United States District Court,
D. Delaware.

HONEYWELL INTERNATIONAL INC. and Honeywell Intellectual Properties Inc,
Plaintiffs.
v.
APPLE COMPUTER, et al,
Defendants.

C.A. No. 04-1337-JJF

May 4, 2009.

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SPECIAL MASTER'S REPORT AND RECOMMENDATION REGARDING SUPPLEMENTAL CLAIM CONSTRUCTION DM17

VINCENT J. POPPITI**, Esq., Special Master.**

These actions for patent infringement brought by Honeywell International Inc. and Honeywell Intellectual Properties, Inc. (collectively "Honeywell") alleging infringement of United States Patent No. 5,280,371 ("the '371 patent"), which pertains to a liquid crystal display ("LCD") panel providing enhanced brightness while at the same time reducing the appearance of an undesirable interference pattern on the panel called the "moire effect." These LCD panels are associated with end products such as laptop computers, cellular phones, PDAs, digital still cameras, video cameras, portable DVD players, portable televisions, and/or portable game systems sold by the Customer Defendants.

Currently before the Special Master is the supplemental claim construction submitted pursuant to the Special Master's September 24, 2008 Report and Recommendation (D.I.357), modified by Order of the Court on October 23, 2008 (D.I.408). FN1 Having considered all papers submitted by the parties related to the *Markman* process (during both the preliminary and supplementary *Markman* phases), having considered all oral arguments made to the Court on July 10, 2008, and the Court's December 9, 2008 Memorandum Opinion (the "Preliminary *Markman*"), and having heard the oral arguments made during the April 27, 2009

supplemental *Markman* hearing, the following is the Special Master's recommendation for the final claim construction of the term "slight misalignment."

FN1. As detailed below, only the Customer Defendants were permitted to participate in supplemental claim construction briefing.

TECHNICAL BACKGROUND AND DISCLOSURE OF THE '371 PATENT

The '371 patent relates to LCD devices that incorporate one or more lens arrays for providing a luminance profile with respect to viewing angle, wherein the profile can be tailored to a particular application. '371 Patent, Col. 3, ll. 29-36, Col. 5, ll. 12-15. The '371 Patent teaches that the shape of the individual lenslets of the lens array can be selected to provide a unique profile by directing light into the most useful angles for viewing the display. *Id*. Incorporating the lens array into the device, however, introduces the moire effect. '371 Patent, Col. 4, ll. 17-28. This phenomenon occurs because the pattern of the pixels of the LCD panel overlap with the pattern of lenslets of the lens array, which results in visible defects in the form of dark lines on the display. *Id*. This is particularly true at off-axis viewing angles. '371 Patent, Col. 5, ll. 20-21. The '371 patent found that rotating the lens array with respect to the LCD panel by "a few degrees (Typically 2-16)" eliminates residual moire. FN2 ' 371 Patent, Col. 5, ll. 21-28. The patent teaches that this rotation causes a small change in the effective spatial frequency difference of the lens array and the LCD panel to eliminate residual moire. FN3 *Id*.

FN2. The Special Master recognizes that the '371 Patent discloses selecting an appropriate pitch or number of lenses per inch for the lens arrays as the primary method of eliminating moire interference. '371 Patent, Col. 4. ll. 26-34. However, that method is recited in Claim 1, which is not before the Court and, therefore, not addressed here.

FN3. The parties acknowledge that all residual moire cannot be completely eliminated. (4/27/2009 Tr. at 32:12-17). For this Report and Recommendation, the Special Master adopts the words of the specification- "eliminates residual moire."

Figure 12 of the '371 Patent, reproduced below, illustrates the rotation. Figure 12 specifically shows "the angular rotation of the lens array with respect to the LCD matrix array to eliminate residual moire effects." '371 Patent, Col. 2, ll. 40-42.

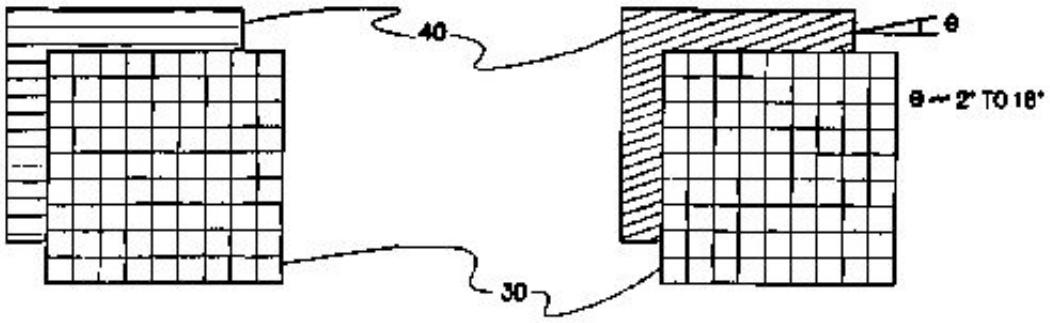

Fig. 12

As is seen in Figure 12, the individual lenslets of the lens array (40) are rotated with respect to a horizontal axis of the LCD panel (30) by a number of degrees (represented by theta (9)) enough to eliminate residual moire. Figure 12 indicates that theta ((theta)) is approximately (~) 2 to 16 degrees. FN4

FN4. The Special Master is mindful that the individual lenslets of the lens array are being rotated. For purposes of this Report and Recommendation and for simplicity, the Special Master will only refer to the rotation of the lens array.

PROCEDURAL BACKGROUND

As the procedural history of this case is well known, the Special Master sets forth only those events related to the matter *sub judice*. FN5

FN5. A through review of the background of this case and the parties is set forth in the Special Master's Report and Recommendation on DM-1 (D.I. 1141 in C.A. No. 04-1338).

Honeywell filed two cases in 2004, mainly against Customer Defendants, alleging infringement of the '371 Patent. On October 7, 2005, Judge Jordan memorialized a September 9, 2005 conference in an Order, which required, *inter alia,* that within 21 days the Customer Defendants shall "provide to Honeywell the identity of the manufacturers of LCDs incorporated into that Defendant's products and product lines which have been identified by Honeywell with specificity (e.g., by make and model number)." (D.I. 140 at 5, para. 1). Once the conditions set forth in the above Order were satisfied, the suits against the Customer Defendants were stayed. (D.I. 140 at 6, para. 4). The Customer Defendants, therefore, did not participate in the preliminary *Markman* briefing or hearing.

On February 1, 2008, Judge Farnan was assigned to the case. In April through June 2008, the Manufacturer Defendants and Honeywell engaged in claim construction briefing and, on July 10, 2008, participated in a claim construction hearing with Judge Farnan.

The Special Master was appointed on May 16, 2008. (D.I. 1035 in C.A. 04-1338). On September 24, 2008, the Special Master issued a Report and Recommendation Regarding the Restructuring of Pending

Honeywell Cases (04-1337, 04-1338, 04-1536, and 05-874), which permitted, *inter alia,* the Customer Defendants to engage in supplemental *Markman* discovery and briefing. (D.I.357). On October 23, 2008, the Court adopted and modified the Special Master's Report and Recommendation. (D.I.408).

On December 9, 2008, the Court issued the Preliminary *Markman,* which provided tentative constructions of the disputed terms. The Court construed, *inter alia,* the term "slight misalignment" as:

a misalignment of typically 2 to 16 degrees between an axis of the lens array and an axis of the pixel arrangement causing moire effects.

(D.I. 500 at 37). The Court declined to adopt the Manufacturer Defendants' proposed construction to define the term "slight misalignment" based on a hard numerical limit, concluding instead that the term should be read functionally. (D.I. 500 at 37). The Court reasoned that the phrase in the specification describing the rotation as "typically 2-6 degrees" does not limit the invention to that specific numerical range. (D.I. 500 at 35) The Court also concluded that the appropriate reference axis for measuring the slight misalignment must be relative to the axis of the LCD panel that is actually interacting with the lens array to cause the moire effect-the pixel arrangement of the LCD panel causing moire. (D.I. 500 at 36-37).

On February 13, 2009, Customer Defendants Fujitsu, Hartford Computer, Nokia and Panasonic (hereinafter "Customer Defendants") requested supplemental briefing regarding the Court's Preliminary *Markman* ruling. (D.I.574). On February 16, 2009, Honeywell wrote to the Special Master with concerns about the 45 day discovery period and timing of trial. (D.I.577). On February 20, 2009, the Customer Defendants proposed a briefing timeline and indicated that no additional discovery was needed. (D.I.590). On February 23, 2009, Honeywell again expressed concerns about the timing of the briefing schedule. (D.I.595). The Special Master held a hearing on February 25, 2009 with the parties regarding those outstanding issues. The Special Master subsequently entered an Order on February 26, 2009 establishing the briefing schedule for the supplemental *Markman* briefing. (D.I.598).

The Customer Defendants' Arguments

On March 12, 2009, the Customer Defendants filed their Supplemental Claim Construction Brief. (D.I.618). Although the Customer Defendants' argue that the Special Master should adopt the construction for all disputed terms already proposed by the Manufacturer Defendants during the Preliminary *Markman* proceeding, the Customer Defendants focus only on the preliminary construction of the term "slight misalignment." (D.I. 618 at 1). The Special Master, therefore, also focuses on the term "slight misalignment" and declines to offer an alternative construction for any other disputed term.

In their opening brief, the Customer Defendants argue that the word "typically" leads to an ambiguous claim construction, creating a "zone of uncertainty." (D.I. 619 at 3). It is this uncertainty, in the Customer Defendants' view, that has allowed Honeywell to accuse products having every possible misalignment, including the minimum of 0 degrees and the maximum of 45 degrees, thereby rendering the term "slight" meaningless. (D.I. 618 at 4, 9).

More specifically, the Customer Defendants argue that the preliminary construction exceeds the patent's scope and is not supported by the intrinsic evidence. First, regarding the claim language itself, the Customer Defendants argue that the inventors' purposeful recitation of the term "slight" should limit the claim to small rotations. (D.I. 618 at 11). The Customer Defendants point out that the inventors elected not to claim "a

misalignment" or the function of the misalignment, such as "a misalignment as large as necessary to eliminate moire." (D.I. 618 at 11). Second, the Customer Defendants argue that the '371 patent specification expressly defines the particular rotations that are "slight" as a few degrees, and more specifically 2 to 16 degrees, as confirmed by Figure 12 ("(theta) ~ 2 (deg.) to 16 (deg.)"). (D.I. 618 at 12). Third, the Customer Defendants assert that the preliminary construction is inconsistent with the ordinary definition of the word "slight." (D.I. 618 at 11).

Finally, the Customer Defendants argue that it is inappropriate to read "slight misalignment" functionally because, as "slight" is a term of measurement, "slight misalignment" should be construed to include a numerical range. (D.I. 618 at 12). In support of this argument, the Customer Defendants cite Sinorgchem Co. v. U.S. Int'l Trade Comm'n, 511 F.3d 1132 (Fed.Cir.2007), where the Federal Circuit interpreted a term of measurement ("controlled amount") as a numerical limitation ("at most 4%") FN6. (D.I. 618 at 17).

FN6. The Customer Defendants also distinguish the line of Federal Circuit cases, such as *Innovad,* which interpret relative terms functionally. (D.I. 618 at 17). *Innovad* is discussed below in section 2.

Based on the above arguments, the Customer Defendants propose a construction with a hard limit: "a misalignment of not less than two and not more than 16 degrees between an axis of the lens array and an axis of the pixel arrangement causing moire effects." (D .I. 618 at 2). Alternatively, if the "typically 2 to 16 degrees" were to remain in the construction, the Customer Defendants propose "a misalignment of a few degrees (typically 2 to 16 degrees) between an axis of the lens array and an axis of the pixel arrangement causing moire effects." (D.I. 618 at 2). As yet another alternative, the Customer Defendants propose replacing the word "typically" with "approximately" or "about." (D.I. 618 at 2).

The Customer Defendants also argue that the appropriate axis for measuring the rotation is the horizontal axis. (D.I. 618 at 7).

Honeywell's Arguments

In its opposition brief, filed on March 26, 2009, Honeywell argues that the Customer Defendants simply reassert the same arguments made by the Manufacturer Defendants in the Preliminary *Markman* proceeding, which the Court has already considered and rejected. Honeywell asserts, therefore, that the Preliminary *Markman* should be the final *Markman*. (D.I. 628 at 1). Additionally, Honeywell argues that the Court's construction is consistent with the "intrinsic disclosure of the specification and avoids any indefiniteness challenge because it is grounded in the purpose for rotating the array in the first instance," namely to eliminate residual moire. (D.I. 682 at 2).

Honeywell further asserts that the term "slight misalignment" is best understood functionally, as the Court concluded, and not by means of a limited range of rotational angles.

More specifically, Honeywell argues that the moire-combating technique of rotation is taught in the specification and that the claim language itself recites the relationship between the rotation and the resultant slight misalignment. (D.I. 628 at 18-19). Honeywell also argues that the specification of the '371 Patent supports the notion that the rotation could extend outside of the 2 to 16 degree range, where necessary to create the small change in effective spatial frequency difference for the purpose of eliminating moire. (D.I. 628 at 28). Honeywell emphasizes that the specification (at Col. 5, ll. 24-25) specifically discloses that the

rotation results in the slight misalignment that eliminates the residual moire. (D.I. 628 at 28). Honeywell further observes that no other passage in the specification relates to the claimed "slight misalignment." (D.I. 628 at 28).

In addition, Honeywell cites to a number of Federal Circuit cases, where courts will not ordinarily limit a general descriptive word, such as slight, to a numerical range found in the specification. Honeywell argues these cases support interpreting such general descriptive words functionally. (D.I. 628 at 23). For example, Honeywell cites to Innovad, Inc. v. Microsoft Corp., 260 F.3d 1326, 1332-33 (Fed.Cir.2001), in which the court declined to limit the general descriptive word "small volume" to a particular mathematical range. Instead, Honeywell points out, the court interpreted "small volume" as "reasonably portable" based on its function as described in the specification. (D.I. 628 at 23, 27).

Regarding the scope of "typically 2-16 degrees," Honeywell argues that it has never accused any devices with only 0 degrees of rotation, as the Customer Defendants suggest. (D.I. 628 at 16). Honeywell, however, acknowledges that under the Court's construction, devices with 45 degrees of rotation "may ultimately be found to infringe" Claim 3. (D.I. 628 at 17).

The Customer Defendants' Reply

In the Customer Defendants' reply brief, filed on April 2, 2009, they reiterate that Honeywell is reading out "slight" by claiming that any rotation between 0 and 90 degrees falls within the Court's construction. (D.I. 633 at 1-3). The Customer Defendants emphasize that, although 2-16 degrees is typical, other atypical rotations can eliminate moire. *Id*.

Additionally, the Customer Defendants assert that the specification only supports measuring the degree of rotation from a horizontal axis, which the Customer Defendants argue is also confirmed by Honeywell's expert. (D.I. 633 at 6). The Customer Defendants submit that only their proposed construction "gives meaning to all of the limitations of claim 3 consistent with the specification." (D.I. 633 at 12).

On April 27, 2009, the Special Master conducted a supplemental *Markman* hearing (the "Hearing"), with Honeywell and the Customer Defendants.FN7 Prior to the Hearing, the Special Master provided a list of questions that the parties were to address.

FN7. Counsel for Samsung SDI and Samsung SDI America, both Manufacturer Defendants, requested, and without objection from Honeywell, were granted leave to participate in the hearing.

DISCUSSION

Initially, the Special Master notes that consistent with the parties' briefing and the Preliminary *Markman,* the term "slight misalignment" is shorthand for the wherein clause of Claim 3:

wherein at least one of said first and second lens arrays is rotated about an axis perpendicular to said liquid crystal panel in order to provide a slight misalignment between said lenslets and said liquid crystal panel.

In the Preliminary *Markman,* the Court construed "slight misalignment" as:

a misalignment of typically 2-16 degrees between an axis of the lens array and an axis of the pixel

arrangement causing moire effects.

(D.I. 500 at 37). The dispute between the parties regarding the Court's construction centers on to the scope of "typically 2-16 degrees."

1. Hard Limits Should Not Be Part of the Construction of "Slight Misalignment"

The Special Master concludes that hard limits should not be part of the construction of "slight misalignment."

A claim element claimed in general descriptive words, like "slight," is not ordinarily limited to the specific numerical range described in the specification. Modine Mfg. Co. v. United States Int'l Trade Comm'n, 75 F.3d 1545, 1551 (Fed.Cir.1996) (citing Specialty Composites v. Cabot Corp., 845 F.2d 981, 987 (Fed.Cir.1988)) ("Particular embodiments appearing in the specification will not generally be read into the claims. What is patented is not restricted to the examples, but is defined by the words in the claims."). To include the hard limit of not less than 2 degrees and not more than 16 degrees would, in the Special Master's view, impermissibly read the preferred embodiment of the invention into the construction of "slight misalignment". Liebel-Flarsheim Co. v. Medrad, Inc., 358 F.3d 898, 906 (Fed.Cir.2004) ("Even when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction."). *See also,* Brassica Protection Products LLC v. Sunrise Farms (In re Cruciferous Sprout Litig.), 301 F.3d 1343, 1348 (Fed.Cir.2002) (declining to construe a claim term with specific numerical limits when, among other reasons, the patent included no indication that the claim term should be so limited); Conoco, Inc. v. Energy & Envtl. Int'l, L.C., 460 F.3d 1349, 1358 (Fed.Cir.2006) (declining to limit the term to a specific numerical limit when the language was only in the preferred embodiment and not used to limit the claim); Renishaw PLC v. Marposs Societa' per Azioni, 158 F.3d 1243, 1249 (Fed.Cir.1998) ("when a claim term is expressed in general descriptive words, [a court] will not ordinarily limit the term to a numerical range that may appear in the written description in other claims."). It follows, *a fortiori,* that reading the phrase "a few degrees" into the construction is likewise improper because this language incorporates into the claim a limitation related to the preferred embodiment taught in the specification ("[t]his rotation of the lens array by *a few degrees* (Typically 2 to 16 degrees) from the horizontal axis...."). '371 Patent, Col. 5, ll. 23-25 (emphasis added).

The Special Master recognizes that in some cases the preferred embodiment may describe the invention itself such that the claims are not entitled to a scope broader than that embodiment. Modine 75 F.3d at 1551. In the Special Master's view, this is not the case in the patent at issue because there is nothing in the specification or drawings that demonstrates the inventors' intent to restrict the rotation to specifically 2 to 16 degrees. In point of fact, the description of the rotation as "[t]ypically 2 to 16 degrees," and the illustration as approximately 2 to 16 degrees ("(theta) ~ 2 (deg.) TO 16 (deg.)") in Figure 12, demonstrates that the rotation is broader than the range of not less than 2 and not more than 16 degrees. The use of the word "typically" and the symbol for "approximately," in the Special Master's view, confirms that the inventors contemplated a range outside of not less than 2 and not more than 16 degrees. Furthermore, the Customer Defendants have pointed to nothing in the prosecution history suggesting that the inventors intended to limit the invention to strictly 2 to 16 degrees of rotation. Accordingly, the Special Master declines to adopt the Customer Defendants' proposed construction that the rotation must be limited to not less than 2 and not more than 16 degrees, or other words to that effect.

The terms "small" and "about," advanced by the Customer Defendants at the Hearing, are, in the Special Master's view, no less problematic.FN8 (4/27/2009 Tr. at 86:13-17). The Special Master agrees with Honeywell that the term "small" simply replaces one relative term for another. Additionally, the term "about" is synonymous with the term "approximately" in that they both mean "close to." FN9 *See, e.g.,* American Heritage Dictionary. Thus, the use of the term "about" in the construction would effectively impermissibly read in the preferred embodiment of (theta) ~ (approximately) 2 (deg.) TO 16 (deg.).

FN8. The Customer Defendants' specific proposal is "a small misalignment of about 2-16 degrees between an axis of the lens array and an axis of the pixel arrangement causing moire effects due to the structure of the display." (4/27/2009 Tr. at 86:13-17).

FN9. The Special Master expects the same conclusion is applicable by replacing the term "typically" with "approximately" or "about."

Similarly, the Special Master agrees with the Customer Defendants that the use of the term "typically," with the hard limit of between 2 to 16 degrees, creates uncertainty regarding atypical scenarios. Further, the Special Master is mindful that the term "typically" is a term of frequency and not measurement and therefore does complement the term "misalignment." Furthermore, "typically 2-6 degrees" provides no numerical limit on the construction of "slight misalignment," thus, in the Special Master's view, rendering it superfluous. Accordingly, because "typically 2-16 degrees" does not bind the construction and is potentially confusing, the Special Master concludes it should not be part of the construction.

2. "Slight Misalignment" Should be Construed Functionally

The Special Master concludes that "slight misalignment" should be read functionally.

The Special Master considers the Federal Circuit's opinion in *Innovad* as being particularly instructive. Innovad, Inc. v. Microsoft Corp., 260 F.3d 1326 (Fed.Cir.2001). In *Innovad,* the relevant claim related to a telephone dialer system that included "a case having at least one surface for substantially enclosing a small volume." *Id*. at 1329. The lower court construed "small volume" as smaller than the prior art dialer unit which had a 4.4 cubic inch volume. *Id*. at 1330. The Federal Circuit rejected the lower court's construction and focused instead on the fact that the specification equated the dialer's size with its function: "[t]he dialer unit has no keypad, it is much smaller than existing repertory dialers and thus more portable and suitable for specialty advertising purposes." *Id*. at 1332-1333. Because the specification did not provide a specialized meaning for the term "small volume," the Federal Circuit construed the term functionally-that is with respect to the dialer's function of being "comfortably portable," concluding that " 'small volume' does not limit the dialer to a particular size as long as it performs its function." *Id*.

Interpreting "slight misalignment" in terms of the function of the rotation is, in the Special Master's view, consistent with both the claim language and the specification. Claim 3 recites a relationship between the rotation and the slight misalignment ("rotated ... in order to provide a slight misalignment"). '371 Patent Col. 5 ll. 39-42. The specification explains a similar relationship between rotation and moire effect, that is the rotation of the lens array with respect to the LCD panel results in the elimination of residual moire. '371 Patent, Col. 5, ll. 24-25. Thus, the claim language read in the context of the specification per Philips v. AWH Corp., 415 F.3d 1303, 1315 (Fed.Cir.2005), links "slight misalignment" in the claim to the elimination

of residual moire in the specification.

The Special Master rejects the Customer Defendants' argument that the claim must specifically recite a functional limitation related to eliminating the residual moire effect, whether as a means-plus-function or otherwise, in order to interpret the claim functionally. In the Special Master's view, such a requirement is contrary to *Innovad,* in which no such functional limitations were recited in the relevant claims. Innovad, 260 F.3d at 1332-33.

In reaching these conclusions, the Special Master also rejects the Customer Defendants' reliance on Sinorgchem Co. v. United States Int'l Trade Comm'n, 511 F.3d 1132 (Fed.Cir.2007), for the dual proposition that "slight misalignment" should (i) not be construed functionally; and (ii) should be construed by using a numerically precise range. In *Sinorgchem,* the Federal Circuit construed "controlled amount" using a numerical limitation, specifically, processes that use "up to about 4% H_2O." *Id*. at 1140. This construction was based on a special definition of "controlled amount" found in the specification, indicating the patentee was its own lexicographer. *Id*. at 1136. It is clear that the Federal Circuit was also influenced by the fact that the phrase "controlled amount" was set off by quotation marks in the specification indicating that what followed was a definition. *Id*. Concluding that because the definition of "controlled amount" only encompassed processes using at most 4% water, the Federal Circuit ruled that the Sinorgchem's process, which always used more than 10% water, did not literally infringe. *Id*. at 1140-1141.

Unlike *Sinorgchem,* the term "slight misalignment" appears nowhere in the specification of the '371 patent. The Customer Defendants are, therefore, unable to point to a special definition for "slight misalignment" in the specification. Instead, the Customer Defendants argue that the rotation is defined as a "few degrees (typically 2 to 6 degrees)." (D.I. 618 at 2). While the Special Master agrees that there is an obvious relationship between the rotation of the lens array and the slight misalignment as described in the specification and claimed, that relationship, in the Special Master's view, does not amount to a special definition demonstrating that the inventors were was acting as their own lexicographer in defining "slight misalignment." Therefore, in the Special Master's view, *Sinorgchem* is inapposite.

The only alternative to reading "slight misalignment" functionally is to accept the Customer Defendants' argument advanced at the Hearing, to construe the term structurally. The Special Master concludes that a structural construction would have the same problems as incorporating a hard limit. Indeed, a structural construction would necessarily require interpreting "slight" as a numerical range rather than as a function of eliminating residual moire. And as discussed at section 1 *supra,* incorporation of a numerical range into the construction is generally disfavored and would improperly include the preferred embodiment.

3. The Reference Axis is Relative to the Edges of the LCD Panel

The Special Master concludes that the '371 patent is not limited to only vertical luminance tailoring, and therefore, the rotation of the lens arrays should likewise not be limited to measurements from only the horizontal axis. (D.I. 500 at 36).

In the Preliminary *Markman,* the Court cited language from the specification, which was illustrative that the lens arrays are not limited to the vertical viewing angle. (D.I. 500 at 13). Accordingly, the Court concluded that the lens arrays may be oriented either vertically or horizontally, depending on the preferred viewing angle. Although Figure 12 depicts a rotation as measured from the horizontal axis of the LCD panel, in the Special Master's view, Figure 12 is only an example demonstrating the general concept of rotation to

eliminate moire. *Astra Aktiebolag v. Andrx Pharms., Inc. (* In re Omeprazole Patent Litig.), 483 F.3d 1364, 1372 (Fed.Cir.2007) ("Absent some clear intent to the contrary, this court does not import examples from the specification into the claims.") Given the lens arrays may be vertically or horizontally oriented, the Special Master concludes the rotation of a lens array can be measured from either the horizontal and/or vertical axes of the LCD panel, that is from the edges of the LCD panel.

The patent does not, however, teach rotating the lens arrays with respect to a diagonal axis of the LCD panel. Indeed, Honeywell's own expert has never seen a diagonal axis of an LCD panel that caused moire. (Deposition of Ian Lewin, March 5, 2008 51:16-52:21 and 55:4-8 (attached as Exhibit 18 to D.I. 1017 in C.A. 04-1338)). The presentation by Honeywell at the hearing showing a diagonal axis of the LCD panel was, in the Special Master's view, merely theoretical and not taught by the patent. Without support in the intrinsic record and only speculation from Honeywell, the Special Master declines to adopt Honeywell's view that the rotation can be measured from not only the horizontal and vertical axes of the display but a diagonal axis as well.

4. Rotation is Just Enough to Eliminate Residual Moire

As discussed above, the Special Master concludes it is inappropriate to incorporate the hard limit of not less than 2 degrees and not more than 16 degrees or even incorporate a few degrees into the construction of "slight misalignment" because doing so would read into the claim the preferred embodiment. Accordingly, "slight misalignment" should be construed in conjunction with its moire eliminating function. In the context of what the ' 371 patent teaches, however, it is clear to the Special Master that "slight misalignment" cannot be the result of any rotation, particularly a rotation beyond what is absolutely necessary to eliminate residual moire. Philips, 415 F.3d at 1315 (holding that the specification is a critical source for understanding the claims because it must describe the manner and process of making and using the invention).

The Special Master concludes that this interpretation of the '371 Patent is supported by its specification which teaches that what is important is that the rotation results in a small change in the effective spatial frequency difference between the rotated lens array and the LCD panel. '371 Patent, Col. 5, ll. 23-28. Therefore, in the Special Master's view, the patent contemplates a small or just enough change in the effective spatial frequency difference to eliminate any residual moire. Thus, the Special Master agrees with Honeywell that the rotation could extend outside of the 2-16 degree range where necessary to create that small change. The patent does not, however, teach rotating the lens array beyond what is needed to eliminate residual moire. Such an interpretation risks reading out of the claim the term "slight."

Also, during the Hearing, both parties agreed that once the lens array is rotated with respect to the LCD to eliminate residual moire, moire will not be reintroduced if rotation of the lens array was continued (that is an "overrotation"). (4/27/2009 Tr. at 32:11-33:1; 75:1-3). Consequently, the invention did not contemplate an "overrotation" of the lens array because an "overrotation" would not be necessary or anticipated given no possibility of moire being reintroduced. Accordingly, in the Special Master's view, the patent teaches rotating the lens array just enough, and not more, with respect to the LCD panel, to eliminate residual moire.FN10

FN10. Because 2 to 16 degrees is the preferred embodiment of the invention, "just enough" rotation necessarily includes the range of the preferred embodiment, that is 2 to 16 degrees. Indeed, all of the parties agree, including the Customer Defendants, that a rotation of between 2 to 16 degrees is a slight misalignment. 4/27/2009 Tr. at 19:15-18 (KOPSIDAS: "I think you have to give them 2 to 16 in that case").

CONCLUSION

Having stated the above, the Special Master concludes that "slight misalignment" means a misalignment resulting from a rotation of the lenslets of the lens array relative to an edge of the LCD panel by just enough number of degrees to eliminate residual moire.

COURT'S PRELIMINARY CONSTRUCTION, WHICH HONEYWELL ADOPTS	**CUSTOMER DEFENDANTS' PROPOSED CONSTRUCTION**	**SPECIAL MASTER'S CONSTRUCTION**
a misalignment of typically 2 to 16 degrees between and axis of the lens array and an axis of the pixel arrangement causing moire effects.	A misalignment of *no less than 2 degrees and no more than 16 degrees* between an axis of the lens array and an axis of the pixel arrangement causing moire effects. A misalignment of *a few degrees* (typically 2-16 degrees) between an axis of the lens array and an axis of the pixel arrangement causing moire effects.	A misalignment resulting from a rotation of the lenslets of the lens array relative to an edge of the LCD panel by just enough, and not more, number of degrees to eliminate residual moire.

THE SPECIAL MASTER'S OPINION AND ORDER WILL BECOME A FINAL ORDER OF THE COURT UNLESS OBJECTION IS TAKEN IN ACCORDANCE WITH THE ANTICIPATED ORDER BY THE COURT WHICH SHORTENS THE TIME WITHIN WHICH AN APPLICATION MAY BE FILED PURSUANT TO FED. R. CIV. P. 53..

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