of from 10 ( $\mu$ m) to 50 ( $\mu$ m).

<i>Disputed Claim Term ('563 Patent)</i>	<i>HPPL Proposed Construction</i>	<i>LG Proposed Construction</i>
"cavity"	plain meaning	a portion of a cavity that is undivided across display lines
Claim(s): 9, 44		
"phosphor layer"	plain meaning	a portion of a band of phosphor having uniform width that is undivided across display lines

Claim(s): 9, 13, 44

### a. "cavity"; "phosphor layer"

LG argues that its constructions for the above terms comport with representations made by the patentee during prosecution of the '500 patent. *See* Ex. 11, 14, & 15 to Defs.' Opening Claim Construction Brief. While representations made to the examiner may, in certain circumstances, operate to limit scope, this is not such a circumstance. As suggested by Hitachi, the '500 patent repeatedly and expressly contains "uninterrupted," "continuous," etc., limitations, whereas, the '563 patent does not. Furthermore, the patentee suggests that any such limiting statements were specifically directed towards the claims of the '500 patent. *See* Ex. 10 to PL's Opening Claim Construction Brief. Indeed, the prosecution history indicates that the purported disclaimers were directed to a claim that was subsequently omitted from the '563 patent. "When the purported disclaimers are directed to specific claim terms that have been omitted or materially altered in

subsequent applications (rather than to the invention itself), those disclaimers do not apply." Saunders Group, Inc. v. Comfortrac, Inc., 492 F.3d 1326, 1333 (Fed.Cir.2007). Finally, for the same reasoning as discussed above with respect to "strip[e]-shaped phosphors," the court declines to impose any additional limitations on "cavity" or "phosphor layer."

Accordingly, the court gives the above disputed terms their plain meaning and rejects the limitations proposed by the defendants.

### 3. The '007 Patent

The '007 patent, titled "Full Color Surface Discharge Type Plasma Display Device," is directed to both the structural elements of a PDP and methods for driving a PDP. The '007 patent, like the '563 patent, is a continuation of the '500 patent. As such, the '077 patent and the '563 patent share the same specification and figures.

The '007 patent includes 11 claims. Claim 1 is exemplary of the '007 patent as a whole and reads as follows:

1. A display device, comprising:

an ac surface discharge type plasma display panel, comprising:

pairs of display electrodes on a first substrate, the display electrodes of each pair being arranged adjacent to each other and generating surface discharges in respectively associated discharge cells,

a dielectric layer covering said pairs of display electrodes,

address electrodes on a second substrate selecting respective discharge cells,

a phosphor layer covering said address electrodes; and

a write address type drive system driving each of the electrodes of said panel, wherein said write address type drive system:

a) prior to addressing the discharge cells, applies a voltage between each pair of display electrodes in all the respectively associated discharge cells, such that one electrode of each pair of display electrodes has a positive potential relatively to the other electrode of said pair of the display electrodes, and to the respective address electrode, thereby generating a surface discharge between said pair of display electrodes; and

b) in conducting addressing, applies a selective voltage between one electrode of a selected pair of the display electrodes and a selected address electrode, such that said address electrode has a potential which is positive relatively to the one electrode of said selected pair of display electrodes, thereby generating a write discharge in a selected discharge cell.

<i>Disputed Claim Term ('007 Patent)</i>	<i>HPPL Proposed Construction</i>	<i>LG Proposed Construction</i>
"a phosphor layer"	plain meaning	bands of phosphor having uniform width that is undivided across display lines [or alternatively,



"bands of phosphor undivided across the display lines"]

Claim(s): 1, 9, 10, 11		
"write address type drive system"	a system for operating a plasma display in which the cells in the display panel to be lit during a display period are pre-selected during a previous independent addressing period by applying selective voltages to the cells	a system in which individual lines are sequentially selected and displayed, and in displaying a line corresponding to a pair of display electrodes, a discharge display pulse is applied to one of the pair of the display electrodes and simultaneously an electric field control pulse for writing is selectively applied to the address electrodes
Claims: 1, 2, 3, 4, 9, 10		
"selective voltage"	a voltage difference caused during the addressing period to select a cell to be lit during the display period	voltage applied to the address and display lines when selecting a cell and not applied to the address and display lines when not selecting a cell
Claim(s): 1, 9, 10		
"selected pair of the display electrodes"	a pair of display electrodes for a cell that has been selected during addressing to be lit during the display period	pair of the display electrodes corresponding to a line to be displayed
Claim(s): 1, 9, 10		
"selected address electrode"	the address electrode for a cell that has been selected during addressing to be lit during the display period	address electrode corresponding to a cell to be lit within the line being displayed
Claim(s): 1, 9, 10		
"a phosphor layer formed between said address electrodes and said gas discharge space and exposed to said gas discharge space"	plain meaning, or in the alternative:	a phosphor layer [as separately construed] extending throughout the area separating the address electrode and the gas discharge space
Claim(s): 9	the phosphor layer is deposited after the address electrode and forms the surface of at least part of the inside of the cell	

**a. "a phosphor layer"; "a phosphor layer formed between said address electrodes and said gas discharge space and exposed to said gas discharge space"**

The parties agree that the above terms in the '007 patent should be construed, generally, the same as in the '563 patent; indeed, both parties rely on the same arguments across both patents. For the reasons discussed above, the court gives the terms their plain meanings and rejects the defendants' proposed limitations.

## b. "write address type drive system"

The parties dispute whether the claims of the '007 patent are limited to the AWD method of driving a PDP and whether the claim requires simultaneous voltage pulses to a display electrode and the address electrode. As indicated above, the AWD method selects and displays lines one at a time in sequence, while the ADS method selects and displays all lines at the same time.

The construction proposed by LG indicates its intention of limiting the claims of the '007 patent to the AWD method of driving a PDP. In support, LG points to the patent's consistent use of "selective" and "selected" in the claims. *See* '007 Patent, cls. 1, 9, & 10. As the ADS method does not involve selectivity, LG argues, the claims exclude ADS. Furthermore, LG argues that Figures 16 and 18, allegedly the only two driving embodiments described in the patent, contemplate only the AWD method. *See* '007 Patent, Figs. 16 & 18; col. 17, l. 38; col. 18, ll. 40-41. In response, Hitachi points to various citations within the specification that support its contention that the claims cover both AWD and ADS. *See* '007 Patent, col. 8, ll. 35-39; col. 15, ll. 52-58; cl. 1.

The court agrees with Hitachi that the '007 patent claims cover both the AWD and ADS method. Contrary to LG's assertion, there is no express claiming of the AWD method in the claims nor is there disavowal, either expressly or implicitly, found within the specification. First, the claims themselves contemplate an ADS method. *See* '007 Patent, cl. 1 ("applies a voltage between each pair of display electrodes in all the respectively associated discharge cells ...."). Second, neither Figure 18 nor anything in the written specification requires line sequential addressing and displaying of the lines. To the contrary, the '007 patent expressly discusses the ADS method. *See* '007 Patent, col. 8, ll. 35-39. Absent language in the claims or specification indicating an intention to limit the scope of the patent to the AWD method, the court adopts Hitachi's proposed construction.

## c. "selective voltage" and related claims

The parties disagree as to whether the claimed voltage refers to a voltage difference between the subject electrodes. Claim 1 of the '007 patent describes the addressing procedure as follows:

in conducting addressing, applies a *selective voltage* between one electrode of a selected pair of the display electrodes and a selected address electrode, such that said address electrode has a potential which is positive relatively to the one electrode of said selected pair of display electrodes, thereby generating a write discharge in a selected discharge cell. (emphasis added)

LG's construction seems to require the application of a single voltage to multiple electrodes. The claim limitation, read in light of the specification, however, indicates that the claimed selective voltage contemplates a voltage difference. *See* '007 Patent, cl. 1; Fig. 18. Furthermore, the "and not applied" limitation proposed by LG is unnecessary and confusing.

For these reasons, the court defines "selective voltage" as "**voltage difference used to select a cell to be lit during the display period.**"

## d. "selected pair of the display electrodes;" "selected address electrode"

As with the previous disputed terms of the '007 patent, LG is attempting to limit the claims to the AWD

method. In this instance, it is through the imposition of "line" in its proposed construction. The disputed term should be construed in context of the claim in which it appears-the claims are drawn to the "cell" level, and the use of "line" is ambiguous.

For this reason, the court defines "selected pair of the display electrodes" as "**a pair of display electrodes for a cell.**"

The court defines "selected address electrode" as "**the address electrode for a cell.**"

#### 4. The '916 Patent

The '916 patent, titled "Method and Circuit for Gradationally Driving a Flat Display Device," discloses a method of driving a flat-panel display that enables rapid addressing and full brightness gradations.

The '916 patent includes 12 claims. Claim 1 is exemplary of the '916 patent as a whole and reads as follows:

1. A method for driving a flat display panel with a gradation of visual brightness, the display panel having a plurality of pixels arranged in plural lines, each line having plural pixels and each pixel having a memory function, the method comprising:

dividing, with time, each frame to be displayed on said display panel into a respective plurality of successive subframes, the subframes having respective, predetermined weights of brightness gradations and being individually selected to determine the brightness gradation of the respective frame, each subframe being applied at a common timing with respect to all of the plural lines of the display panel;

further dividing, with time, each of the subframes into respective, first and second successive time periods, each time period having a respective, common timing with respect to all of the plural lines forming the display panel;

controlling respective timings of a start of the first time period and of an end of the second time period of each subframe to be in common for all of the plural lines forming the display panel;

setting the time duration of the second time period of each subframe in correspondence to the respective weight of the brightness gradation of that subframe;

in the first time period of each subframe, writing display data in corresponding pixels of the display panel by selectively forming a memory medium in each of the corresponding pixels;

in the second time period of each subframe, concurrently producing a display in each corresponding pixel in which a respective memory medium was formed in the first time period, for the respective time duration of the second time period of the subframe; and

repeating the operations of the subframe with the first time period and the second time period so as to display a picture with gradation.

<i>Disputed Claim Term ('916 Patent)</i>	<i>HPPL Proposed Construction</i>	<i>LG Proposed Construction</i>
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"pixel"	display cell	crossing points or intersections of scan and data electrodes in an opposed-discharge type display
Claim(s): 1, 2, 12		
"dividing, with time, each of the subframes into respective, first and second successive time periods"	the subframe is divided into at least two sequential periods of time	separating every subframe into two consecutive time periods, an addressing period and a display period
Claim(s): 1, 2		
"selectively forming a memory medium in each of the corresponding pixels"	in the first time period in the subframe, creating a memory medium in the cells to be lit during the second time period	applying cancel pulses as needed to maintain a memory medium in each of the corresponding pixels
"selectively forming a memory medium in each selected pixel"		
"selectively forming a memory medium in a selected pixel of all the pixels"		applying cancel pulses as needed to maintain a memory medium in each selected pixel
Claim(s): 1, 2, 12		
		applying cancel pulses as needed to maintain a memory medium in a selected pixel of all the pixels
"matrix display panel"	a plasma display panel, including either surface or opposed discharge type panels	opposed-discharge type display panel
Claim(s): 3, 6, 12		
"cells"	display cells	crossing points or intersections of scan and data electrodes in an opposed-discharge type display
Claim(s): 6		
"selected ... so as to have a wall charge therein"	in the addressing period, a discharge is caused in the cells to be lit in the display period resulting in a wall charge in the cell	addressed with a cancel pulse so as to maintain a wall charge therein
Claim(s): 6		
"first cell"	address cell	crossing points or intersections of scan and data electrodes in a surface discharge type display
Claim(s): 9		
"second cell"	display cell	area between adjacent scan and sustain electrodes close to a corresponding first cell

Claim(s): 9

a. "pixel;" "cells"; "first cell;" "second cell"; "matrix display panel"

The issue regarding the above terms concerns whether the asserted claims of the '916 patent are directed to opposed-discharge or surface-discharge type PDPs.

There are two embodiments in the '916 patent: opposed-discharge and surface-discharge type PDPs. As discussed above, Figure 6 of the '916 patent illustrates "the structure of a flat panel display of an opposed-discharge type employed in the first preferred embodiment." '916 Patent, col. 3, ll. 30-33. "Cells C [of Figure 6] are formed at crossing points, or intersections, of the X-electrodes and the Y-electrodes." '916 Patent, col. 4, ll. 14-16. Figure 8 of the '916 patent illustrates "the structure of a flat panel display of a surface discharge type employed in the second preferred embodiment." '916 Patent, col. 3, ll. 37-39. "Display cells Cd [of Figure 8] are formed between the adjacent, associated Y-electrode and X-electrode" '916 Patent, col. 6, ll. 17-19. Through their proposed constructions, the parties agree at a minimum that a "pixel" is synonymous with "cell."

LG argues that, because the patent consistently uses "pixel" and "cell" in the context of opposed-discharge type PDPs, those claims disclosing "pixel" and "cell" are directed only towards opposed-discharge type PDPs. Similarly, LG argues that "first cell" is synonymous with "address cell," and "second cell" is synonymous with "display cell." Again, because of the patent's consistent use of "address cell" and "display cell" in the context of surface-charged type PDPs, LG argues that only those claims disclosing "first cell" and "second cell" are directed towards surface-discharge type PDPs. This argument supports LG's contention that the only claims directed to a surface-discharge embodiment are claims 9 and 10, because these are the only claims using the "first cell" and "second cell" nomenclature.

As LG argues correctly, the patent uses "pixel" and "cell" in Figures 6 and 9 (opposed-discharge embodiment) and "address cell" and "display cell" in Figure 8 (surface-discharge embodiment). *See* '916 Patent, Figs. 6, 8, & 9; col. 6, ll. 15-20; col.7, ll. 23-36. Nevertheless, LG's argument is ultimately unpersuasive. Contrary to LG's assertion, the patent also uses "cell" when describing a surface-discharge type PDP. *See* '916 Patent, col. 6, ll. 44-49 (describing the second preferred embodiment in part using "cell" terminology). Furthermore, although different claims may be directed toward different embodiments, neither the claims nor the specification of the '916 patent indicate a clear intent to distinguish between the two types of PDPs based simply on the use of "pixel," "cell," "first cell," and "second cell."

Accordingly, the court adopts Hitachi's proposed constructions of "pixel," "cell," "first cell," "second cell," and "matrix display panel."

**b. "selectively forming a memory medium in each of the corresponding pixels;" "selectively forming a memory medium in each selected pixel;" "selectively forming a memory medium in a selected pixel of all the pixels"; "selected ... so as to have a wall charge therein "**

A second dispute concerning the '916 patent that arises in construing the above phrase is whether the claims disclose both erase-addressing and write-addressing driving schemes. Erase-addressing involves first applying a write pulse to establish a wall charge (varying by the driving scheme, as discussed above) and then subsequently eliminating the wall charge from those subpixels that are not to be lit. *See* '916 Patent, col. 4, ll. 26-31, 41-50. Write-addressing involves applying a write pulse to establish a wall charge in only those subpixels to be lit.

Through its construction, LG seeks to limit the claims to the erase-addressing method. Hitachi disagrees, citing a sentence within the specification discussing the write-addressing method. *See* '916 Patent, col. 8, ll.

20-27. Both parties acknowledge that the cited portion in column 8 refers to write-addressing.

LG argues that a single passage in the specification is insufficient to disclose the write-addressing method. Id. Further, LG argues that this cited language was not present in the Japanese application to which Hitachi points to as the alleged priority date. Essentially, LG argues, first, that the specification does not enable one of skill in the art to apply the disclosed erase-addressing embodiments to a write-addressing application. Second, LG argues that the cited portion of the specification (which explicitly refers to write addressing) precludes Hitachi from claiming an earlier foreign application priority date.

LG's argument is not persuasive. It is the court's opinion that, for claim construction purposes, the cited portion of the specification supports Hitachi's position that the claim scope includes both erase-addressing and write-addressing driving schemes.

Accordingly, the court adopts Hitachi's proposed construction of "selectively forming a memory medium in each of the corresponding pixels," "selectively forming a memory medium in each selected pixel," "selectively forming a memory medium in a selected pixel of all the pixels," and "selected ... so as to have a wall charge therein."

**c. "dividing, with time, each of the subframes into respective, first and second successive time periods"**

The issue regarding the construction of this phrase is simply whether a subframe may include more than two periods. This issue is related to the above issue of whether the '916 patent claims a write-addressing method. As a threshold matter, LG's assertion that "first time period" equates with address period and "second time period" equates with display period is not warranted. LG is improperly introducing a narrowing limitation into the claims.

As to the balance of the construction, the central issue becomes the legal effect of "comprising," and whether the claims allow an additional period, a reset period. LG asserts that the claims clearly and unambiguously disclose a division of the subframe into two time periods, and, because erase-addressing allegedly does not require a reset period, the lack of a disclosed reset period indicates the patentee's intention to limit the claims to erase-addressing. As with its above constructions, LG then points to portions of the specification which arguably disclose dividing a subframe into only two time periods, supporting its claim interpretation. *See* '916 Patent, Fig. 3, 5, & 7; col. 3, ll. 46-57.

Both parties agree that it is common to have an additional reset period, a reset pulse either at the beginning of a frame or at the beginning of a subframe. As Hitachi correctly argues, the presence of "comprising" in the asserted claims does not preclude this additional pulse. The use of "comprising" in a claim "is generally understood to signify that the claims do not exclude the presence in the accused apparatus or method of factors in addition to those explicitly recited." *Phillips Petroleum Co. v. Huntsman Polymers Corp.*, 157 F.3d 866, 874 (Fed.Cir.1998); *Gillette Co. v. Energizer Holdings, Inc.*, 405 F.3d 1367, 1371 (Fed.Cir.2005). LG cites *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1263 (Fed.Cir.1986), in support of its argument. The analysis in *Moleculon* is inapplicable. In *Moleculon*, the method step at issue stated, "engaging eight cube pieces as a composite cube." The defendants in *Moleculon* argued that, in solving a cube of varying dimensions, there was no infringement of the above step. In response, the plaintiff argued that the use of "comprising" allowed not only additional steps, but also additional structural elements within an individual step. The Federal Circuit disagreed with the plaintiff and declined to alter the individual

method claim to include the additional elements. *Id.* at 1271. Here, the plaintiff is not attempting to alter the structural or otherwise functional elements within the method claims. The addition of a reset period would not alter the already recited method steps. This case is closer to *Gillette* than to *Moleculon*, and the court is not willing to construe the above phrase in the limited manner as asserted by LG.

Accordingly, the court adopts Hitachi's construction.

## 5. The '444 Patent

The '444 patent, titled "Method and Apparatus for Driving Display Panel," discloses apparatus and driving method claims that prevent addressing errors and improves efficiency and image quality of a PDP.

The '444 patent includes 55 claims. Claim 39 is exemplary of the '916 patent as a whole and reads as follows:

39. A method for driving an alternating current plasma display panel having a first substrate, a plurality of display lines, each of which display lines comprises a first electrode and a second electrode disposed to extend alongside one another on said first substrate, a second substrate facing said substrate, and a plurality of third electrodes disposed on said second substrate so as to extend across said first and second electrodes, said display lines each including a plurality of cells formed at respective areas where a corresponding third electrode crosses the first and second electrodes of the panel, said method comprising:

selecting a display line from said plurality thereof for writing data;

choosing a cell of the selected display line;

conducting a write discharge for writing data in the chosen cell by conducting an addressing procedure comprising applying a selective write discharge voltage between said corresponding third electrode of the chosen cell and one of said second electrodes;

conducting and maintaining a sustain discharge in the chosen cell for displaying data by applying a sustain discharge voltage between said first electrode and said second electrode; and

applying a predetermined voltage to a second electrode of a display line which has not been selected for writing data during said addressing procedure such that the resulting potential difference between said second electrode of a display line which has not been selected for writing data and a second electrode of a display line which has been selected for writing data is less than the potential difference brought about between said first and second electrodes for executing said sustain discharge, or equal to a voltage applied to each of said third electrodes for executing said selective write discharge

<b><i>Disputed Claim Term ('444 Patent)</i></b>	<b><i>HPPL Proposed Construction</i></b>	<b><i>LG Proposed Construction</i></b>
"a plurality of display lines, each of which display lines comprises a first electrode and a second electrode disposed to extend alongside one another on said first substrate"	multiple pairs of neighboring, parallel electrodes on a substrate with display cells between the	two or more pairs of display electrodes where first electrodes and second electrodes are disposed so that no second electrodes are adjacent to each other (i.e., an X-Y-X-Y arrangement)

pairs

Claim(s): 39		
"a plurality of display lines, each including first and second electrodes disposed to extend alongside one another on said first substrate"	multiple pairs of neighboring, parallel electrodes on a substrate with display cells between the pairs	two or more pairs of display electrodes where first electrodes and second electrodes are disposed so that no second electrodes are adjacent to each other (i.e., an X-Y-X-Y arrangement)
Claim(s): 40		
"each pair of [said/the] first and second electrodes disposed to extend alongside one another and corresponding to a display line"	a pair of neighboring, parallel electrodes on a substrate with display cells between the pair	each pair of said first electrodes and second electrodes disposed so that no second electrodes are adjacent to each other (i.e., an X-Y-X-Y arrangement) and corresponding to a display line

Claim(s): 53, 54

**a. "a plurality of display lines, each of which display lines comprises a first electrode and a second electrode disposed to extend alongside one another on said first substrate" and similar limitations**

The issue with respect to this phrase is whether the scope of the asserted claims of the '444 patent should be limited to covering a particular arrangement of display electrodes referred to as X-Y-X-Y. LG's construction reflects such a limited interpretation, while Hitachi's construction allows for either the X-Y-X-Y configuration or the X-Y-Y-X configuration. This phrase appears in claim 39, and similar language appears in claims 40, 53, and 54.

LG argues that during prosecution, the patentee expressly disclaimed the X-Y-Y-X configuration for claims 39 and 40. LG further argues that, as claims 53 and 54 contain similar language as claims 39 and 40, claims 53 and 54 should similarly be limited to the X-Y-X-Y configuration.

The '444 patent discloses two arrangements of display electrodes. *See* ' 444 Patent, Figs. 3 (disclosing X-Y-X-Y) & 13 (disclosing X-Y-Y-X). Accordingly, Hitachi argues that the claims, with the exception of claim 54, disclose both configurations. Regarding the statement by the patentee during prosecution, Hitachi argues that it is simply an avowal of X-Y-X-Y rather than a disavowal of X-Y-Y-X.

During prosecution of the reissue application, ultimately leading to the ' 444 patent, the patentee made the following statement:

Each of claims 39 and 40 is directed to an apparatus for driving a display panel having a conventional X-Y-X-Y electrode arrangement in which X electrodes (first electrodes) and Y electrodes (second electrodes) are alternatively disposed as shown in Fig. 34. *See* Ex. 16 to Defs.' Opening Claim Construction Brief at 4.

The patentee also made a similar statement in a subsequent supplemental reissue application declaration. *See* Ex. 17 to Defs.' Opening Claim Construction Brief. "Under the doctrine of prosecution disclaimer, a patentee may limit the meaning of a claim term by making a clear and unmistakable disavowal of scope during prosecution." *Purdue Pharma L.P. v. Endo Pharms. Inc.*, 438 F.3d 1123, 1136 (Fed.Cir.2006). Similarly, reinforcing the notice requirement of claims, the Federal Circuit has also held that when a patentee directs certain claims to a specific embodiment, absent an ambiguous interpretation of that



embodiment contained within the specification, "a person skilled in the art could reasonably interpret the inventors' statement as limiting the scope of the claim to [that specific embodiment]." *Brand Management Inc. v. Sutherland Lumber Southwest Inc.*, 1997 WL 351268, (Fed.Cir.1997) (non-precedental). The court agrees with LG. The statements made by the patentee, directing claims 39 and 40 to the X-Y-X-Y configuration, unambiguously limit the claim to such embodiment.

In addition, LG cites to *Omega Engineering, Inc. v. Raytek Corp.* for its argument that the court should construe claims 53 and 54 in a similar manner as claims 39 and 40. *See Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1334 (Fed.Cir.2003). The court does not find LG's argument persuasive as to claims 53 and 54. Claims 53 and 54 did not even exist when the patentee made the limiting statements set forth above. In addition, the language of claim 54 expressly calls out the X-Y-Y-X configuration.

For these reasons, the court adopts LG's constructions for claims 39 and 40 and Hitachi's constructions for claims 53 and 54.

## **b. AWD vs. ADS**

The second significant issue regarding the '444 patent is whether the claims disclose the ADS method. Both parties concede that the claims disclose the AWD method; however, Hitachi argues that the claims also disclose the ADS embodiment, while LG argues that they do not. In their briefings prior to and presentations during the claim construction hearing, the parties did not argue their respective positions on substantially the same claim language. Accordingly, the court will address the issue in general, as a number of claim terms and phrases depend on the determination of this issue.

Similar to its argument with respect to the various PDP types of the '916 patent, LG asserts that the '444 patent, through the patentee's usage of certain terms, implicitly limits the scope of the claims to the AWD drive method. As with the '916 patent, the court is not persuaded by LG's argument. Absent language in the specification indicating an intention to limit the scope of the patent to the AWD method, the scope of the '444 patent claims includes the ADS method. *See '444 Patent*, Fig. 30; col. 22, ll. 1-8; cls. 39 & 53.

## **6. The '436 and '585 Patents**

The '436 patent, titled "Method for Driving Plasma Display Panel," discloses methods for the reset period that make the PDP operate more stably and that improve contrast by reducing light emissions during reset.

The '585 patent, titled "Method of Driving Plasma Display Panel," is a continuation of the '436 patent. Accordingly, both patents share similar specifications.

The '436 patent includes 22 claims. Claim 1 is exemplary of the '436 patent as a whole and reads as follows:

1. A method for driving a plasma display panel in which pluralities of first electrodes and second electrodes are arranged parallel and to each other adjacently, a plurality of third electrodes is arranged to cross the pairs of first and second electrodes at electrode crossing areas and define corresponding discharge cells at the electrode crossing areas and wherein, during a reset period, each of the discharge cells is initialized, during an addressing period, wall charges are provided in the discharge cells according to display data and, during a sustain discharge period, sustain discharges are induced in discharge cells in which wall charges are provided during the addressing period, said method for driving a plasma display panel comprising, during said reset period:

applying a first pulse in which an applied voltage varies with time in a positive direction and a pulse of opposite polarity to the first pulse, so as to induce a first discharge in the discharge cells of respective display lines defined by said first and second electrodes; and

thereafter applying a second pulse, in which an applied voltage varies with time in a negative direction so as to induce a second discharge, as an erase discharge, in the discharge cells of the respective display lines defined by said first and second electrodes.

The '585 patent includes three claims. Claim 1 is exemplary of the ' 585 patent as a whole and reads as follows:

1. A method for driving a plasma display panel having first and second parallel electrodes, comprising:

producing a reset discharge, including inducing a first discharge by a first pulse in which an applied voltage varies with time in a positive direction and inducing a second discharge by a second pulse in which an applied voltage varies with time in a negative direction, the first discharge being induced by said first pulse applied to the second electrode and which rises from a predetermined potential in the positive direction while the first electrode is set to a lower potential than the predetermined potential; and

producing an addressing discharge to write display data and a sustain discharge to cause a display image to glow, according to the display data.

<b><i>Disputed Claim Term</i></b>	<b><i>HPPL Proposed Construction</i></b>	<b><i>LG Proposed Construction</i></b>
"in which pluralities of first electrodes and second electrodes are arranged in parallel to each other and adjacently"	in which pluralities of first and second electrodes are arranged in parallel and adjacently	in which pluralities of first electrodes and second electrodes are arranged in parallel to each other wherein no second electrodes are adjacent to each other (i.e., X-Y-X-Y electrode arrangement)
436 Patent, Claim(s): 12		
"in which plural pairs of first electrodes and second electrodes are arranged in parallel to each other"	in which pairs of first and second electrodes are arranged in parallel	in which pluralities of first electrodes and second electrodes are arranged in parallel to each other wherein no second electrodes are adjacent to each other (i.e., X-Y-X-Y electrode arrangement)
436 Patent, Claim(s): 20		
"induce a second discharge, as an erase discharge"	plain meaning	induce the discharge that comes next in time after the first discharge, as an erase discharge
436 Patent, Claim(s): 12, 20		
"each of the discharge cells is initialized[,] during an addressing period"	during a reset period, each of the discharge cells is initialized, during an addressing period, wall charges are provided in the discharge cells according to the display data	during an addressing period, wall charges of positive polarity and of negative polarity are produced simultaneously on the third electrode at each of the discharge cells

'436 Patent, Claim(s): 12		
"each of the discharge cells is initialized"	the discharge cells are prepared for subsequent addressing	wall charges of positive polarity and of negative polarity are produced simultaneously on the third electrode at each of the discharge cells
'436 Patent, Claim(s): 12, 20		
"a first pulse"	pulse that comes in time before a second pulse	an initial pulse
'585 Patent, Claim(s): 1, 2, 3		
"a second pulse"	pulse that comes in time after the first pulse	pulse that comes next in time after the first pulse
'585 Patent, Claim(s): 1, 2, 3		

**a. "in which pluralities of first electrodes and second electrodes are arranged in parallel to each other and adjacently"; "in which plural pairs of first electrodes and second electrodes are arranged in parallel to each other"**

Similar to the '444 patent, the parties dispute whether the '436 patent discloses the X-Y-Y-X configuration. LG argues that the claims are limited to only the X-Y-X-Y configuration, citing consistent, allegedly limiting language.

Looking to the claims, claim 12 provides that the first and second electrodes are "arranged in parallel to each other and adjacently," and claim 20 provides that the first and second electrodes are "arranged in parallel to each other." '436 Patent, cls. 12 & 20. The court agrees with Hitachi that the language of claim 12 is limited to the X-Y-Y-X configuration by use of the phrase "and adjacently." The court also agrees with Hitachi that the language of claim 20 contemplates both configurations. LG's proposed construction runs directly contrary to the language of the claims. In order to persuade the court to construe the terms in such a manner as to completely ignore portions of the claim language, LG must make a strong showing of disavowal. LG has not made that showing in this case. *See* *Electro Med. Sys., S.A.*, 34 F.3d at 1054.

As such, the court adopts Hitachi's proposed construction of "in which pluralities of first electrodes and second electrodes are arranged in parallel to each other and adjacently" and "in which plural pairs of first electrodes and second electrodes are arranged in parallel to each other."

**b. "a first pulse"; "a second pulse"; "induce a second discharge, as an erase discharge"**

Regarding these terms, LG asserts that the use of "first" and "second" imparts a temporal requirement upon the claim. Hitachi does not dispute this temporal requirement. Hitachi instead takes issue with LG's proposed construction in that it seemingly excludes additional pulses. As indicated above, "the word 'comprising' transitioning from the preamble to the body signals that the entire claim is presumptively open-ended." *See* *Gillette Co.*, 405 F.3d at 1371; *Phillips Petroleum Co.*, 157 F.3d at 874. "More important, the language of the claim itself, with its open transition phrases and use of ordinals to distinguish but not limit claim elements, shows that the invention embraces [other pulses]." *Gillette Co.*, 405 F.3d at 1374.

Accordingly, the court adopts Hitachi's constructions of "a first pulse," "a second pulse," and "induce a second discharge, as an erase discharge."

**c. "each of the discharge cells is initialized during an addressing period"; "each of the discharge cells is initialized"**

The dispute regarding this phrase is whether the claim should be limited to creating positive and negative charges simultaneously on the address electrode during the reset period. Again, by its construction, LG is improperly attempting to limit a claim to the preferred embodiment. *See* '436 Patent, Fig. 5. In support of its limitation, LG cites to the prosecution history. *See* Ex. 27 to Defs.' Opening Claim Construction Brief at 6-9. The court is not persuaded that the terms should be limited as LG suggests. Although the patentee's statements were directed toward initialization, given that the statements were directed explicitly to claim 1, the court is not persuaded the statements amount to a clear disclaimer of claim scope with respect to claim 12.

Finally, the court is persuaded that the absence of a comma in claim 12 is a clerical error. *See* *Novo Indus., L.P. v. Micro Molds Corp.*, 350 F.3d 1348, 1356-57 (Fed.Cir.2003). The disputed language in claim 12 is construed to mean, "each of the discharge cells is initialized, during an addressing period."

Accordingly, the court adopts Hitachi's proposed constructions for "each of the discharge cells is initialized during an addressing period" and "each of the discharge cells is initialized ."

#### **IV. Conclusion**

The court adopts the above definitions for those terms in need of construction. The court recognizes that it has not construed all of the terms proposed in the parties' briefing. Nevertheless, the court has attempted to construe all of the terms that the parties addressed in oral argument as the terms that would allow the parties to resolve their disputes. The parties are ordered that they may not refer, directly or indirectly, to each other's claim construction positions in the presence of the jury. Likewise, the parties are ordered to refrain from mentioning any portion of this opinion, other than the actual definitions adopted by the court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the court.

E.D.Tex.,2009.

Hitachi Plasma Patent Licensing Co., Ltd. v. LG Electronics, Inc.

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