

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

**PIONEER CORPORATION,**  
Plaintiff.

v.

**SAMSUNG SDI CO., LTD., Samsung Electronics Co., Ltd., and Samsung Electronics America, Inc,**  
Defendants.

Civil Action No. 2:07-CV-170 (DF)

**Jan. 20, 2009.**

Samuel Franklin Baxter, McKool Smith, Marshall, TX, Andrew E. Monach, Harold J. McElhinny, Minn Chung, Morrison & Foerster LLP, San Francisco, CA, Garret Wesley Chambers, Gary Scott Kitchen, McKool Smith, Dallas, TX, Hui Liu, Karen L. Hagberg, Kyle W.K. Mooney, Pankaj Soni, Sherman William Kahn, Morrison & Foerster, New York, NY, for Plaintiff.

Paul D. Tripodi, II, David T. Miyamoto, Edward G. Poplawski, Olivia M. Kim, Sandra S. Fujiyama, Sidley Austin, Los Angeles, CA, Scott F. Partridge, Elizabeth Durham, Michael A. Hawes, Baker Botts LLP, Houston, TX, Bryan K. Anderson, Sidley Austin LLP, San Francisco, CA, Dale Bruce Nixon, Sidley Austin, Dallas, TX, Lance Lee, Young Pickett & Lee, Texarkana, TX, for Defendants.

### ***SUPPLEMENTAL CLAIM CONSTRUCTION ORDER***

**DAVID FOLSOM, District Judge.**

A claim construction order relating to U.S. Patent Numbers 6,090,464, 6,674,237, and 6,828,731 was previously entered in this action on March 10, 2008. Dkt. No. 94. In an order entered May 13, 2008, Pioneer was granted leave to file a First Amended Complaint in which U.S. Patent No. 6,922,181 (the "'181 Patent") was added to the pending suit. Dkt. No. 116. Before the Court are Pioneer Corporation's Opening Claim Construction Brief For U.S. Patent No. 6,922,181, Samsung's Responsive Markman Brief For U.S. Patent No. 6,922,181, and Pioneer Corporation's Reply Claim Construction Brief For U.S. Patent No. 6,922,181. Dkt. Nos. 202, 223, and 230 respectively. An Oral Claim Construction Hearing was held October 3, 2008. Dkt. No. 240. After considering the patent, all other relevant pleadings and papers, the Court finds that the claims of the patents-in-suit should be construed as set forth herein. The legal principles of claim construction utilized for the Court's construction have been provided in the prior claim construction order and are not repeated herein. *See* Dkt. No. 94

#### **I. THE ADDITIONAL PATENT-IN-SUIT**

The '181 Patent, entitled "Method of Controlling Luminance of Display Panel," issued on July 26, 2005. The Abstract reads as follows:

In power saving luminance control that the maximum luminance of one field is varied according to an average luminance level of an image, the luminance of a subfield at the minimum luminance level is fixed to a certain value without depending upon the variation of the maximum luminance of one field. Hereby, even if luminance control that the maximum luminance of one field is enhanced in an image the average luminance level of which is low is made, a gradation characteristic in a low luminance region is improved.

Pioneer asserts Claims 1 through 4 of the '181 Patent, which read as follows:

1. A method of controlling the luminance of a display panel, comprising: dividing a field into a plurality of subfields, wherein a number of sustain cycles is assigned to each subfield;

assigning one of at least two luminance levels to the field and the plurality of subfields therein based on the average luminance level of input image data;

representing gradation by selecting whether each subfield is to be displayed or not; and

varying the peak luminance of the field according to the luminance level thereof; wherein:

the rate of change between the number of sustain cycles assigned to a subfield when assigned a low luminance level and the number of sustain cycles of the same subfield when assigned a high luminance level is smaller for subfields having a lower number of sustain cycles overall than for subfields having a greater number of sustain cycles overall.

2. The method of controlling the luminance of a display panel according to claim 1, wherein:

the rate of change between the number of sustain cycles assigned to a subfield when assigned a low luminance level and the number of sustain cycles assigned to the same subfield when assigned a high luminance level is zero for one or more subfields having a low number of sustain cycles overall.

3. The method of controlling the luminance of a display panel according to claim 1, wherein:

the number of sustain cycles assigned to subfields having a low number of sustain cycles overall is set according to a binary system.

4. A method of controlling the luminance of a display panel according to claim 1, wherein:

a range of display gradations made by selecting whether each subfield is to be displayed or not is determined separately for each luminance level.

## **II. CLAIM CONSTRUCTION**

### **A. Agreed Terms**

At the claim construction hearing the parties reached agreement as to two terms used in claim 4. The parties commenced the hearing by indicating that "a range of display gradations made by selecting whether each subfield is to be displayed or not is determined separately for each luminance level" was agreed to be construed as "a group of display gradations between a minimum gradation value and a maximum gradation

value determined separately for each luminance level wherein each display gradation is determined by selecting whether each subfield is to be displayed or not." Dkt. No. 240 at 5.

With regard to the use of the term "gradation" within the claim 4 limitation "a range of display gradations made by selecting ..." described above, the parties also agreed in the claim construction hearing to construe gradation as "level of brightness." Dkt. No. 240 at 41-43. The parties then noted that the agreements differed somewhat in that one agreement used the term "levels" and the other used the term "values." Samsung advocated a consistent use of "level" whereas Pioneer advocated use of "value" in both places. Dkt. No. 240 at 44-45. Neither party provided substantial argument differentiating the two terms.

The Court finds that it would more understandable to the jury to provide one inclusive definition that construes the entire term (including gradation) rather than construing the term gradation separately. The Court also finds that it would be more understandable to the jury to use the term "value," so as not to cause confusion with the claim term "luminance level." Consistent with the agreements of the parties, the Court construes "a range of display gradations made by selecting whether each subfield is to be displayed or not is determined separately for each luminance level" to mean "a group of display brightness values between a minimum brightness value and a maximum brightness value determined separately for each luminance level wherein each display brightness value is determined by selecting whether each subfield is to be displayed or not."

## **B. Rate of Change (Claim 1)**

### **1. The Parties' Proposed Constructions**

Pioneer proposes that the term "rate of change" means "a scaling factor that reflects the relative rate at which the number of sustain cycles in a subfield changes from one luminance level to another luminance level." Dkt. No. 230 at 2. Samsung proposes that this term means "the change in the number of sustain cycles in a subfield from one luminance level to another luminance level." Dkt. No. 223 at 12.

### **2. The Parties' Positions**

Pioneer acknowledges that the term "rate of change" is not expressly defined in the '181 Patent and that there is no singular ordinary meaning of the term. Dkt. No. 202 at 17. Pioneer asserts that, in the context of the '181 Patent specification and claim 1, the term relates to a relative rate such as a scaling factor or a percentage change. *Id.* at 18. Pioneer emphasizes that the rate of change must mean more than a simple "change" (i.e. difference) otherwise the term "rate" would be ignored. Dkt. No. 230 at 3.

In the context of the specification, Pioneer asserts that the prior art Table 1 of the '181 Patent is described as showing a consistent rate of change such as the quadrupling of the cycles from APL 3 to APL 0 for each subfield. Dkt. No. 202 at 19-20; Dkt. No. 230 at 3; '181 Patent at 6:18-19. Thus, Pioneer asserts that the rate of change of the sustain cycles for each subfield of prior art Table 1 is consistent between any two APL steps. Pioneer illustrates two mathematical examples that demonstrate a consistent rate of change, one example merely dividing the sustain cycles by each other and the other example creating a scaling factor by finding the difference between the two sustain cycles and then dividing the result by one of the sustain cycles. FN1 Dkt. No. 202 19-20. In either case, the result in Table 1 is a consistent number across all subfields and Pioneer asserts that this is one of the problems addressed by the '181 Patent. Pioneer asserts the solution to this problem is shown by Table 2. Pioneer asserts that Table 2 illustrates a "rate of change" that is lower for lower numbered subfields and increases as the sustain cycles increase in higher number

subfields. *Id.* at 21 (citing ' 181 Patent at 8:45-10:54). Pioneer asserts that the relative change of either of the mathematical formula examples shows an increasing rate of change for higher subfields. *Id.* at 21-23.

FN1. Pioneer provides two example formulas using the data from Table 2:

Rate of Change  $_{(APL=3 \text{ and } APL=0)}$  =  $\frac{((\text{Sustain Cycles})_{SF4, APL=3} - (\text{Sustain Cycles})_{SF4, APL=0})}{(\text{Sustain Cycles})_{SF4, APL=3}} = \frac{(32-8)}{8} = "3"$ , and

Rate of Change  $_{(APL=3 \text{ and } APL=0)}$  =  $\frac{(\text{Sustain Cycles})_{SF4, APL=3}}{(\text{Sustain Cycles})_{SF4, APL=0}} = \frac{32}{8} = "4"$ .  
Dkt. No. 202 at 19-20

Pioneer further asserts that the specification discusses "rate of change" as the rate of change in the weighting of subfields. Dkt. No. 230 at 4 (citing ' 181 Patent at 6:65-7:12). Pioneer asserts that weighting is equivalent in meaning to scaling as both suggest how the subfield is proportionally weighted relative to the same subfield at a different average luminance level. *Id.* In contrast, Pioneer asserts that Samsung's construction reads "rate of" out of the claim and interprets "rate of change" to mean merely "change." Dkt. No. 230 at 4. Pioneer asserts that construing the term to be merely the change or difference would encompass the prior art Figure 1. Dkt. No. 202 at 23-24. Pioneer states that inclusion of Table 1 within the scope of claim 1 would ignore the identification in the specification of the problem of Table 1 (constant scaling factor) and the solution of a variable scaling factor described in the '181 Patent. *Id.* at 24 (citing the '181 Patent at 8:45-10:54).

Samsung asserts that the "rate of change" is the change in the number of sustain cycles in a subfield when it is associated with a first luminance level and the number of sustain cycles in a the subfield when it is associated with a second luminance level. Dkt. No. 223 at 11. Thus, Samsung provides the example that if a subfield (SF) has 10 sustain cycles for first luminance (APL) level and a 16 sustain cycles for the second luminance level than the rate of change is  $16-10=6$ . Dkt. No. 223 at 12. Samsung asserts that the claim language itself describes "the number of sustain cycles assigned to a subfield" at both a low and high luminance level. Thus, according to Samsung, the claim itself teaches that the change is the difference from one number of sustain cycles to another number of sustain cycles. *Id.* Samsung further asserts that the rate of change is the change in one luminance level step and thus provides an example in which the rate of change is "change in number of sustain cycles" divided by the "change in the luminance level." Dkt. No. 223 at 14. Samsung asserts that in the '181 Patent the rate aspect is a per luminance level change which is one. Dkt. No. 223 at 14.

Samsung asserts that the Pioneer's construction does not find support in the specification. In particular, Samsung asserts that the mathematical formulas and scaling factor concepts identified by Pioneer are not found in the specification. Dkt. No. 223 at 21-22. Samsung further asserts that Pioneer's construction has no clear meaning and mathematical relationship while Samsung's construction, "change in the number ...," is a clearly stated mathematical relationship. Samsung also asserts that Pioneer's first mathematical formula would not satisfy dependent claim 2 because claim 2 requires the change to be zero yet Pioneer's formula can never have a zero value. Dkt. No. 223 at 24. Samsung further argues that claims do not have to be construed to avoid the described prior art and that courts have found claims invalid over admitted prior art. Dkt. No. 223 at 15.

At the Claim Construction Hearing, Samsung also asserted that Pioneer was now arguing for a construction that is different from the one Pioneer argued for in the pending reexamination of the '181 Patent. Dkt. No.

240 at 31-33. Samsung asserted that Pioneer's proposed construction in the reexamination of "a quotient of the number of sustain cycles in a subfield between two luminance levels" is not consistent with what Pioneer now proposes. *Id.*

In response, Pioneer contends it is not seeking that the Court to adopt the mathematical formula shown in its briefs. Rather, these formulas are merely exemplary ways in which a rate of change can be calculated as a relative change. Dkt. No. 230 at 5. Pioneer also notes that Samsung's rate concept merely finds a simple difference because dividing by one always results in the rate of change being the difference in the number of sustain cycles. *Id.* at 5-6. Pioneer asserts that when evaluating the prior art, the specification refers to the variation between APL steps based upon "quadruple." Dkt. No. 230 at 4 (citing '181 Patent at 6:18-19). Pioneer asserts that characterizing the change based upon a multiple, rather than the amount of change or raw difference, indicates that a rate of change should take into account the a scaling factor to obtain the relative number of sustain cycles rather than merely the difference. *Id.* Pioneer also notes that Pioneer's construction is still consistent with claim 2, as the second exemplary formula shown by Pioneer may result in a zero rate of change. *Id.* at 6.

With regard to the reexamination, Pioneer asserted that its original reexamination construction was a subset of the construction being presented now. Dkt. No. 240 at 35. Pioneer noted that the reexamination construction mirrored the first example mathematical formula presented by Pioneer. *Id.*

### **3. Construction**

In the context of the '181 Patent and the language proposed by Samsung, Samsung's construction essentially becomes the difference between the number of sustain cycles at two luminance levels. The Court rejects this for several reasons. The claim term in question explicitly states "the rate of change" between the number of cycles at a low luminance level and the number of cycles at a high luminance level. Samsung's proposed construction merely states "the change in the number." As interpreted by Samsung, such a construction is just the difference in the number of cycles between two luminance levels. Samsung's construction might be more appropriate if the claim language only stated "the change between the numbers." However, the claim language itself suggests that more is involved than merely the change. As such, Samsung's construction reads out the "rate of" language explicitly included in claim 1.

The specification also supports rejecting the construction proposed by Samsung. As described and shown with regard to the prior art Table 1, the variation between luminance levels is shown to be a constant multiple at each subfield. '181 Patent at 5:23-6:25. In one example described, the variation between one APL and another APL is discussed in context of a multiple ("quadruple"). '181 Patent at 6:18-20. Later the specification states that the "weighting of the luminance of each subfield for gradation representation according to the invention will be described" and then provides the embodiment of Table 2. *Id.* at 8:60-67; *See Id.* at 9:1-10:60. As shown in Table 2 the multiple that relates cycles between the APL levels increases as the subfields progress from SF1 to SF 12. *See Id.* at Table 2. The construction proposed by Samsung would be equally applicable to the prior art Table 1 as Table 2 as both tables illustrate a raw difference between APL steps of a given subfield that increase as the subfield number increases. In Table 1, however, the relative change remains constant while in Table 2 the relative change is variable. When viewed in the context of the contrast between the prior art techniques and the embodiments of the invention, the specification also makes clear that the "rate of change" is more than a mere difference. It is also noted that the Summary of Invention utilizes the term "rate of change" in the context of "weighting" applied to the subfield. This is also more consistent with a relative and scaling description of the change rather than just

describing the amount of change (i.e. raw difference).

Samsung argues that Pioneer's construction is not consistent with the limitation of claim 2, which requires the rate of change to be zero. While Samsung is correct that one of the examples of a relative change presented by Pioneer would never provide a rate of change that is zero, the second example provided by Pioneer does provide a relative change that can be zero. Thus, Pioneer's claim construction, which includes "a scaling factor that reflects the relative rate at which the number of sustain cycles in a subfield changes," is not inconsistent with claim 2. Though one example formula of determining a relative rate does not satisfy claim 2, the construction itself is not inconsistent as a relative rate of change may be zero.

For these reasons, the Court construes the term "rate of change" to mean "the scaling factor that reflects the relative rate at which the number of sustain cycles in a subfield changes from one luminance level to another luminance level."

## V. CONCLUSION

Accordingly, the Court hereby **ORDERS** the disputed claim terms construed consistent herewith.

E.D.Tex.,2009.

Pioneer Corp. v. Samsung SDI Co., Ltd.

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