SILICON GRAPHICS, INC,
Plaintiff.
v.
ATI TECHNOLOGIES, INC., ATI Technologies ULC, and Advanced Micro Devices, Inc,
Defendants.

No. 06-C-611-C

Aug. 20, 2007.

James M. Bollinger, Daniel Patrick Murphy, David Nir, Jennifer L. Dereka, Joseph D. Etra, Philip Laurence Hirschhorn, Steven Duane Underwood, Morgan, Lewis & Bockius LLP, New York, NY, David W. Marston, Jr., Morgan, Lewis & Bockius LLP, Philadelphia, PA, Thomas Patrick Heneghan, Edward Pardon, Michael Best & Friedrich LLP, Madison, WI, for Plaintiff.

Diane Simerson, Samuel L. Walling, William Manning, Aaron Robert Fahrenkrog, Amy Slusser, Andrew Martin Kepper, Brian Arthur Mayer, Cole Fauver, Jacob Zimmerman, Robins, Kaplan, Miller & Ciresi L.L.P., Minneapolis, MN, Joseph A. Ranney, Dewitt Ross & Stevens S.C., Madison, WI, for Defendants.

OPINION and ORDER

BARBARA B. CRABB**, District Judge.**

Plaintiff Silicon Graphics, Inc. contends that products made by defendant ATI Technologies Inc. infringed three of plaintiff's patents relating to advanced graphics processing technology. These patents include United States Patent Nos. 6,650,327 (the '327 patent), 6,292,200 (the '200 patent) and 6,885,376 (the '376 patent). ATI Technologies ULC is successor-in-interest to defendant ATI Technologies, Inc.

Now before the court is defendants' motion for partial summary judgment. Several procedural matters are worth noting at the outset. First, defendants moved for summary judgment early in the course of the lawsuit, before the claims construction hearing and, apparently, before plaintiff had identified all of the claims it intends to assert and the products of defendants it believes infringe those claims. This opinion applies only to the accused products and the asserted claims identified in defendants' proposed findings of fact. Second, at the time defendants filed their motion for summary judgment, they maintained that plaintiff had not properly pleaded indirect infringement under 35 U.S.C. s.s. 271(b) or (c). After this motion became ripe for decision, plaintiff was granted leave to amend its complaint to plead these theories explicitly and the parties were instructed that a second round of summary judgment would be permitted to resolve any newly raised matters. Dkt. # 136. Therefore, I understand defendants' motion for summary judgment to relate only to plaintiff's claims of direct infringement under 35 U.S.C. s. 271(a) and I make no determinations at this time regarding plaintiff's claims of infringement under s.s. 271(b) and (c).

Next, in response to defendants' early-filed motion for summary judgment, plaintiff filed a Rule 56(f) motion, in which it requested additional time to conduct discovery and respond to defendants' motion. Dkt. # 83. The magistrate judge granted this motion in part, giving plaintiff nearly an additional month to gather evidence and prepare its supplemental response to defendants' motion. Dkt. # 100. Therefore, as discussed in greater detail below, I am not persuaded by plaintiff's continued protestations that it did not have adequate time to refute defendants' positions and evidence. Finally, although a claims construction hearing has not yet taken place, I have construed certain patent terms when it was necessary to do so in order to resolve defendants' motion.

With respect to the '327 patent, plaintiff has failed to adduce evidence from which a reasonable jury could conclude that defendant directly infringed claims 1, 2, 4, 5 or 6 by *making, offering to sell* or *selling* any of the accused products. Therefore, defendants' motion for summary judgment will be granted in part with respect to the '327 patent. Plaintiff has responded with just enough evidence to put into dispute defendants' alleged infringement of claims 1, 2, 4, 5 and 6 of the '327 patent by *using* the accused devices. Therefore, defendants' motion for summary judgment will be denied in this respect. Finally, defendants' motion for summary judgment will be denied with respect to plaintiff's claim that the accused products infringe claim 9 of the '327 patent. Defendants' sole ground for summary judgment on this claim is that the accused products lack a display, but this argument misses the mark with respect to claim 9. As to this claim, unlike claims 1, 2, 4, 5 or 6, a product lacking a display may infringe.

Next, defendants contend that none of the accused products directly infringe claims 1, 4, 5, 6, 8, 11 and 16 of the '200 patent. Because all of these claims require the presence of a "host processor" and plaintiff has failed to adduce evidence from which a reasonable jury could conclude that any of the accused devices include a "host processor," I will grant defendants' motion for partial summary judgment with respect to the '200 patent.

Finally, defendants contend that none of the accused products directly infringe claims 1, 4, 5, 6, 7, 8, 9 and 11 of the '376 patent. Because all of these claims require the issuance of a performance report and plaintiff has failed to adduce any evidence from which a reasonable jury could conclude that any of the accused products produce a "performance report," I will grant defendants' motion for partial summary judgment with respect to the '376 patent.

Before turning to the undisputed facts, I note at the outset that plaintiff failed to propose any facts of its own in response to defendants' motion for summary judgment. For a party asserting infringement and therefore bearing the burden of adducing evidence to support its claims, this was a risky decision. Celotex Corp. v. Catrett, 477 U.S. 317, 322, 106 S.Ct. 2548, 91 L.Ed.2d 265 (1986) (holding that in opposing motion for summary judgment, nonmoving party must come forward with evidence to support each element of its claim on which it will bear the burden of proof at trial); *see also Procedures to be Followed on Motions for Summary Judgment*, dkt. # 19, Introduction ("[all] facts necessary to sustain a party's position on a motion for summary judgment must be explicitly proposed as findings of fact"). Summary judgment functions as " 'the put up or shut up' moment in a lawsuit, when a party must show what evidence it has that would convince a trier of fact to accept its version of events." Johnson v. Cambridge Industries, Inc., 325 F.3d 892, 901 (7th Cir.2003) (quoting Schacht v. Wisconsin Dept. of Corrections, 175 F.3d 497, 504 (7th Cir.1999)). As discussed in greater detail below, plaintiff's failure to adduce evidence has proven fatal to the bulk of its case, making it unnecessary for me to reach many of the more complicated questions regarding the function of the accused products and the scope of the asserted claims.

Plaintiff is not helped by the numerous facts mentioned in its brief that it neither proposed as facts nor used to dispute defendants' proposed facts. Consistent with this court's procedures, I have disregarded facts included in the parties' briefs but not in the proposed findings of fact. It may be that the voluminous record contains evidence that supports plaintiff's positions. However, as plaintiff was warned, the court will not search the record for factual evidence. *Procedures,* Section I.C.1.

From the parties' proposed findings of fact, I find the following facts to be material and undisputed.

FACTS

A. *The Parties*

Plaintiff Silicon Graphics, Inc. is a Delaware corporation with its corporate offices in Sunnyvale, California. It has research and manufacturing facilities in Chippewa Falls, Wisconsin.

Defendant Advanced Micro Devices, Inc. is a Delaware corporation with its principal offices in Sunnyvale, California; it acquired the entire business of defendant ATI Technologies, Inc. on October 24, 2006, re-incorporated it and operates it as defendant ATI Technologies ULC. Defendant ATI Technologies ULC has its principal office in Ontario, Canada.

B. *The* '327 Patent

1. *Asserted claims*

The '327 patent contains 31 claims. Plaintiff has asserted that the accused products infringe claims 1-6, 9-12, 15-18 and 22-24. Defendants have moved for summary judgment with respect to claims 1, 2, 4, 5, 6 and 9.

Claim 1 discloses:

1. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a

rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values; and

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer;

wherein the rasterization circuit performs scan conversion on vertices having floating point color values.

Claim 2 discloses:

2. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values;

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer;

a texture circuit coupled to the rasterization circuit that applies a texture to the primitive, wherein the texture is specified by floating point values; and

a texture memory coupled to the texture circuit that stores a plurality of textures in floating point values.

Claim 4 discloses:

4. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values;

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer; and

a fog circuit coupled to the rasterization circuit for performing a fog function, wherein the fog function operates on floating point color values.

Claim 5 discloses:

5. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values;

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer; and

a blender coupled to the rasterization circuit which blends floating point color values.

Claim 6 discloses:

6. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values;

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer; and

logic coupled to the rasterization circuit which performs per-fragment operations on floating point color values.

Claim 9 discloses:

9. In a computer system, a method for rendering a three-dimensional image for display, comprising the steps of:

performing geometric calculations on a plurality of vertices of a plurality of polygons;

scan converting a plurality of pixels according to the vertices, wherein scan conversion is performed on floating point color values;

applying a texture to the image by reading floating point texture values stored in a texture memory;

simulating fog effects, wherein fog is simulated by modifying floating point color values;

drawing the image for display on a display screen coupled to the computer system.

2. *Accused products*

Defendants have moved for summary judgment with respect to the following accused products: the Radeon 9500, 9550, 9600, 9700, 9800, X300, X550, X600, X700, X800, X850, X1300, X1600, X1650, X1800, X1900 and X1950; the Mobility Radeon 9500, 9550, 9600, 9700, 9800, X300, X600, X700, X800, X1300, X1350, X1400, X1450, X1600, X1700 and X1800; the Radeon Xpress 1100, 200 and 200 for Intel; the Fire GL T2-128, X1-128, X1-256p, X2-256, X3-256, V3100, V3200, V3300, V3400, V5000, V5100, V5200, V7100, V7200, V7300, V7350 and Z1-128; the Mobility FireGL T2, V3100, V3200 and V5000; the Radeon Cross Fire Editions; the All-In-Wonder X1900, 2006 PCI Express, 2006 Edition and X800 XT; the Imageon 2300, 2380 and 2388; the R300, R350, RV360, RV370, RV380, M10, M11, RS480, R420, R423, RV410, R430, R480, R481, M18, M28, R520, RV515, RV530, RV535, RV560, R580, RV570, M52, M62, M56, M64 and M66.

The accused products are graphics processing units, chipsets, graphics cards and CrossFire systems. Graphics processing units are microprocessors that produce computer graphics. None of the accused products contain a display, screen, monitor or any other device for visually displaying graphics data. None of the accused products are complete computer systems with a central processing unit and a visual display.

3. Defendants' use of the accused products

Defendant ATI Technologies Inc. demonstrated the Radeon X850, which was built on the R480 core, to "selected press and customers" at the E3 tradeshow in 2005. To do so, defendant ATI Technologies placed the cards in a computer system with a display. Defendant tested the abilities of its graphics cards by examining their output on display screens.

C. The '200 Patent

1. Asserted claims

The '200 patent contains 18 claims; claims 1 and 11 are independent. Plaintiff has asserted that the accused products infringe claims 1, 4, 5, 6, 8, 11 and 16. Claims 4-6 and 8 are dependent from claim 1. Claim 16 depends from claim 11. (Plaintiff has stated that the accused products may infringe other claims as well.)

Claim 1 discloses:

1. A computer system comprising:

a plurality of rendering pipes for rendering pixels of an image, wherein each of the rendering pipes comprises a host processor having an application program issuing graphics commands, a geometry circuit coupled to the host processor for processing primitives, a rasterizer coupled to the geometry circuit for generating pixel data, a frame buffer coupled to the rasterizer which stores the pixel data, an interface coupled to the rasterizer that accepts requests from the transmission medium and outputs pixel data;

a transmission medium coupling together each of the plurality of rendering pipes;

a controller coupled to one of the rendering pipes which coordinates pixel information of the image between each of the plurality of rendering pipes, wherein each of the rendering pipes is capable of rendering pixels for an entire frame or portions thereof;

a memory coupled to the controller for storing the pixel information;

a display coupled to the memory for displaying the image.

Claim 4 discloses:

4. The computer system of claim 1, wherein the rendering circuit includes a local memory for storing pixel data generated locally.

Claim 5 discloses:

5. The computer system of claim 4, wherein the controller requests the pixel data stored in the local memory.

Claim 6 discloses:

6. The computer system of claim 5, wherein the controller merges pixel data received from a plurality of rendering circuits before drawing the image for display.

Claim 8 discloses:

8. The computer system of claim 1 further comprising a single display driver which drives the display.

Claim 11 discloses:

11. In a computer system, a method of rendering a three-dimensional image for display comprising the computer-implemented steps of:

rendering pixels of a three-dimensional image, wherein a plurality of rendering circuits are used to render portions of a single frame and each of the rendering pipes is capable of rendering pixels for an entire frame or portions thereof;

executing an application program on a host processor which issues graphics commands;

processing vertices by a geometry circuit coupled to the host processor;

generating pixel data through a rasterizer coupled to the geometry circuit;

storing the pixel data in a frame buffer coupled to the rasterizer;

accepting requests from the transmission medium for the pixel data;

outputting the pixel data onto the transmission medium;

storing pixel data in a plurality of memories, each rendering circuit storing pixel data generated in a local memory;

transmitting a request through a transmission medium coupling together each of the plurality of rendering circuits;

transmitting pixel data from one of the rendering circuits through the transmission medium to a frame buffer in response to the request;

merging pixel data received from a plurality of the rendering circuits into a frame;

driving a display coupled to the frame buffer to display the three-dimensional image.

Claim 16 discloses:

16. The method of claim 11 further comprising the step of driving the display with a single driver.

2. *Accused products*

Plaintiff has accused the following of defendants' products of infringing the '200 patent: the Radeon Cross Fire Edition and compatible Radeon cards including X1950 and CrossFire editions X850, X1300, X1600, X1650, X1800 and X1900. None of the accused products contain a display, screen, monitor or any other device for visually displaying graphics data. None of the accused products are complete computer systems with a central processing unit and a visual display.

None of the accused products contain a processor that runs an application program and issues graphics commands. In the accused products, an application running on the central processing unit causes the computer's graphics processing components to fill in all the pixels that make up the visual output.

D. *The* '376 Patent

1. *Specifications*

The overview of the '376 patent states, in part:

The invention described herein is a system, method, and computer program product for creating a sequence of computer graphics frames using a plurality of rendering pipelines. For each frame, each rendering pipeline renders a subset of the total amount of graphics data. The output of each rendering pipeline represents a portion of the frame. In an embodiment of the invention, each portion of the frame is rectangular. Each rectangle is referred to hereinafter as a tile. Each rendering pipeline is therefore responsible for the rendering of its own particular tile in a given frame. After completion of a frame, each rendering pipeline produces a performance report. The performance report states the amount of time that was required to render a tile in the current frame.

At the completion of a frame, each rendering pipeline sends its performance report to a performance monitor. The performance monitor determines whether or not there was a significant disparity between the times required by the rendering pipelines to render their tiles. If a disparity is detected, and if the disparity is determined to be significant (i.e., greater than some threshold), then an allocation module resizes the tiles for the subsequent frame.

'376 pat., col. 2, Ins. 5-26.

2. *Asserted claims*

The '376 patent contains 29 claims. Plaintiff has asserted that the accused products infringe claims 1, 5-9 and 11. Claim 1 is an independent apparatus claim, from which claims 5 and 6 depend. Claims 7 and 8 are independent method claims. Claims 9 and 11 are dependent from claim 8.

Claim 1 discloses:

1. A system for generating a sequence of computer graphics frames, the system comprising:

a plurality of rendering pipelines that each receive a distinct subset of graphics data for a respective current frame in the sequence of frames, render said distinct subset of graphics data, and produce a performance report regarding the workload incurred by each respective rendering pipeline during said rendering;

a performance monitor that receives said performance report from each rendering pipeline and determines whether a disparity in the workloads of the respective rendering pipelines exceeds a threshold to thereby identify a load imbalance; and

an allocation module that reallocates graphics data for a next frame to said rendering pipelines, wherein reallocation depends on said load imbalance and seeks to reduce any subsequent load imbalance associated with rendering said next frame.

Claim 5 discloses:

5. The system of claim 1, wherein each said distinct subset of graphics data corresponds to one of a plurality of tiles of said current frame.

Claim 6 discloses:

6. The system of claim 5, wherein said allocation module reallocates graphics data to said rendering pipelines for said next frame by resizing tiles of said next frame relative to said tiles of said current framer.

Claim 7 discloses:

7. A method of rendering successive frames using a plurality of rendering pipelines, the method comprising the steps of:

(a) rendering a current frame, wherein each rendering pipeline renders a tile of the current frame;

(b) generating a performance report for each rendering pipeline, each performance report indicating the workload incurred by the respective rendering pipeline during said rendering;

(c) sending the performance reports to a performance monitor; and

(d) at each rendering pipeline, receiving graphics data associated with a tile of a next frame, wherein a plurality of the tiles of the next frame have been resized relative to the corresponding tiles of the current frame if the difference between the performance reports are above a threshold.

Claim 8 discloses:

8. A method of controlling the rendering of successive frames, wherein the rendering is performed using a plurality of rendering pipelines, the method comprising the steps of:

(a) receiving a performance report for each rendering pipeline, each performance report indicating the workload incurred by the respective rendering pipeline during rendering of a current frame;

(b) determining whether the performance reports indicate a significant load imbalance among the rendering

pipelines, wherein said significant load imbalance indicates that the difference between the performance reports is above a threshold;

(c) if a significant load balance is indicated, resizing at least one tile of the next frame relative to a corresponding tile of the current frame; and

(d) sending graphics data associated with the next frame to the rendering pipelines, wherein the graphics data sent to a given rendering pipeline is associated with a tile of the next frame.

Claim 9 discloses:

9. The method of claim 8, wherein said step b) comprises the steps of:

(i) determining the rendering pipeline with the longest rendering time for its tile in the current frame;

(ii) determining the rendering pipeline with the shortest rendering time for its tile in the current frame; and

(iii) determining if the difference between the longest and shortest rendering times exceeds a threshold value, thereby indicating a significant load imbalance.

Claim 11 discloses:

11. The method of claim 9, wherein said step c) comprises the steps of:

(i) with respect to the next frame, increasing the size of the tile corresponding to the rendering pipeline with the shortest rendering time, by an amount proportional to the difference between the longest and shortest rendering times; and

(ii) with respect to the next frame, decreasing the size of the tile corresponding to the rendering pipeline with the longest rendering time by the same amount.

3. *Accused products*

Plaintiff has accused the following of defendants' products of infringing the '376 patent: the Radeon Cross Fire Edition and compatible Radeon cards including X1950 and CrossFire editions X850, X1300, X1600, X1650, X1800 and X1900.

The accused products do not compare any value to a threshold value in order to determine whether the workloads of the two cards should be redistributed for the next frame. None of the accused products generate time data and send that data to a means for comparing the times and redistributing the workload for the next frame.

4. *Prosecution history*

In response to the patent examiner's rejection of all claims originally filed, plaintiff amended claims 1, 7 and 8 to include a limitation including the word "threshold."

OPINION

The question now before the court is whether defendants' products infringe plaintiff's patents. This case has followed a somewhat tortured path and, as I have noted, a claims construction hearing has not yet been held. Nevertheless, answering the question of infringement requires a construction of the patent claims at issue followed by a comparison of the properly construed claims to the accused device. Cybor Corp. v. FAAS Technologies, Inc., 138 F.3d 1448, 1454 (Fed.Cir.1998) (en banc); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996); Markman v. Westview Instruments, Inc., 52 F.3d 967, 979 (Fed.Cir.1995) (en banc), *aff'd*, 517 U.S. 370, 116 S.Ct. 1384, 134 L.Ed.2d 577 (1996). Accordingly, I have construed claim terms when doing so was necessary to resolve a question of infringement. Claim construction is a legal determination to be made by the court while infringement is a question of fact. Vitronics, 90 F.3d at 1582; Insituform Technologies, Inc. v. Cat Contracting, Inc., 161 F.3d 688, 692 (Fed.Cir.1998).

A. *Applicable Legal Standards*

1. *Standards for claim construction*

When construing claims, the starting point is the so-called intrinsic evidence: the claims themselves, the patent specification and the prosecution history. Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313, 1325 (Fed.Cir.2002). Construction of the disputed terms begins with the language of the claims. Claim terms are to receive their ordinary and customary meaning, which is the meaning that a person of ordinary skill in the art would have understood the claim term to have as of the filing date of the patent application. Phillips v. AWH Corp., 415 F.3d 1303, 1313 (Fed.Cir.2005); Rexnord Corp. v. Laitram Corp., 274 F.3d 1336, 1342 (Fed.Cir.2001). Moreover, "unless compelled to do otherwise, a court will give a claim term the full range of its ordinary meaning as understood by an artisan of ordinary skill." Rexnord, 274 F.3d at 1342.

In many instances, however, a court must proceed beyond the bare language of the claims and examine the patent specification. The specification serves an important role in arriving at the correct claim construction because it is in the specification that the patentee provides a written description of the invention that allows a person of ordinary skill in the art to make and use the invention. Markman, 52 F.3d at 979. In particular, the specification must be consulted because "patent law permits the patentee to choose to be his or her own lexicographer by clearly setting forth an explicit definition for a claim term that could differ in scope from that which would be afforded by its ordinary meaning." Rexnord, 274 F.3d at 1342; Vitronics, 90 F.3d at 1582. Although the patent specification does not broaden or narrow the invention, which is specifically laid out in the patent's claims, the specification may be used to interpret what the patent holder meant by a word or phrase in the claim. E.I. Du Pont de Nemours & Co. v. Phillips Petroleum Co., 849 F.2d 1430, 1433 (Fed.Cir.1988); *see also* Vitronics, 90 F.3d at 1582 (when term is not specifically defined in claims, it is necessary to review specification to determine whether inventor uses term inconsistently with its ordinary meaning).

After considering the claim language and the specification, a court may consider the final piece of intrinsic evidence, the patent's prosecution history. Vitronics, 90 F.3d at 1582. "[S]tatements made during the prosecution of a patent may affect the scope of the invention." Rexnord, 274 F.3d at 1343. Generally, the prosecution history is relevant if a particular interpretation of the claim was considered and specifically disclaimed during the prosecution of the patent. Warner-Jenkinson Co., Inc. v. Hilton Davis Chemical Co., 520 U.S. 17, 30, 117 S.Ct. 1040, 137 L.Ed.2d 146 (1997); Vitronics, 90 F.3d at 1582-83.

Finally, a court may find useful extrinsic evidence, such as dictionaries, treatises and expert testimony for

background information and to "shed useful light on relevant art." Phillips, 415 F.3d at 1317 (internal citations omitted). However, the Court of Appeals for the Federal Circuit has cautioned that this type of evidence is "less significant" and reliable than intrinsic evidence in determining "the legally operative meaning of claim language." Id. at 1317-18.

2. *Infringement*

As the owner of the patents, plaintiff bears the burden of proving that defendants have infringed the patent. *Carroll Touch, Inc. v. Electro Mechanical Systems, Inc.,* 15 F.3d 1575, 1578 (Fed.Cir.1993). A process or method infringes a patent claim if it contains every limitation set forth in that claim, either literally or by equivalence. Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985, 988 (Fed.Cir.1999). "A patent is infringed if any claim is infringed." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1220 (Fed.Cir.1995). As the party moving for summary judgment, defendants have the initial burden to identify the legal bases for its motion and point "to those portions of the record that [they believe] demonstrate the absence of a genuine issue of material fact." Novartis Corp. v. Ben Venue Laboratories, Inc., 271 F.3d 1043, 1046 (Fed.Cir.2001) (citing Celotex Corp., 477 U.S. at 323). Once this is done, plaintiff may not avoid summary judgment "simply by insisting that a genuine issue of material fact exists or even by proffering some evidence"; to avoid summary judgment, plaintiffs must present evidence "that a reasonable jury could find sufficient to prove" that defendants' products contain all the limitations in the asserted claims. Smith & Nephew, Inc. v. Ethicon, Inc., 276 F.3d 1304, 1316-17 (Fed.Cir.2001) (Michel, J., dissenting); *see also* TechSearch, L.L.C. v. Intel Corp., 286 F.3d 1360, 1372 (Fed.Cir.2002) ("general assertions of facts, general denials, and conclusory statements are insufficient," ... "the party opposing the motion for summary judgment ... must point to an evidentiary conflict created on the record, at least by a counter-statement of a fact set forth in detail in an affidavit by a knowledgeable affiant").

B. *The* '327 Patent

Defendants have moved for summary judgment on the limited ground that none of the accused products infringe claims 1, 2, 4, 5, 6 or 9 of the '327 patent because they do not contain a "display," which defendants contend is required by each asserted claim. The parties do not appear to dispute that the term "display," as used in the claims, should be given its ordinary meaning. However, they offer no suggestions about what the ordinary meaning is. By their silence on the matter, I understand them to suggest that this is a case where the "ordinary meaning of the claim language" is "readily apparent even to lay judges." Phillips, 415 F.3d at 1314. Therefore, I turn to general purpose dictionaries for the "widely accepted meaning" of this "commonly understood" word. *Id*. Using a broad definition of "display," I construe the term to mean "a visual representation of information." *American Heritage Dictionary,* 521 (4th ed.2000) (defining "display" as visual representation of information); *Webster's New World Dictionary* 415 (4th College ed.2001) (defining "display" as visual representation of data, as on computer video screen).

I will consider the parties' arguments related to claims 1, 2, 4, 5 and 6 separately from those related to claim 9 because the relevant language of claim 9 differs subtly, but importantly from that of the other asserted claims and discloses a method, not a device. Claims 1, 2, 4, 5 and 6 of the '327 patent disclose devices that contain a "display screen." The accused products are graphics processing units, chipsets, graphics cards and CrossFire systems, none of which contain a display, screen, monitor or any other device for visually displaying graphics data. Therefore, none of the accused products create a visual representation of the information they are producing and cannot infringe claims 1, 2, 4, 5 or 6 of the '327 patent on their own. However, plaintiff contends that defendants infringed these claims of the '327 patent by testing the operation of the accused products in a system that included a display screen and demonstrating the operation of the

Radeon X850, which was built on the R480 core, to "selected press and customers" at the E3 tradeshow in 2005.

Patent infringement occurs when an individual "without authority makes, uses, offers to sell, or sells any patented invention, within the United States or imports into the United States any patented invention during the term of the patent therefor ..." 35 U.S.C. s. 271(a). The Court of Appeals for the Federal Circuit has held that testing a patented invention may constitute infringing use. Waymark Corp. v. Porta Systems Corp., 245 F.3d 1364, 1366 (Fed.Cir.2001) (citing Roche Products v. Bolar Pharmaceutical Co., 733 F.2d 858, 863 (Fed.Cir.1984), superseded-in-part by 35 U.S.C. s. 271(e)). Plaintiff's evidence that defendants infringed claims 1, 2, 4, 5 and 6 by testing the accused products in systems that contained display screens is limited and presented in a conclusory manner; plaintiff offers no specific information about which products defendants tested in this manner or when. However, defendants do not dispute that they tested the accused products in the manner plaintiff suggests and appear to concede that such use could constitute infringement. Therefore, it would be improper to grant defendants' request for summary judgment on the broad question of infringement.

Defendants nonetheless maintain that the court should enter summary judgment in their favor on narrower grounds: that they did not infringe claims 1, 2, 4, 5, 6 and 9 of the '327 patent by making, offering to sell, or sell the accused products. They suggest that this would help the progress of this litigation. In response plaintiff argues that it would be inappropriate to grant partial summary judgment when it will not dispose of an entire claim. Plaintiff is mistaken. Rule 56(a) allows "a party seeking to recover upon a claim" to move "for summary judgment in the party's favor *upon all or any part* thereof." Fed.R.Civ.P. 56(a) (emphasis added). Moreover, Rule 56(d) provides explicit authority for the court to enter a pretrial "order" specifying the facts that are not controverted, which is the situation in this case. Fed.R.Civ.P. 56(d); Biggins v. Oltmer Iron Works, 154 F.2d 214, 217 (7th Cir.1946). Plaintiff has proffered no evidence that defendants infringed claims 1, 2, 4, 5 or 6 by making, selling or offering for sale any of the accused products. Therefore, defendants' motion for summary judgment will be granted with respect to these claims. TechSearch, 286 F.3d at 1372 (holding that "mere denials or conclusory statements are insufficient" to overcome motion for summary judgment).

However, I will not grant defendants' motion for partial summary judgment with respect to claim 9. Defendants assert that the method disclosed in claim 9 also requires a display. In response, plaintiff argues that claim 9 does not describe a product that includes a display, but instead describes steps for producing an image *for* display. Claim 9 discloses "In a computer system, a method for rendering a three-dimensional image for display, comprising the steps of ... drawing the image for display on a display screen coupled to the computer system." The parties have provided the court with almost no information about either the claimed technology or the function of the accused products. Therefore, it is impossible to discern at this time whether any of the accused products actually infringe claim 9. What is clear is that claim 9 of the '327 patent contemplates a method for producing an image *for* display, not a product that includes a display.

Defendants have moved for summary judgment on the grounds that none of the accused products include a display. Because claim 9 of the '327 patent may be infringed by a product lacking a display, defendants are not entitled to summary judgment on these grounds.

C. *The* '200 Patent

Next, defendants contend that the accused products do not infringe claims 1, 4, 5, 6, 8, 11 and 16 the '200

patent. The '200 patent discloses "an apparatus and method for utilizing multiple rendering pipes for a single 3-D display." Independent claim 1 of the '200 patent discloses a product with a "display" and independent claim 11 discloses a method for rendering an image for display; the other claims of the patent are dependent from claims 1 and 11. The parties raise all of the same arguments regarding the '200 patent they raised regarding the '327 patent with respect to its requirements for a display. In addition, defendants assert that none of their products infringe the '200 patent even when used in a system that contains a display because none contains a "host processor," which is required also by claims 1 and 11.

To establish whether any of the accused products infringe the '200 patent, the first step is to establish the meaning of the term "host processor." The parties appear to agree that the meaning of "host processor" is commonly understood. Defendants propose that it means "a processor that runs an application program and directs the rendering process." Dft.'s M. for Summ. J., dkt. # 45, p. 16. Plaintiff states that it means: "a processor for issuing high-level commands for graphics rendering." Plt's Supp. Resp. to Dft.'s M. for Summ. J., dkt. # 119, p. 12. Given the similarity of the proffered definitions, I turn to the language of the claims themselves to evaluate which most accurately reflects the meaning.

Claim 1 of the '200 patent discloses

A computer system comprising:

a plurality of rendering pipes for rendering pixels of an image, *wherein each of the rendering pipes comprises a host processor having an application program issuing graphics commands,* a geometry circuit coupled to the host processor for processing primitives, a rasterizer coupled to the geometry circuit for generating pixel data, a frame buffer coupled to the rasterizer which stores the pixel data, an interface coupled to the rasterizer that accepts requests from the transmission medium and outputs pixel data ...

'200 pat., col. 7, lns. 28-38 (emphasis added).

Claim 11 discloses,

In a computer system, a method of rendering a three-dimensional image for display comprising the computer-implemented steps of ... *executing an application program on a host processor which issues graphics commands; processing vertices by a geometry circuit coupled to the host processor.*

Id., col. 8, lns. 9-22 (emphasis added).

Next, the patent specification, describing one embodiment of the invention, describes the function of the host processor as follows: "A graphics application runs on the host processor and issues high-level commands and graphics data." Id., col. 3, lns. 6-8. This is consistent with the function of the host processor described by both parties. Therefore, as used in the ' 200 patent, I find that a host processor is "a processor that runs a graphics program and issues high-level commands."

The parties devote most of their briefing to the question whether the '200 patent requires the presence of a separate host processor in each graphics "rendering pipe"; however, defendants' motion also raises a more fundamental question. Defendants maintain that none of their products contain *any* host processor and therefore cannot infringe the '200 patent. In support of this argument, defendants propose as fact, "The ATI products accused of infringing the '200 patent do not contain a 'host processor' that runs an application

program and issues graphics commands." Dfts.' PFOF 139, dkt. # 46, p. 29. In response, plaintiff states

As ATI admits in paragraph 14, "In the accused GPUs, the application running on the GPU causes the computer's graphics processing components to fill in all the pixels that make up the entire frame." Thus, ATI's GPUs run an application program. Moreover, discovery has just begun, and SGI has not yet determined whether ATI's GPUs run portions of application programs that run primarily on CPUs.

If this fact were supported by admissible evidence, it might be sufficient to put into dispute defendants' contention that none of the accused products contain a host processor. If it were disputed legitimately that the accused graphics processing devices ran applications themselves and issued commands that caused the computer's graphics processing components to fill in frames, a reasonable jury could conclude that the accused graphics processing devices were "processor[s] that run[ ] a graphics program and issue[ ] high-level commands."

However, in reply, defendants have asserted that the evidence on which plaintiff's response relies reflects a typographical error. Defendants state that the accurate transcription of the underlying statement by Eric Demers, a manager for Advanced MicroDevices, is "In the accused GPUs, the application running on the *CPU* causes the computer's graphics processing components to fill in all the pixels that make up the entire frame." (Emphasis added).

Under normal circumstances, this late correction might be unfairly prejudicial to plaintiff. However, in defendants' initial reply to the plaintiff's responses to defendants' proposed findings of fact, defendants alerted plaintiff to the fact that there had been a typographical error. Dkt. # 97, at 62. Plaintiff then received an extension pursuant to Rule 56(f) for responding to defendants' motion and submitted its supplemental reply to the proposed findings of fact three weeks after it had learned of this error. Dkt. 97, 120. In spite of the extension, plaintiff maintained in its supplemental reply that the original, uncorrected statement put defendants' proposed fact number 139 into dispute. In addition, plaintiff continued to assert that "discovery has just begun, and SGI has not yet determined whether ATI's GPUs run portions of application programs that run primarily on CPUs" rather than actually gathering and presenting evidence to support this assertion.

All of this would be beside the point if the corrected statement created a legitimate dispute regarding defendants' proposed finding of fact. However, rather than refuting defendants' evidence, the corrected statement is additional evidence that the accused graphics processing units do not themselves run applications or programs. Therefore, defendants' assertion that none of the devices contain a host processor that runs an application program and issues graphics commands is undisputed. This cuts to the heart of plaintiff's case. All of the asserted claims of the '200 patent require a "host processor." In light of the undisputed evidence that none of the accused products contain a host processor, a reasonable jury could not conclude that any of the accused products infringed claims 1, 4, 5, 6, 8, 11 and 16 the ' 200 patent.

Although defendants brought the motion for summary judgment, plaintiff bears the ultimate burden of proof to demonstrate that the accused products infringe its patent. Fed.R.Civ.P. 56, Applied Medical Resources Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1333 (Fed.Cir.2006) ("the party asserting infringement ... ultimately bears the burden of proof). Plaintiff's failure to come forward to show what evidence it has to convince a trier of fact to accept its version of the facts entitles defendants to partial summary judgment in their favor. Fed.R.Civ.P. 56(e).

D. *The* '376 Patent

The first step in resolving the parties' dispute regarding the '376 patent is to construe the term "performance report." Before doing so, it is helpful to discuss briefly the function of the system and methods claimed in the '376 patent. The '376 patent discloses a "System, Method, and Computer Program Product for Near-Real Time Load Balancing Across Multiple Rendering Pipelines." The patent describes a "system, method, and computer program" that produces computer graphics through the use of "multiple graphics rendering pipelines." Each "graphics rendering pipeline" is assigned some portion of the desired image, which it produces. When each "graphics rendering pipeline" completes its assigned portion of the image, it produces a "performance report." These "performance reports" are compared to determine whether there is a disparity in the workloads of the "graphics rendering pipelines." If the disparity in the workloads exceeds a "threshold," work is reallocated among the "graphics rendering pipelines."

Defendants argue that the "performance report" must contain "the amount of time that the rendering pipe required to render a [portion of the assigned image]," or, in other words, "numerical time values." Plaintiff asserts that a performance report need not be numeric in nature or measure time required for rendering. To evaluate the parties' arguments, I turn first to the claims of the patent. Phillips, 415 F.3d at 1314. By their own terms, claims 1, 7 and 8 require the performance report to be compared to a threshold, and if the threshold is surpassed, work to be reallocated accordingly. Claims 7 and 8 direct reallocation of work when the difference between the performance reports is above a threshold. A simple report regarding which pipeline completed its work first would not provide information that could be compared to a threshold. Moreover, it would be odd to compare a report of non-numeric values of any sort to a "threshold" and seemingly impossible to calculate the "difference" between two non-numeric reports.

Next, the patent specification states that "the performance report states the *amount* of time that was required to render a [portion of the assigned image]." This provides additional support for the proposition that the "performance reports" reflect not only numeric values, but specifically, numeric time values. Abbott Laboratories v. Andrx Pharmaceuticals, Inc., 452 F.3d 1331, 1336 (Fed.Cir.2006) ("Where claim terms are ambiguous or disputed, then we turn to the specification as the specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term."). Further, during the prosecution of the '376 patent, the examiner rejected all original claims, and plaintiff amended claims 1, 7 and 8 to include the word "threshold." This is additional evidence that the requirement for comparison to some fixed value is an important aspect of the claims.

Thus, I am inclined to agree with defendants that the claims require the performance report generated by the graphics rendering pipelines to include information about the length of time required for processing. However, even if I adopted plaintiff's construction of the term "performance report," defendants would still be entitled to summary judgment with respect to plaintiff's claims of infringement of the '376 patent because plaintiff has adduced no evidence that any of the accused products produce "performance reports" of any variety.

Again, as the party asserting infringement, plaintiff bears the burden of adducing evidence from which a reasonable jury could conclude that the accused products infringed the '376 patent. TechSearch, 286 F.3d at 1371. Plaintiff has not done so, having proposed *no* facts of its own.

The only possible source of factual support for plaintiff's argument that the accused products infringe the '376 patent is contained in its response to defendants' proposed fact # 160, dkt. # 132, at 78. In its response, plaintiff offers the conclusory "fact" that "some of ATI's cards and chipsets, in prototypes, *and in one or more of the accused products,* have produced performance reports as claimed in the '376 patent." However,

as defendants point out, the evidence plaintiff has cited in support of this fact makes no mention of the accused products, only the prototypes. Fahrenkrog Decl., dkt. # 133, Exh. U at 59-64; Stevenson Supp. Decl., dkt. # 121, at 3. In reply, defendants have averred that *none* of the accused products actually use the prototypes' method of balancing work among multiple graphics rendering pipelines. In light of these facts, a reasonable jury could not conclude that the accused products infringed claims 1, 5, 6, 7, 8, 9 or 11 of the '376 patent.

ORDER

IT IS ORDERED that:

1. The motion for partial summary judgment of defendants ATI Technologies, Inc., ATI Technologies ULC and Advanced MicroDevices, Inc. is GRANTED with respect to plaintiff Silicon Graphics, Inc.'s claims that

a. defendants infringe claims 1, 2, 4, 5 and 6 of the '327 patent by making, offering to sell or selling the Radeon 9500, 9550, 9600, 9700, 9800, X300, X550, X600, X700, X800, X850, X1300, X1600, X1650, X1800, X1900 and X1950; the Mobility Radeon 9500, 9550, 9600, 9700, 9800, X300, X600, X700, X800, X1300, X1350, X1400, X1450, X1600, X1700 and X1800; the Radeon Xpress 1100, 200 and 200 for Intel; the Fire GL T2-128, X1-128, X1-256p, X2-256, X3-256, V3100, V3200, V3300, V3400, V5000, V5100, V5200, V7100, V7200, V7300, V7350 and Z1-128; the Mobility FireGL T2, V3100, V3200 and V5000; the Radeon Cross Fire Editions; the All-In-Wonder X1900, 2006 PCI Express, 2006 Edition and X800 XT; the Imageon 2300, 2380 and 2388; the R300, R350, RV360, RV370, RV380, M10, M11, RS480, R420, R423, RV410, R430, R480, R481, M18, M28, R520, RV515, RV530, RV535, RV560, R580, RV570, M52, M62, M56, M64 and M66;

b. defendants infringe claims 1, 4, 5, 6, 8, 11 and 16 of the '200 patent by making, using, offering to sell or selling the Radeon Cross Fire Edition and compatible Radeon cards including X1950 and CrossFire editions X850, X1300, X1600, X1650, X1800 and X1900;

c. defendants infringe claims 1, 5, 6, 7, 8, 9 and 11 of the '376 patent by making, using, offering to sell or selling the Radeon Cross Fire Edition and compatible Radeon cards including X1950 and CrossFire editions X850, X1300, X1600, X1650, X1800 and X1900.

2. Defendants' motion for partial summary judgment is DENIED with respect to plaintiff's claims that

a. defendants infringe claims 1, 2, 4, 5 and 6 of the '327 patent by using the accused devices; and

b. defendants infringe claim 9 of the '327 patent by making, using, offering to sell or selling the Radeon 9500, 9550, 9600, 9700, 9800, X300, X550, X600, X700, X800, X850, X1300, X1600, X1650, X1800, X1900 and X1950; the Mobility Radeon 9500, 9550, 9600, 9700, 9800, X300, X600, X700, X800, X1300, X1350, X1400, X1450, X1600, X1700 and X1800; the Radeon Xpress 1100, 200 and 200 for Intel; the Fire GL T2-128, X1-128, X1-256p, X2-256, X3-256, V3100, V3200, V3300, V3400, V5000, V5100, V5200, V7100, V7200, V7300, V7350 and Z1-128; the Mobility FireGL T2, V3100, V3200 and V5000; the Radeon Cross Fire Editions; the All-In-Wonder X1900, 2006 PCI Express, 2006 Edition and X800 XT; the Imageon 2300, 2380 and 2388; the R300, R350, RV360, RV370, RV380, M10, M1 1, RS480, R420, R423, RV410, R430, R480, R481, M18, M28, R520, RV515, RV530, RV535, RV560, R580, RV570, M52, M62, M56, M64 and M66.

W.D.Wis.,2007.
Silicon Graphics, Inc. v. ATI Technologies, Inc.

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