United States District Court,
S.D. Texas, Houston Division.

COMPAQ COMPUTER CORPORATION,
Plaintiff.
v.
EMACHINES, INC., Trigem Computer, Inc., Trigem America Corporation, and Korea Data Systems,
Defendants.

Feb. 26, 2002.

MEMORANDUM OPINION

HOYT**, J.**

This is a patent infringement suit brought by Compaq Computer Corporation ("Compaq") against eMachines Trigem Computer, Inc., Trigem America Corporation and Korea Data Systems ("the defendants"). FN1 Compaq contends that the defendants collectively are literally infringing thirteen (13) Claims in nine (9) of its Patents. The nine Patents are: U.S. Patents: 5,727,213 ("the VanderKamp '213 Patent"); 4,574,279 ("the Roberts '279 Patent"); 5,381,530 ("the Thayer '530 Patent); 4,942,606 ("the Kaiser '606 Patent"); 5,539,917 ("the Jirgal '917 Patent"); 5,892,976 ("the Jirgal '976 Patent"); 5,570,107 ("the Wood '107 Patent"); 5,774,680 ("the Wanner '680 Patent"); and 5,737,604 ("the Miller '604 Patent").

FN1. Trigem Computer, Inc., (TGI) is a Korean Company that supplies personal computers and computer components. Emachines purchases for resale TGI and KDS personal computers. KDS and TGI are the largest shareholders in e-machines. Trigem America Corp. is a wholly owned subsidiary of TGI.

Before the Court are Compaq's motion for summary judgment on the issues of claim construction and infringement. Also, before the Court are defendant e-Machine's counterclaim of inequitable conduct and fraud, and all defendants' responses and cross-motions for summary judgment on these nine patents. As well, the defendants' assert that in four other Compaq patents; 5,611,078, (the Miller '078 patent); 5,581,727 (the Collins '727 patent); 5,506,997 (the Maguire '997 Patent) and 5,724,226 (the Ruch '226 Patent) the defendants are entitled to summary judgment. The Court has completed its review of the motions, documentation provided, the brief and relevant law, and enters this Memorandum Opinion concerning the various claims. FN2

FN2. It should be noted that the Court has not addressed all aspects of the defendants' motions for summary judgment. Some aspects of the defendants' defenses are reserved for other motions and/or trial along with e-Machines counterclaims of inequitable conduct and fraud.

PART I

II. DESCRIPTION OF INVENTIONS AND CLAIMS

A. Compaq's Patents Described

The Patents in suit are described by Compaq as follows: (a) the Miller '078 and the Miller '604 Patents describe a method and apparatus for independently resetting processors and cache controllers in multiple processor systems; (b) the Collins '727 Patent describes a method for flushing the cache, memory to delete or remove obsolete information; (c) the Kaiser '606 Patent describes a computer with improved keyboard password functions; (d) the Thayer '530 Patent describes a programmable logic system for filtering commands to a microprocessor; (e) the Jirgal '917 Patent describes a computer system having circuitry interfacing DMA Controller directly with a parallel port having specific timing control to allow printing operation without microprocessor intervention; (f) the Jirgal '976 Patent describes a system for parallel port with direct memory access controller for developing signal to indicate packet available and receiving signal that packet has been accepted; (g) the Maguire '997 Patent describes a method for mapping and routing interrupt signals for prioritizing the signals, thus, freeing the microprocessor from unnecessary operations; (h) the Wanner '680 Patent describes a method for permitting interfacing direct memory access devices to a Non-ISA Bus; (i) the Wood '107 Patent, describes a circuitry and method for high visibility cursor generation in a graphics display; (j) the Roberts '279 Patent describes a video display system having multiple selectable screen formats; (k) the VanderKamp '213 Patent describes a computer system capable of booting from CD-ROM and tape; and (l) the Ruch '226 Patent describes a method for a pivoting computer door.

B. Compaq's and Defendants' Contentions, Generally

Compaq asserts that there is no factual dispute concerning the structure of Compaq's products as to these nine (9) Patents, from which 13 Claims of infringement are alleged. Compaq also asserts that the defendants have asserted no defense to Compaq's claim of infringement as to the VanderKamp '213 Patent.

The defendants' claim invalidity due to obviousness as to all of Compaq's Patents. The defendants also assert invalidity by anticipation and pursuant to Title 35 U.S.C. s. 112(6). In the latter assertion the defendants assert that the patents specifications do not contain written descriptions of the claimed invention in clear and concise language such that the manner and means of making and using the invention is clear.

Other invalidity assertions made by the defendants include invalidity: (a) under the doctrine of implied license and patent exhaustion; (b) because the products and processes function substantially different from the disclosed invention; and, (c) because the claims are barred under the doctrines of waiver, laches, and/or estoppel. Finally, eMachines counterclaims that Compaq has engaged in false and misleading advertising under the Lanham Act, 15 U.S.C. s. 1125(a), business disparagement, and unfair competition under Texas common law.

III. THE CONTROLLING LEGAL AUTHORITIES

A. Summary Judgment Standard

Summary judgment is appropriate if no genuine issue of material fact exists and the moving party is entitled to judgment as a matter of law. Fed.R.Civ.P. 56. A fact is "material" if its resolution in favor of one party

might affect the outcome of the suit under governing law. Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). "Factual disputes that are irrelevant or unnecessary will not be counted." Id. at 248. An issue is "genuine" if the evidence is sufficient for a reasonable jury to return a verdict for the nonmoving party. *Id*. If the evidence rebutting the motion for summary judgment is only colorable or lacks probative value, summary judgment should be granted. *Id*. at 249-50; *see also* Lewis v. Glendel Drilling Co., 898 F.2d 1083, 108 (5th Cir.1990), *cert. denied,* 112 S.Ct. 171 (1991).

Under Rule 56(c) of the Federal Rules of Civil Procedure, the moving party bears the initial burden of "informing the district court of the basis for its motion and identifying those portions of [the record] which it believes demonstrate the absence of a genuine issue for trial." Matsushita Elec. Ind. Co. v. Zenith Radio Corp., 475 U.S. 574, 586-87 (1986); Leonard v. Dixie Well Serv. & Supply, Inc., 828 F.2d 291, 294 (5th Cir.1987). Where the moving party has met its Rule 56(c) burden, the nonmovant must come forward with "specific facts showing that there is a *genuine issue for trial*." Matsushita, 475 U.S. at 586-87 (quoting Fed.R.Civ.P.56(e)) (emphasis in original); Celotex Corp. v. Catrett, 477 U.S. 317 (1986); and Leonard, 828 F.2d at 294. To sustain the burden, the nonmoving party must produce evidence admissible at trial showing that reasonable minds could differ regarding a genuine issue of material fact. Anderson, 477 U.S. at 250-51; 255. Thomas v. Price, 975 F.2d 231, 235 (5th Cir.1992). In deciding a summary judgment motion, "[t]he evidence of the nonmovant is to be believed, and all justifiable inferences are to be drawn in his favor." Anderson, 477 U.S. at 255.

B. Claim Construction, Generally

Claim construction is the first step in determining whether an accused device is an infringing device. Case law permits the Court to determine the intentions of the patentee by determining the meaning of words and claims, as a matter of law. Markman v. Westview Instruments, Inc., 52 F.3d 967, 988 (Fed.Cir.) *aff'd,* 517 U.S. 370 (1996). The case law is undisputed that in determining the meaning of words in a claim, a court looks first to the patent, *i.e.* the claims and specifications. *Id*. When the prosecution history is in evidence, it too, may be considered in determining the intentions of the patentee. Victronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed.Cir.1996).

The scope of the invention is generally defined by the words or terms of the claims. Id. at 1582. Thus, words used in a claim are to be given their ordinary or customary meaning unless it is clear from the specification or patent history that a special meaning appertains. *Johnson Worldwide Assoc., Inc. v. Zebco, Corp.,* 175 F.3d 968, 988 (Fed.Cir.1999). However, the fact that the specification does not set forth a "novel" definition does not permit reading into the claim language a limitation from the claim description. *See* Tate Access Floors, Inc. v. Maxcess Technologies, Inc., 222 F.3d 958, 966 (Fed.Cir.2000). Even where the specification indicates a certain preferred embodiments, that preference cannot be read as a limitation where the claim language is broader than the embodiments. *See* Kemco Sales, Inc. v. Control Paper Co., 208 F.3d 1352, 1362 (Fed.Cir.2000).

When claims are drafted in "means plus function" form, the presumption is that 35 U.S.C. s. 112(6) applies. A "means plus function" claim limitation is construed to cover the structure disclosed in the specification of the patent to perform the claimed function plus equivalents of that structure. Caterpillar Inc. v. Deere & Co., 224 F.3d 1374, 1379 (Fed.Cir.2000). Where a claim is stated as a mean plus function language, the court must identify both the stated function and the corresponding structure, or means described in the specification by which the structure performs the identified function. *See* Micro Chem., Inc. v. Great Plains Chem. Co., 194 F.3d 1250, 1257-58 (Fed.Cir.1999). Thus, the intentions of the patentee, concerning

whether the terms carry "means plus function," limitation may also be determined by reference to the specification. *Kegel Co.*, 127 F.3d at 1426.

Where "means for" language is not used, the presumption is that s. 112(6) does not apply and therefore, the elements of a claim are not to be construed as means plus function elements. Personalized Media Communications L.L.C. v. Int'l Trade Comm'n, 161 F.3d 696, 703-04 (Fed.Cir.1998). To overcome the presumption where no "means plus" language is used in the element(s) of a claim, a defendant must establish that the claim, as properly construed, does not recite sufficiently definite structure to avoid application of s. 112(6). *See* Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206 (Fed.Cir.1998). Nevertheless, when it is apparent that elements are in functional terms, without reciting specific structure or material for performing such functions, then the claim element(s) may be interpreted as means plus function element(s)-despite the lack of express means plus function language. *Al- Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1318 (Fed.Cir.1999) (citations omitted).

A structural claim does not have the limitations imposed on a mean plus function claim. Thus, it is not limited by the particular structure disclosed in the embodiments. Rodine PLC v. Seagate Technology, Inc., 174 F.3d 1294, 1303 (Fed.Cir.1999). With these legal parameters in place, the Court proceeds to address the Patents and Claims in dispute.

Part II

IV. DISCUSSION OF COMPAQ'S CLAIM(S): LANGUAGE, CLAIM CONSTRUCTION AND INFRINGEMENT

A. The Wood '107 Patent-Claim One

In this claim for infringement, the plaintiff asserts that several of the defendants' computers literally infringe Claim one (1) of the Wood '107 Patent. Claim One calls for "a data processing apparatus" comprising of:

a frame memory, having an output connected to a pixel bus, for presenting pixel data corresponding to locations in a displayed image;

processing circuitry having an input coupled to the output of said frame memory, for converting said pixel data into a digital form corresponding to display intensity;

inverting circuitry, for receiving the converted pixel data from said processing circuitry and for inverting the converted pixel data responsive to a cursor control signal;

a cursor enable circuit coupled to said inverting circuitry, for generating said cursor control signal responsive to a current display location corresponding to a cursor location in the displayed image;

output circuitry, coupled to said inverting circuitry, for presenting the output of said inverting circuitry to a display device;

a video processor, coupled to said frame memory for accessing said frame memory and for storing data therein corresponding to an image to be displayed;

a host processor, coupled to said video processor by way of a host bus, and

a display device, coupled to said output circuitry.

After the language "processing circuitry," "inverting circuitry," "a cursor enable circuit," and "output circuitry," the defendants would add the term "means." However, Compaq argues that the elements are in structural, not means-plus-function, form. Therefore, s. 112(6) is inapplicable.

The Wood '107 Patent invents a method for achieving a higher resolution (picture or graphic) "by increasing the density of picture elements ("pixels") within the screen area." The higher the pixel density, the smaller the pixel size, resulting in increased resolution of the displayed image. The higher pixel is generated by cursors. "A cursor is a block of pixels for indicating a particular location in the display area that may be seen on a multi-colored screen. *See* Wood ['107 Patent- *Background of the Invention* (1)]. The location of the cursor in the image communicates to the user the context of the desired input. Thus, the picture or graphic is more "accurate and lifelike" to the viewer.

The defendants assert that the elements of Claim One, which discloses a circuitry, should be construed in a mean-plus-function limitations. However, the terms "means," "function" and "means for" are not included in the Claim language. Thus, the presumption in law, that the Claim should not be construed as "means for" language must be overcome by the defendants.

To overcome the presumption that s. 112(6) is inapplicable, the defendant relies on the expert report of Marcian E. Hoff. However, the Hoff report does not create a dispute concerning the defendants' machine structure of the defendants' computers as they relate to Compaq's. In this regard, the structure requires: (a) a processing circuitry that is coupled to the frame memory; (b) inventing circuitry that receives the converted pixel data from the processing circuitry and inverts, in response to a cursor; (c) a cursor enable circuit that is coupled to the inventing circuit that is coupled to the inverting circuitry and generates the cursor control signal claimed; (d) a controller in the defendants' computer coupled to the circuitry that presents the output from the inverting circuitry to a monitor; (e) a video processor coupled to frame memory, or graphics controller; (f) a host processor (microprocessor) coupled to the graphics controller by either a PCI or AGP bus; and (g) a display device (video monitors) coupled to the output circuitry.

The sole question remaining is whether the structure disclosed by Compaq's computers should be limited to the specification by which they perform the function. The Court is of the opinion that they should not. Clearly, the Claim calls for electronic circuitry, not a computer program or other mechanical structures. Therefore, the defendants' evidence fails to overcome the presumption that s. 112(6) does not apply.

Accordingly, the Court holds that the Claim elements describe an apparatus and proper interpretation calls for electronic circuitry that performs the tasks as claimed in the invention, without limitation as to the type of electronic circuits. Moreover, because the defendants make, use, offer to sell or sells the same or equivalent apparatus, they infringe Claim One of the Wood '107 Patent. *See* 35 U.S.C. s. 271(a). Summary judgment is appropriate for Compaq on this Claim.

B. The VanderKamp '213 Patent-Claim One

Claim One of the VanderKamp '213 Patent describes a method of booting a computer by causing the CD-

ROM to emulate a floppy disk. Booting is necessary to restart and restore software when the computer "crashes" during use. Before, rebooting was accomplished, generally, from a floppy disk on which the information was stored. Thus, in the circumstance where the amount of information stored required several floppy disks, rebooting became cumbersome. The VanderKamp '213 Patent solved this problem. Under this invention a method is devised to boot the computer by causing the computer to recognize the CD-ROM to be a bootable CD-ROM. "A boot record on the CD-ROM is loaded into the computer memory, and the computer obtains the boot code from the CD-ROM." "Thus, the computer boots and loads the software from a single CD-ROM."

Comparing the defendants machines with Compaq's reveals the following: Claim One of the VanderKamp '213 Patent: (a) provides a CD-ROM having a boot record and floppy disk image in the primary volume space. [The defendants do not dispute that their computer(s) have a boot record and a floppy disk image in the primary volume space, and that the boot record contains identification information for accessing the floppy disk image]; (b) determines if the CD-ROM drive is the intended boot device. [The defendants evidence shows use of BIOS software revealing that the defendants' booting procedure checks the boot device to determine if the CD-ROM is one of the boot devices]; (c) determines if a boot record is present on the CD-ROM, and loads the information from the boot record into memory. [The defendants BIOS software makes this determination after loading the boot record into memory.]; (d) determines the location on the CD-ROM of the floppy disk image, using the boot record. [The defendants BIOS software uses the boot record to determine the location of the floppy disk image.]; and (e) obtains the boot code from the floppy disk image and executes the floppy disk image boot code to load the other code located in the floppy disk image. [The defendants' BIOS software reveals that their computers obtain the boot code from the floppy disk image and executes the floppy disk image boot code to load the operating system in the floppy disk image.]

This undisputed evidence shows that the defendants' booting method steps corresponds to each of the steps disclosed in Claim One. In fact, the defendants' expert does not challenge this fact, or the fact that the defendants' computers infringe Claim One of the VanderKamp '213 Patent. Instead, the defendants alleges inequitable conduct on the part of Compaq for failing to disclose prior art to the PTO during patent prosecution.

To prevail on this claim, the defendants must show by clear and convincing evidence that Compaq specifically intended to omit reference to the prior art, in bad faith. Refac Int'l, LTD v. Lotus Development Corp., 81 F.3d 1576, 1581 (Fed.Cir.1996) In support of its defense, the defendants proffered the art for making CD-ROM from another manufacturer, JVC. JVC manufacturers equipment that encodes digital data on the CD-ROM for purposes of using it to boot a PC system. Therefore, the defendants assert that JVC teaches the creation of a bootable CD-ROM. The Court disagrees.

The Court is of the opinion that JVC's method for making bootable CD-ROM teaches the art of encoding data on a fixed medium. In fact, this method teaches away from the VanderKamp '213 patent concept of capturing the image, normally stored on the floppy disk, and creating a default bootable drive without changing to the PC system. The JVC method requires making a change to the PC system.

Because Compaq's patent does not rely on JVC's prior art, disclosure of JVC prior art was not required. The Court concludes that certain of the defendants' machines literally infringe Claim One of the VanderKamp '213 Patent.

C. The Roberts '279 Patent-Claim 13

The Roberts '279 Patent relates to a video display system. The video display system is designed to be used with a personal computer for displaying "text" characters or "graphic" symbols on a cathode ray tube ("CRT") in selectable screen formats where the selected formats are the same size. The innovation claimed is that the system enables viewing of text and graphics without the need to rely on two video controllers and two monitors. The video controller accomplishes this task by means of circuitry that allows switching the display of texts or graphics.

The dispute between Compaq and the defendants concerns two phrases. The first is, "means response to a first and second mode select signal for switching from a first screen format ... to a second screen format." The second dispute concerns the phrase; "the same size display field in both height and width" as it relates to video formats.

In the first instance the defendants argue that the function "switching" as used in the Patent refers to both, identifying the screen format to be generated and generating the format. Compaq contends that the function "switching" refers only to the information that the computer provides to the video controller, instructing the controller what format to select. Thus, Compaq argues that once this information (switching) is relayed, the video controller chips (memory) identify the particular format to be generated. In this regard, switching refers to movement between modes, as opposed to generating images in the modes.

Looking to the language of Claim 13, the Court determines that the claimed function is the "switching between modes," not generating images in the modes. In this circumstance the Court need not look beyond the language employed in the Claim. *See* Markman 52 F.3d at 980-81. The invention calls for a means for switching through the video controller. Once switching occurs, the microprocessor, or central processing unit, makes the selection(s).

The defendants assert, however, that it does not literally infringe Claim 13 because all of the elements of the Claim do not exist in its computers. The defendants point to the mode line in Compaq's computer system and the absence of a mode line in its computer system. In this regard, the defendants argue that the mode line is a structural element of the switching means that distinguishes the parties' machines.

This defense is unavailing because it is the video controller chip and the memory registers in the video controller chip that identifies the particular format to be generated. Because the circuitry that controls the generation of the scan lines is unnecessary to the function of "switching" no selecting is necessary. The structure for this "switching" is the registers contained on the video controller. No other structure is required. Thus, means plus function limitations do not apply. However, even if such limitation were to apply, the structure identified is specific and limited. In this regard, the question is whether the structures are the same. The answer is affirmative.

The next issue is whether the machines function the same. The tripartite test of "function, way and result" prevails if the evidence shows that the defendants' computer system performs substantially the same function in substantially the same way to obtain the same results. *See Utah Medical Products, Inc. vs. Clinical Innovations Assoc. Inc.,* (2000 U.S.App. Lexis 31756). This is known as the doctrine of equivalents. Under the doctrine of equivalents, the mode control register used by the defendants performs substantially the same function as Compaq switching means and does so in substantially the same way, producing substantially similar results. Thus, the defendants' argument that its machines lack the mode line revealed in the structure

of Compaq's machines is of no consequence.

The defendants also challenge the "same size" language as it relates to the two video formats. The defendants argue that "same size" means that the actual difference in the text and graphic is less than 1/10th of an inch. Thus, the term "same size" creates a limitation based on the structure revealed. This challenge relates to whether "same size" is a term of art and, therefore, not understood by a person of ordinary skill in the art. Markman, 52 F.3d at 991. Compaq contends that "same size" is not technical language and refers to the "point of view" of the observer. When the observer is looking at height or width of the text and graphic on the monitor screen, the observer should conclude that the texts are the same size.

Attributing the ordinary and common meaning to the term(s) as used in the industry as well as common sense, and relying on the specification, the Court is of the opinion that the term focuses on observation from the eye of the user observer, not a technician. Thus, a "same size" display is one where the quality of the text and graphic have no discernable deterioration to the ordinary eye. The defendants' challenge fails.

D. The Jirgal '917 Patent-Claim One, and the Jirgal '976 Patent -Claims One and Thirteen

Claims One and 13 of the Jirgal '976 Patent are significantly similar in language to Claim One of the Jirgal '917 Patent. However, Claims One of the Jirgal '976 Patent does not disclose a timing circuit. And, although Claim 13 does use a timing circuit, it does not use the four sub-components that Claim One of the Jirgal '917 Patent uses with its timing circuit. It is undisputed that Claim One of the Jirgal '917 Patent is written in "means plus function" form. The dispute therefore, centers on what structure is necessary to perform the claimed function.

Contrary to the defendants' view, Compaq asserts that the Claims of the Jirgal '976 Patent are not written in "means plus function" form. Compaq asserts that the Claims should be interpreted in structural form. Thus, the Claim elements should not be limited to the disclosed embodiment. Claim One of the Jirgal '917 patent reads: FN3

FN3. Because the inventions claimed in Jirgal '917 and '976 are essentially the same, only the claim language of the Jirgal '917 is presented.

A computer system for communicating with an external device in a parallel format, comprising:
a microprocessor; memory means coupled to said microprocessor for storing instructions and data for said microprocessor and data to be communicated to the external device;

a direct memory access controller coupled to said memory for controlling the transfer of data from said memory;

parallel output port means coupled to said memory means and said direct memory access controller for receiving a plurality of data packets from said memory means under control of said direct memory access controller and for providing said data packets to the external device, said parallel output port means further including:

means for developing a signal for use by the external device to indicate that each data packet is available;

means for receiving a signal from the external device that each data packet has been accepted;

and a timing control circuit for controlling the operation of said parallel output port means, comprising:

means forming a data setup time interval, wherein said data packet is provided to the external device and said signal to indicate that each data packet is available is negated, for a first predetermined time;

means forming a data strobe time interval following said data setup time interval, wherein said data packet is provided to the external device and said signal to indicate that each data packet is available is asserted, for a second predetermined time;

means forming an acknowledge time interval following said data strobe time interval, wherein said signal to indicate that each data packet is available is negated;

and means forming a transfer completion time interval following said acknowledge time interval wherein said data packet is removed from provision to the external device responsive to said signal indicating that each data packet has been accepted.

The Jirgal '917 and '976 Patents invent methods for achieving faster processing time with regard to user requested computer tasks. The faster processing times are accomplished by relieving the central processing unit ("CPU") and/or microprocessors, of the burden of handling background functions for non-user related tasks. One such task, is the transfer of information between the computer's memory and the parallel port to a printer. The Jirgal '917 and '976 Patents specifically relieve the CPU and/or microprocessors of this task. Instead of contacting the parallel port directly, the circuitry enables the CPU to interface with a direct memory access controller ("DMA"), FN4 which in turn transfers information to the parallel port and on to the printer. Thus, the configured circuitry and the DMA apparatus allow the CPU to perform user tasks more quickly by minimizing a majority of the information transfer tasks that would ordinarily occur. *See* Jirgal '917 Patent- *Background of the Invention* (2).

FN4. A DMA is a device that allows a computer's memory and a peripheral device to transfer information between the computer's memory and the parallel port without direct interaction from the CPU.

Compaq concedes that Claim One of the Jirgal '917 Patent is stated in "means plus" language. However, the defendants assert that the Claims One and 13 of the Jirgal '976 Patent are also stated in "means plus" language. This is so, the defendants contend, because the Jirgal '976 Patent relies upon elements in the Jirgal '917 Patent. Thus, the defendants' reason, the language of both Patents should be considered "means plus" language. In support of their proposed construction, the defendants point out that Claims One and 13 of the Jirgal '976 Patent do not sufficiently describe structures that accomplish the functions of the patent. Therefore, they contend that both Patents should be subject to s. 112(6) limitations.

Compaq, however, contends that Claims One and 13 of the Jirgal '976 Patent are stated in structural form. And, because they are stated in structural form, they are not subject to, s. 112(6) limitation. Further, Compaq asserts that a consequence of adopting the defendants' view of construction is that the Claims are limited to using DMA alone to accomplish the desired function. Instead, the DMA is combined with "associated logic."

The disputes with regard to use of the DMA in conjunction with "associated logic", centers on the wiring and circuitry of the CPU. On the one hand, if Compaq's proffered construction of the claims is accepted, the Patents are apparatus patents and the methods used within the claims are not a limiting factor to construction of the Claims. On the other hand, if the defendants' proffered construction of the Claims is accepted, the Patents are limited by s. 112(6), and as a result, the accused machines must use the same structure to accomplish the same function in the same manner as Compaq's machines, in order to infringe the Patents.

The defendants admit that their machines are structurally the same as Compaq's machines. However, the defendants' claim that their machines use the CPU to communicate with the parallel output, therefore, they do not perform the same function the same way. Compaq contends that regardless of how the information is communicated to the parallel port, the fact that the machines are capable of being reconfigured to use a DMA, makes them infringing, as a matter of law.

Based upon a reading of Claims One and 13 of the Jirgal '976 Patent, the Court holds that the Claims do not provide sufficient structural elements to distinguish them from the elements of Claim One of the Jirgal '917 Patents. FN5 The Jirgal '976 patent presents a mixture of means-plus-function elements. Thus, the Court is of the opinion that s. 112(6) limitations apply to both Patents.

FN5. One example of the indistinguishability in the two Patents is found in Claim One. Claim One of the '917 states: "means for developing a signal for use" while '976 states: "a circuit for developing a signal for use ..." In the Court's view "means" and "circuit" are interchangeable in that "Circuit" becomes the means by which the signal is developed or used. In the Court's view, sufficient definite structure is not apparent. *See* Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1213 (Fed.Cir.1998).

The Court also relies on the holding in High Tech Med. Instrumentation, Inc., v. New Image Indus. 49 F.3d 1551 (Fed.Cir.1995), for disposition of Compaq's contentions of structure and infringement. In that case, the holder of a patent for a dental endoscope, brought an infringement action against one of its competitors. An endoscope is a miniature imaging device that was "rotably coupled" to its housing components allowing the device to rotate during use. The accused device was structurally similar to the patented endoscope. However, it was not sold with the rotably coupled feature. Rather, the accused device was locked in place in its housing component by two set-screws that prevented it from rotating. The holder of the patent, relying on *Intel Corp.*, contended that because the accused device was capable of rotating if the screws were taken out of the housing component, it literally infringed the claims of the patented endoscope. The Federal Circuit held otherwise. 49 F.3d at 1555.

Infringement does not occur simply because it is *possible to alter* an accused device in a way that it would satisfy all the limitations of a patent claim. *Id*. Infringement occurs where a device is "designed to be altered or assembled before operation ..." and such an "alteration or assemb[ly] infringes a valid patent." *Id*. at 1556. *See* High Tech Med. Instrumentation, Inc ., 49 F.3d at 1556 (citing Paper Converting Mach. Co v. Magna-Graphics Corp., 745 F.2d 11, 19, 223 U.S.P.Q. 591, 597 (Fed.Cir.1984) (standing for the proposition that components of a machine infringe a valid patent claim when such components are ready for assembly and serve "no useful noninfringing purpose")).

In addition to its aforementioned holdings and limitations of *Intel Corporation,* the Court also distinguished *Intel Corporation* by stating that *the patent claim there covered* devices that were *programable* to operate as

the patented invention. Thus, the Court opined that the patent language in *Intel Corp.*, covered the device at issue in that case.

It is noteworthy that the defendants' computers do not use a DMA to communicate with the parallel port. Instead, the defendants' computers use a CPU, the basic method or prior art that was used before Compaq's Patents. But, as provided earlier, the defendants' computers are structurally the same as Compaq's computers. Thus, the relevant question here is whether the circuitry and/or structure of the defendants' computers serve any useful non-infringing purpose, where a DMA is not used to communicate with the parallel port. The Court holds that based upon the defendants' expert report of M. Ray Mercer, the answer to this question is yes.

The Mercer report demonstrates that the defendants' computers operate similar to prior art by relying upon a CPU to transfer information to the parallel port and the transfer of that information onto a printer. As a conclusion then, the defendants' circuitry here is useful. Thus, the defendants' computers do not function the same as Compaq's machines. This holds true even though the defendants' computers, as provided in Compaq's expert report of George T. Ligler, are structurally similar and are capable, with modifications, of operating in such a manner that a DMA could be used to communicate with the parallel port and then transfer information onto a printer. The fact that the defendants' machines would require alteration, which alteration would provide significant side effects to the computer's operations squares the defendants' arguments with the *High Tech Med. Instrumentation, Inc.*, reasoning. That is, simply because a device may be altered to infringe a patent claim, does not make it so if the accused device is operational without such alteration and assembly. *Id*. Thus, no infringement of the Jirgal '917 and '976 Patent Claims has occurred.

E. The Thayer '530 Patent Claims 14 and 26

The Thayer '530 Patent, Claims, 14 and 26, feature a circuitry that when coupled to a peripheral controller, processes certain signals faster while maintaining the ability to operate with older software applications. The innovation resolves a dilemma inherent in the newly designed computer as they attempt to maintain compatibility with older software. Patent Claims 14 and 26 of the Thayer '530 Patent state in essentials:

[14] A data processing system, comprising: ... circuitry, having inputs coupled to said microprocessor to receive input commands therefrom, for generating the FORCE-A20 signal responsive to receive a FORCE-A20 input command from said microprocessor and *in replacement* of said controller generating the FORCE-A20 signal; ... [emphasis added]

* * *

[26] A data processing system, comprising: ... circuitry, having inputs coupled to said microprocessor to receive input commands therefrom, for generating the microprocessor reset signal responsive to receiving a microprocessor reset input command from said microprocessor *in replacement* of said controller generating the microprocessor reset signal, ...

Compaq contends that the use of the phrase "in replacement" in Claims 14 and 26 means "instead of." The defendants argument to the contrary, asserts Compaq, overlooks the function to be accomplished. According to Compaq, the Claims require some circuitry other than the controller to generate the microprocessor reset signal. The defendants argue that "circuitry having inputs coupled to the microprocessor to receive input

commands" language should be limited to the structure described in the patent. Thus, the Court should apply "means-plus-function" limitations to the Claims. The only structure described, according to the defendants, is the "programmable array logic" (PAL). Thus, the defendants argue, even if the circuitry element is not deemed to be a "means" element it must be construed as filtering circuitry connected between the microprocessor and the peripheral controller for intercepting FORCE-A20, or for intercepting microprocessor reset commands from the peripheral controller to perform the command and produce either the FORCE-A20 or the CPU-RESET functions. The defendants argue that for PAL to accomplish the functions, it by necessity must block the keyboard controller from doing so.

It is true that PAL circuitry intercepts the FORCE-A20 and CPU-RESET commands before they are received by the peripheral controller and performs the functions "instead of" the peripheral controller. Blocking means to obstruct the movement of the signal. Alone blocking accomplishes nothing. The functions that are described in Claims 14 and 26 do not obstruct the signal. Instead, they intercept and fulfill the functions. Therefore, the Court holds that "in replacement" means "instead of."

Next, Compaq asserts that several of the defendants' machines infringe the Thayer '530 patent. The defendants admit that its ITE controllers also contain circuitry for enhancing the performance of the FORCE-A20 and the CPU RESET functions. However, the defendants deny that its circuitry performs the identical function as Compaq's. Instead, the defendant argues that both the hardware circuitry and the peripheral controller are processing the functions simultaneously. The defendant further asserts that upon completion of the function, the ITE controller allows only the output of the selected method-either the peripheral controller or the hardware circuitry.

Looking first to the Claim's structures it is undisputed that they contains four elements: a microprocessor, a controller that has input capable of receiving a FORCE-A20 or CPU RESET command from the microprocessor, a circuitry capable of receiving and generating the FORCE-A20 or CPU RESET signal *in replacement* of the controller generating that signal, and the circuitry capable of generating the FORCE-A20 or the microprocessor signals in a shorter time than the controller. Each of these elements is found in the defendants' computers. The defendants' argument, that their computers do not block the two commands and, therefore, do not infringe is premised on the erroneous view that Compaq's computers block the signals or commands. Completing the functions described in Claims 14 or 26 do not require blocking.

The defendants also argue that they do not use the circuitry to accomplish the functions. This argument is unavailing. The law requires only that the accused device have the claimed structure and is capable of performing the same function. See Intel Corp. v. Int'l Trade Comm'n, 946 F.2d 821, 832 (Fed.Cir.1991). It is the Court's opinion that the defendants' computers have the claimed structure and perform the same function in the same manner. In the Court's view, the fact that simultaneous commands are used to signal the function does not obscure the fact the defendants' computers contain a comparable keyboard controller that receives commands from the microprocessor which includes a FORCE A-20 input command intended to generate the FORCE-A20 and CPU RESET signals. In short, and in particular, the ITE 8702F Super I/0 function in relevant measure, the same as the ITE 8673F Super I/0, and both are capable of receiving the relevant signal commands from the microprocessor.

Thus, the Court rejects the defendants' arguments, finding that certain of the defendants' computer models literally infringe Claims 14 and 20 of the Thayer '530 Patent.

F. The Kaiser '606 Patent, Claim 14

In the Kaiser '606 Patent, the parties dispute focuses on two phrases: "control sequence" and "selected commands." Patent Claim 14 of the Kaiser '606 Patent describes:

A computer system comprising:

... a peripheral controller [for] transferring data and commands to and from said CPU according to a *control sequence* ... said *control sequence* including a lock-out mode preventing said peripheral controller from transferring said data and commands from said peripheral device to the CPU, but allowing said CPU to transfer *selected commands* from the CPU to the peripheral device [emphasis added].

The defendants argue that "control sequence is the executing sequence of program code in the peripheral controller, which performs the function of processing the commands received from the CPU, and transferring data to the CPU." This element, according to the defendants, restricts the sequence in such a manner as to also perform the function of the "lock-out" mode.

Compaq claims that the term "selected commands" refers to any of the commands that allow the CPU to communicate with the peripherals to carry out behind-the-scenes activities. On the contrary, the defendants argue, "selected commands" means that a set of commands fewer than the complete set of commands are sent to peripheral devices such as the mouse or keyboard. Thus, filtering of one or more commands occurs, preventing full transmission to the peripherical device.

A reading of the specifications fails to support the view that a specific number of commands from the CPU are filtered or disabled. It is the peripheral device that is disabled. The Court, therefore, rejects the defendants' interpretation of "selected commands" and adopts Compaq's view.

Next, Compaq asserts that the defendants' computers infringe Claim 14 of the Patent. Here, Compaq asserts structural infringement because the Claim calls for a computer system that includes: (a) a CPU; (b) a peripheral controller device; (c) accessed by said CPU according to a control sequence with (d) at least one peripheral device coupled to said peripheral controller, generating commands to said CPU.

The defendants contend that an examination of its computers reveals that they do not have features that would represent what is claimed in the Kaiser '606 Patent. Yet, the defendants admit that it is possible to fully implement the "lock-out mode" on its computers using the password without the cooperation of the system BIOS. According to the defendants, the password feature is completely implemented or is implemented in the system's BIOS and does not require password capabilities from the peripheral controller. The defendants also admit that Compaq was successful, using the MS-DOS version 6.2, to activate "an undocumented" lock-out mode in the peripheral controller. However, the defendants argue that the program used by Compaq is not commercially available, and obsolete, therefore, the fact that Compaq was able to activate the lock-out feature in the peripheral controller is of no consequence. The Court disagrees.

Even through it may be argued that the program code in the peripheral controller is a document code, it nevertheless performs a "lock-out mode" function. Moreover, the defendants argument, that its products do not selectively prevent commands from being transmitted from the CPU to peripherical devices but, instead, allows all commands to be transferred from the CPU to peripherical devices do not avoid infringement. Compaq's test(s) revealed that the defendants computer is capable of supporting a CPU controller lock-out mode as claimed in the Kaiser '606 Patent.

Infringement exists because the accused product performed the same or is capable of performing the same function using the same structure as that described in Claim 14 of the Kaiser '606 Patent. *See* IMS Tech Inc. v. Haas Automation Inc., 206 F.3d 1422, 1435 (Fed.Civ.2000). Thus, the defendants' computers are found to be infringing.

G. The Miller '078 and '604 Patent Claims Four, One and Seven Respectively FN6

FN6. Because the defendant concedes that Claim 4 of the Miller '078 Patent is identical in specifications to the Miller '604 Patent no further or additional discussion is necessary on the issues of claim construction and infringement. The Court's interpretation of Claim 4 of the Miller '078 Patent would be the same as Claims One and Seven of the Miller '604 Patent. The Miller '604 Patent is a continuation of the '078.

The Miller '604 Patent, Claims One and Seven teach a method for independently resetting the primary and secondary processors under program control located in a microprocessor cache memory system without causing the cache memory controllers to reset. Claims One and Seven of the Miller '604 Patent state in relevant part:

"A computer system responsive to a system reset signal and a *processor only reset* signal comprising: ... and *processor reset circuitry* receiving the system reset signal, said processor reset circuit for resetting the processor responsive to said system reset signal or said processor-only reset signal.

The distinction between Claims One and Seven, is in the component parts of the computer system. For Claim One, the system requires: (1) a processor; (2) a system main memory; (3) a system bus; (4) a hard disk memory; (5) a cache memory; (6) a cache memory controller; (7) cache memory circuitry; and, (8) a processor reset circuitry. Claim Seven contains all of the requirements of Claim One, but substitutes a video system in the place of the hard disk memory. All Claims, One and Seven of the '604 Patent and Claim Four of the '078 Patent, call for "cache reset circuitry coupled to cache memory controller for resetting cache memory controller responsive to the system reset signal but unresponsive to the processor only reset signal."

Compaq asserts that "processor only reset signal" as used in the Claims means simply "a signal that must reset circuitry within the processor without resetting the cache memory or cache controller ." The phrase "system bus" as used in the Claims, according to Compaq, means the bus that transmits program instructions, data and control signals. And, "process reset circuitry" in the Claims means a circuitry such that the "system reset signal" may reset both the cache and the processor, where the processor only reset signal does not reset the cache.

The defendants contend that the term "reset" requires that all elements of the device return to a known initialization state. Thus, the processor only reset signal must reset everything in an accused processor. They assert that both phrases "cache reset circuitry" and "processor reset circuitry" are described in a mean-plus-function language. The function, according to the defendants, is to reset the cache memory controller in response to the system reset signal, but not in response to the processor only reset signal. With regard, to the "processor reset circuitry," the defendants contend that it resets the processor in response to either the system reset signal, or the processor only reset signal.

The Court returns to the question raised by the defendants, whether the terms used the Claims should be construed as means-plus-function elements even though, admittedly, the word "means" does not appear in

the language chosen by Compaq. The defendants contend that the language chosen should be construed as claim limitation language because it describes a function to be performed rather than a definite structure or materials. Thus, the terms "cache reset circuitry," "processor reset circuitry" must be construed as a function to be performed to avoid having these terms cover every conceivable way or means to perform the function of resetting the cache memory and the processor. *See* In re Donaldson Co. Inc., 16 F.3d 1189, (Fed.Cir.1994).

The Court is of the opinion and holds that the Claims and terms in dispute relate to the structure of Compaq's and the defendants' computers. It is not disputed that both Compaq's and the defendants' computers have a processor, a main memory, a system bus, a cache memory and a cache memory controller. In addition the computers require either a hard disk memory or video system. The two elements that the defendants seek limitation on are the "cache reset circuitry" and the "processor reset circuitry."

The defendants' construction of the term "reset" as requiring a reset of all elements of the processor is erroneous. The reset necessary is that required while the computer is operational and pursuant to certain application programs. The Claims are directed to the circuitry that provides the "system reset" signal and "processor only reset" signal to the processor. Thus, reset as used in the Claims refers to the microprocessor.

The evidence shows that the defendants' computers include all of the components of Compaq's computers. Moreover, with regard to the elements in dispute in the Claims, the defendants' computers perform the same function as Compaq's. The defendants admit, for example, that in its INIT the processor resets the "integer registers" inside the processor without affecting the internal cache. Comparing Compaq's specification revealed in the preferred embodiments makes it clear that the features that reset the defendants' processor are the same or the equivalent of those of Compaq. Therefore, the defendants' machines use the same structure to reset the selected processors while not resetting everything in the processor.

Next, the defendants argue that the "system bus" element of the Patent should be limited to the EISA bus as shown in the Patent's figure(s). Although this issue is subsumed in the earlier mean-plus-function discussion, it bears repeating here. The Patent discloses a "system bus" connected to the cache memory controller that is accessed during operations to determine whether program instructions or data are located in the cache memory. Thus, defendants argument that the cache memory controller does not connect to the system bus, but is limited to the EISA bus, is erroneous. Again, the Court holds that the defendants' computers literally infringe Claims One and Seven of the Miller '604 Patent and Claim Four of the Miller '078 Patent.

H. The Warner '680 Patent, Claims 13 and 44

The Warner '680 Patent claims the invention of a method for a DMA master to compatibly communicate with a processor for initializing (starting) and communicating with multiple DMA controllers. According to the Patent, the object is to control transfers of data between the processor, cache memory and main memory; the processor and the PCI bus; and between the PCI bus and the main memory. The data buffer provides a data path between the processor, cache memory and main memory; a data path between the processor and the PCI bus; and a data path between the PCI bus and the main memory. Thus, it is a method for directly accessing memory without involving the processor, thereby permitting access to memory while simultaneously freeing the processor for other processing tasks.

Compaq concedes that Claims 13 and 44 are stated in mean plus function terms. However, it asserts that the

embodiments of those Claims reside within the VIA Southbridge chip, which chip is also used by the defendants' machines. The defendants do not dispute this fact but instead argue non-infringement by asserting: (a) patent exhaustion due to the sales volume of VIA chip to third parties; (b) non-comparable function because the distributed DMA is not operational due to defects in the VIA Southbridge chip; and (c) insubstantial equivalency in function due to the structural elements. The relevant language Claim 13 the Wanner '680 Patent invents:

A master device for providing a bus master access to a shared register at a comparable address, said shared register being shared by at least two slave devices, each said slave device providing access to said shared register at a unique address, said bus master, said master device and said slave devices for coupling to a bus, the master device comprising: (six elements)

- means for accepting a cycle;

- means for translating said accepted cycle;

- means for requesting control;

- means for providing said translation;

- means for receiving a response; and,

- means for providing a response to said bus master ...

In Claim 44, Compaq claims to invent a DMA master for providing a bus master access to an 8237 compatible DMA register being shared by at least two DMA slaves. The remainder of Claim 44 reads as Claim 13. Compact asserts that the structure pertinent to this invention are a "master device" or a "DMA master device."

The defendants' schematic diagram of its computers shows that the defendants' computer contain a VIA VT82C596 Southbridge chip. Moreover, it is shown that the circuitry used by the defendants' VIA Southbridge performs or is capable of performing each of the functions described in the six elements of Compaq's Claims. Intel Corp. v. Int'l Trade Comm'n, 946 F.2d 821 (Fed.Cir.1991).

There is no dispute that the structure of the defendants' computers corresponds with the structure of Compaq's computers. The defendants' computers include either a master device or a DMA master device that have the structure and capacities claimed in the invention. *See* [Ligler Rep., Exhibits, Tab 5, 19-20 and 23-24]. Thus, the Court finds that the defendants' computers literally infringe Claims 13 and 44 of the Warner '680 Patent. This finding is appropriate because the defendants' computers contain the claimed structure capable of performing the functions described in the claims. Id. at 832. Therefore, summary judgment on behalf of Compaq is inappropriate.

PART III

V. DISCUSSION OF THE DEFENDANTS' PROFFERED CLAIM CONSTRUCTION: OTHER PATENTS

A. The Ruch '226 Patent -Claim 34

The Ruch '226 patent involves a patent for a computer door. The door allows access to the interior of a computer in order to support the interface of computer cards such as, for example, memory cards, fax modem cards, and network cards. Usually, the structures of such doors include spring-loaded shutter doors, bezel or snap-on type doors, and sliding doors. Each of these doors present various structural problems, including difficulty to manufacture and install as the spring-loaded and sliding doors, and they are easily lost or misplaced as the bezel or snap-on doors.

The Ruch '226 patent provides "cooperatively engageable surfaces operative during pivotal movement." The surfaces by force open and allow the deforming of the computer door upon entry or interface into the interior, and then permits the "deformed door member to return to its original shape." The design alleviates the aforementioned problems associated with spring, snap-on, and sliding doors. *See* [*Ruch* '226 Patent- *Background and Summary of the Invention* (1-2)]. Claim 34 of the Ruch '226 Patent describes an apparatus comprising:

[A] housing having a computer component therein, an exterior wall, and an opening formed in said exterior wall and providing access to said computer component; a door member; and mounting structure supporting said door member for pivotal movement, about a pivot axis, relative to said exterior wall between a closed position in which said door member blocks said opening, and an open position in which said door member unblocks said access opening. [S]aid door member and said mounting structure having cooperatively engageable surfaces operative during pivotal movement of said door member toward one of said open and closed positions thereof to resiliently deform said door member and then permit the resiliently deformed door member to return to its original shape in a manner driving itself a final distance to said one of said open and closed positions thereof.

[S]aid computer component being inwardly spaced apart from said opening, said door member being pivotable inwardly into said housing to said open position, and said door member being supported and configured in a manner such that during pivotal movement thereof to said open position said door member does not substantially encroach upon the space between said opening and said computer component.

Compaq does not argue that Claim 34 should be treated other than as a means claim. The defendants assert that Claim 34 is limited because it is stated in mean plus terms, *i.e.,* to "cooperatively engageable surfaces operative during pivotal movement" (sloped surfaces), that drive the door open and closed. Further, the defendants assert that their accused door utilizes "detents" to hold open and close the computer door. In addition, the defendants argue the doctrine of equivalents does not apply because the detent "bumps" do not perform the same function or provide the same results as stated in Claim 34. Therefore, the defendants assert that since every element of Claim 34 is not met by the accused door, no infringement has occurred.

The Court holds that the Patent invents a "means" for cooperatively engaging surfaces operative during pivotal movement that forces open and allows the deforming of the door upon entry or interface into the interior, and then permits the "deformed door member to return to its original shape." The defendants provided testimony from one of the Ruch '226 inventors, Kelly K. Smith,FN7 which persuades the Court that the accused door, which uses detents without "cooperatively engageable surfaces operative during pivotal movement" (sloped surfaces), does not infringe the Ruch '226 patent.

FN7. *See* Videotaped Deposition of Kelly K. Smith, August 18, 2000, pages 136-72.

Infringement occurs if the defendants "detents" results in pivotal movement that forces open and allowed the deforming of the door upon entry or interface into the interior of their machines, and then permitted the deformed door to return to its original shape. Based upon the record, that function does not occur. The detents do not serve to deform the door, they merely hold the door open and closed. Therefore, summary judgment for the defendants is appropriate.

B. The Maguire-Ferguson '997 Patent-Claims One and Eight

When IBM and IBM compatible computers (PC bus systems) were first designed, they were structured and described as a PC/AT or Industry Standard Architecture ("ISA") computer systems. An ISA computer system was slow with regard to handling increased memory speeds and various peripheral devices. For example, devices such as printers, monitors, and keyboards often need servicing by the microprocessor. To accomplish this task with an ISA system, the microprocessor would be required to continually poll the aforementioned devices, to determine if they needed servicing. This function used a large amount of the microprocessor's memory and time.

A new structure and description called an Extended Industry Standard Architecture ("EISA") computer system, became common in use. With an EISA system, a new method of checking to determine if peripheral devices needed servicing, termed interrupt driven I/O, also became common, replacing the polling method used in the ISA systems.

The interrupt driven I/O method for servicing peripheral devices allows such devices to communicate with the microprocessor when they need servicing, as opposed to the microprocessor polling or asking the devices at various times if they need servicing. Thus, the microprocessor's memory and time are saved, allowing other tasks to be performed more efficiently. The interrupt driven system may be used by either an ISA system or a EISA system. However, interrupt signals for a ISA or PC bus system is different than those of an EISA system. Therefore, if a signal is generated on a PC bus system, it must be redirected or mapped to an EISA interrupt signal to be able to take advantage of the interrupt driven I/O method. This is accomplished by a latching method that connects PC bus interrupt signals to EISA interrupt signals. In essence, this describes the function of the Patent of latching PS bus interrupt signals onto EISA interrupt signals. *See* [Maguire '997 Patent- *Background of the Invention* (1-3)]. Claim One of the Maguire '997 patent reads:

A device for mapping a set of interrupt signals generated on a bus of a first type to a set of interrupt signals defined by a bus of a second type, wherein the first bus is different from the second bus, and wherein any interrupt signal in the first set is capable of being mapped to any interrupt signal in the second set, the device comprising:

latching means connected to the first bus for latching interrupt signals generated on the first bus;

mapping means for storing data indicative of the mapping of each interrupt signal of the first bus to an interrupt signal of the second bus;

decoding means connected to said first bus interrupt signal latching means and said mapping means for

generating a third set of interrupt signals based on said mapping data and the first set of interrupt signals, wherein each interrupt signal in said third set corresponds to an interrupt signal in the second set; and

means connected to the second bus to receive the second set of interrupt signals and to said third set of interrupt signals for combining each interrupt signal in the second set with the corresponding interrupt signal in the third set to produce a final set of interrupt signals.

* * *

Claim Eight of the Maguire '997 patent reads:

A computer system comprising:

a microprocessor having an interrupt signal input; a bus of a first type, said first bus being coupled to said microprocessor and said first bus including a plurality of interrupt signals;

a bus of a second type having a plurality of interrupt signals, wherein said interrupt signals on said second bus are different from said interrupt signals on said first bus;

a device coupled between said first and second buses for mapping said first type interrupt signals to said second type interrupt signals, wherein any first type interrupt signal capable of being mapped to any second type interrupt signal, said device including:

latching means connected to said first bus for latching said first type interrupt signals;

mapping means for storing data indicative of the mapping of each interrupt signal of said first bus to an interrupt signal of said second bus;

decoding means connected to said first bus interrupt signal latching means and said mapping means for generating a third set of interrupt signals based on said mapping data and said first type interrupt signals, wherein each interrupt signal in said third set corresponds to a second type interrupt signal;

and means connected to said second bus to receive the second type interrupt signals and to said third set of interrupt signals for combining each second type interrupt signal with the corresponding interrupt signal in the third set to produce a final set of interrupt signals; and

an interrupt controller responsive to said final set of interrupt signals for generating a microprocessor interrupt signal provided to said microprocessor interrupt signal input.

Compaq does not argue that claim construction for Claim Eight of the Maguire '997 Patent should be interpreted other than a means claim. The defendants assert that Claims One and Eight, as limited because they describe a means for latching of interrupt signals from a first type bus to a second type bus. The Court agrees with the defendants' constructions of Claims One and Eight. Thus, the Court adopts the defendants proffered constructions in its entirety. *See* [Defendants' Motion And Supporting Authorities For Patent Claim Construction, pages 20-22.] Therefore, the Claims are interpreted as means claims. This limitation means that the latching method must be satisfied in structure and function in order for Compaq's Claim to

be infringed.

Based upon a reading of Claims One and Eight the Court holds that it is necessary to latch interrupt signals of a PC bus system (a first type bus) to those of an EISA system. (a second type bus). The record reveals that such latching means by the defendants' accused devices would only occur if microchips made by the Via Southbridge Corporation, which the defendants uses in their machines, possess the latching means. Further evidence shows that the microchips used by the defendants' machines do not possess such latching means. Thus, the accused device does not meet every claim requirement for infringement. It follows then, that summary judgment for the defendants is appropriate on these Claims.

C. The Collins '727 Patent-Claim One

Claim One of the Collins '727 Patent claims to invent an apparatus for monitoring and decoding processor bus cycles and flushing a second level cache upon decoding a special flush acknowledge cycle. *See* [Abstract-Collins '727 Patent]. The cache memory is used for fast memory access to frequently used data or instructions so that use of the processor is not required at all times. Main memory access is time consuming; therefore, cache memory permits quick access to certain memory.

The Collins '727 Patent describes a computer system that has a two-level cache memory structure. The first level cache memory may be accessed very quickly. The second level cache memory is external to the processor. From time-to-time it is necessary to flush the cache memory. The '727 invents a method for coordinating the first and second level cache flushes.

Claim One teaches that the processor receives a signal commanding it to flush its internal cache. After completing this cycle, the processor executes a special flush acknowledge cycle to inform any external device that houses the second level cache that the internal flush is completed. A cache memory controller detects this signal and in response provides a signal to the second level cache at which time the second level cache is flushed. The cache controller then provides an end of cycle signal to the processor indicating that the flush cycle is completed. *See Id*.

Claim One of the Collins '727 Patent claims a computer system, comprising:

a processor bus for carrying cycles, ...

a first level write-back cache coupled to said processor bus ...,

a second level cache coupled to said processor bus; said second level cache comprising:

cache memory including a clear input for invalidating the data in the cache memory; and

a second level cache controller coupled to said processor bus ...

The defendants acknowledge that their eTower 366c, 333cs, 333k, 333c, 300k, 300c, and 266 have the same motherboard design as Compaq's, the Delhi-III. They acknowledge that the Delhi-III motherboard incorporates a chipset that includes a Via VT82C596 from the Via Southbridge family. However, the defendants assert that they have never tested the functionality of Via VT82C596 to determine whether the Southbridge has Distributed Direct Memory Access ("DDMA") functionality that operates correctly. The

defendants further argue that the Via VT82C596 was shipped and received from Via in a disabled mode. Moreover, argues the defendants, they did not receive a device or program that would enable this technology. Thus, no infringement.

While Compaq acknowledges that the defendants' machines do not function according to the elements of the Claim One, it argues that the defendants' machines have the ability to perform the function *i.e.*, generate a Flush Acknowledge Special Cycle. Thus, Compaq's infringement claim is based on the fact that the defendants' machines are capable of performing or executing the function whether the function is or was ever performed.

It is clear that Compaq is alleging infringement based on an apparatus claim. It is also clear that the defendants' arguments against infringement rely upon a holding that Claim One is a means claim. Thus, the arguments do not meet. The Court holds that Claim One is an apparatus claim. Infringement of an apparatus requires the accuser to show that the accused device has the claimed structure and that the structure is capable of functioning in the manner described in the claim. Intel Corp., 946 F.2d at 832.

It is undisputed that the defendants' machines are structurally the same as Compaq's. The structure described in Claim One is the same structure acknowledged by the defendants, in its machines. As acknowledged by the defendants, certain components, although designed with the capacity of performing the function, are either defaulted or stored internally in the Via chip(s) or require a program or rewire to accomplish the function. Thus, the defendants' machines are designed in a manner that they infringe. *See* High Tech Med. Instrumentation, Inc., 49 F.3d at 1556. The defendants' argument that its machines do not function as Compaq's is unavailing. The accused machines do infringe Claim One of the Collins '727 Patent. Summary judgment on behalf of Compaq is, therefore, appropriate.

VI. CONCLUSION

The Court holds that the defendants are literally infringing the asserted Claims of the following Patents: the Wood '107, the VanderKamp '213, the Roberts '279, the Thayer '530, the Kaiser '606, the Miller '604 and '078, the Warner '680 and the Collins '727.

The Court holds that the defendants are not infringing the asserted Claims in the following Patents: the Jirgal '917 and '976, the Ruch '226, and the Maguire-Ferguson '997.

The Court is mindful of the fact that the defendants have asserted defenses that were not addressed in this Memorandum Opinion. To the extent that these defenses raise issues of law to be addressed only by the Court, those defenses will be appropriately addressed at, during, or after a trial on damages along with any remaining issues that must be submitted to a jury. In this regard, it is

Ordered that Compaq and the defendants submit status reports stating their view of the consequences of the Court's Memorandum, an estimate of time for trial on the remaining issues, and proposed trial dates. Additionally, the Court invites any proposed Orders that the parties determine to be appropriate to effect this Memorandum Opinion.

It is so ORDERED.

S.D.Tex.,2002.

Compaq Computer Corp. v. eMachines, Inc.

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