

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

IN RE PAPST LICENSING GMBH & CO.
KG LITIGATION

This Document Relates To:

ALL CASES

Misc. Action No. 07-493 (RMC)
MDL Docket No. 1880

CAMERA MANUFACTURERS' SURREPLY MARKMAN BRIEF

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
ARGUMENT	4
I. THE PREAMBLES ARE CLAIM LIMITATIONS	4
II. THE COURT SHOULD ADOPT THE CAMERA MANUFACTURERS' PROPOSED CONSTRUCTIONS	7
A. “host device”	7
B. “data transmit/receive device”	7
C. “interface device”	8
D. “communication between”	9
E. “first connecting device for interfacing the host device with the interface device”	10
F. “second connecting device for interfacing the interface device with the data transmit/receive device”	10
G. “first command interpreter”	12
H. “second command interpreter”	14
I. “multi-purpose interface”	14
J. “interfacing”	15
K. “wherein the interface device is configured by the processor and memory to include a first command interpreter and a second command interpreter”	15
L. “sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is an input/output device customary in a host device”	15
M. “the driver”	15

N.	<i>“the driver for the input/output [storage] device customary in a host device”</i>	16
O.	<i>“an input/output [storage] device customary in a host device”</i>	17
P.	<i>“specific driver for the multi-purpose interface”</i>	18
Q.	<i>“whereupon the host device communicates with the interface device by means of the driver for the input/output [storage] device customary in a host device”</i>	19
R.	<i>“the digital data”</i>	20
S.	<i>“inquiry” [or “inquiring”]</i>	21
T.	<i>‘399 Patent, Claim 2</i>	21
U.	<i>“a buffer data to be transferred between the data transmit/receive device and the host device” or “data buffer for permitting independence in terms of time of the data transmit/receive device attachable to the second connecting device from the host”</i>	22
V.	<i>“virtual files”</i>	23
W.	<i>“simulating a virtual file system to the host device”</i>	24
X.	<i>“the usual driver for the input/output [storage] device”</i>	25
CONCLUSION.....		25

TABLE OF AUTHORITIES

	<u>Page</u>
<u>CASES</u>	
<i>Ampex Corp. v. Eastman Kodak Co.</i> , 460 F. Supp. 2d 563 (D. Del. 2006), <i>aff'd</i> , 263 Fed. App'x 885 (Fed. Cir. 2008)	20, 21
<i>Bicon, Inc. v. Straumann Co.</i> , 441 F.3d 945 (Fed. Cir. 2006).....	5
<i>C.R. Bard, Inc. v. M3 Systems, Inc.</i> , 157 F.3d 1340 (Fed. Cir. 1998).....	5, 6
<i>Chef America, Inc. v. Lamb-Weston, Inc.</i> , 358 F.3d 1371 (Fed. Cir. 2004).....	24
<i>Computer Docking Station Corp. v. Dell, Inc.</i> , 519 F.3d 1366 (Fed. Cir. 2008).....	2, 12, 13
<i>Curtiss-Wright Flow Control Corp. v. Velan, Inc.</i> , 438 F.3d 1374 (Fed. Cir. 2006).....	24
<i>Cytologix Corp. v. Ventana Medical Sys., Inc.</i> , 424 F.3d 1169 (Fed. Cir. 2005).....	20, 24
<i>Eaton Corp. v. Rockwell Int'l Corp.</i> , 323 F.3d 1332 (Fed. Cir. 2003).....	5, 6
<i>Exigent Tech., Inc. v. Atrana Solutions, Inc.</i> 442 F.3d 1301 (Fed. Cir. 2006).....	3
<i>Ferguson Beauregard/Logic Controls v. Mega Systems, LLC</i> , 350 F.3d 1327 (Fed. Cir. 2003).....	3
<i>Fin Control Sys. Pty, Ltd. v. OAM, Inc.</i> , 265 F.3d 1311 (Fed. Cir. 2001).....	22
<i>Finisar Corp. v. DirecTV Group, Inc.</i> 523 F.3d 1323 (Fed. Cir. 2008).....	16
<i>Halliburton Energy Serv., Inc. v. M-I LLC</i> , 514 F.3d 1244 (Fed. Cir. 2008).....	25
<i>In re Cruciferous Sprout Litigation</i> , 301 F.3d 1343 (Fed. Cir. 2002).....	24

<i>Inpro II Licensing S.A.R.L. v. T-Mobile USA, Inc.</i> , 450 F.3d 1350 (Fed. Cir. 2006).....	1
<i>Intervet America, Inc. v. Kee-Vet Labs., Inc.</i> 887 F.2d 1050 (Fed. Cir. 1989).....	13
<i>Mangosoft v. Oracle Corp.</i> , 525 F.3d 1327 (Fed. Cir. 2008).....	11
<i>Markman v. Westview Instruments, Inc.</i> , 52 F.3d 967 (Fed. Cir. 1995).....	3
<i>Pall Corp. v. Hemasure Inc.</i> , 181 F.3d 1305 (Fed. Cir. 1999).....	3
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	1, 2, 3, 4, 9, 11, 15, 24
<i>Pitney Bowes, Inc. v. Hewlett-Packard, Co.</i> , 182 F.3d 1298 (Fed. Cir. 1999).....	5, 6
<i>Renishaw PLC v. Marposs Societa' Per Azioni</i> , 158 F.3d 1243 (Fed. Cir. 1998).....	1, 11
<i>Rhine v. Casio, Inc.</i> , 183 F.3d 1342 (Fed. Cir. 1999).....	2
<i>SciMed Life Sys. v. Advanced Cardiovascular Sys.</i> , 242 F.3d 1337 (Fed. Cir. 2001).....	9
<i>Solomon Technologies, Inc. v. Int'l Trade Commission</i> , 524 F.3d 1310 (Fed. Cir. 2008).....	2, 12
<i>Southwall Techs., Inc. v. Cardinal IG Co.</i> , 54 F.3d 1570 (Fed. Cir. 1995).....	4
<i>Storage Technology Corp. v. Cisco Systems, Inc.</i> , 329 F.3d 823 (Fed. Cir. 2003).....	13
<i>Vaupel Textilmaschinen KG v. Meccanica Euro Italia S.P.A.</i> , 944 F.2d 8702 (Fed. Cir. 1991).....	5, 6
<i>Vitronics Corp. v. Conceptronic, Inc.</i> , 90 F.3d 1576 (Fed. Cir. 1996).....	2, 4
<i>Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.</i> , 442 F.3d 1322 (Fed. Cir. 2006).....	3

STATUTES AND RULES

35 U.S.C. § 112.....	25
----------------------	----

OTHER AUTHORITIES

American National Standard for Information Systems – Small Computer System Interface – 2 (1994).....	21
LANDIS ON MECHANICS OF CLAIM DRAFTING § 2.4 at 2-11-12	5
Webster’s II New College Dictionary (1995) at 1257	19

INTRODUCTION

Although in its Reply¹ Papst pays lip service to governing claim construction principles, it nevertheless disregards those principles in an effort to broaden the scope of the invention beyond what is actually claimed in the patents-in-suit. Papst would thereby lead the Court to largely ignore the claims, specification and prosecution history of the patents, which the public is entitled to rely upon to ascertain the scope of the patented invention. Papst's disregard of the important "public notice function" that patents and their intrinsic records are required to fulfill is improper. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1319 (Fed. Cir. 2005) (en banc).

First, Papst gives short shrift to the specification and proposes constructions that are divorced from—and at times directly contrary to—the description Mr. Tasler provided of his invention. In so doing, Papst ignores the Federal Circuit's holding that patent claims cannot "enlarge what is patented beyond what the inventor has described as the invention." *Inpro II Licensing S.A.R.L. v. T-Mobile USA, Inc.*, 450 F.3d 1350, 1355 (Fed. Cir. 2006). The failure to adhere to this principle is most evident in Papst's contention that the claimed "*interface device*" does not have to be a stand-alone device. Papst attempts to distinguish *Inpro* on grounds that the claims there purportedly were limited to parallel connections because the patent specification emphasized the importance of such connections to the invention. Papst Reply at 6. The *Inpro* rationale, however, applies with equal force here. The Tasler specification touts the "invention" as providing the "enormous" benefits of a stand-alone "*interface device*" and also identifies that characteristic as key to solving the problems identified in the prior art. *See* CM Br. at 12. The CMs are not "reading into the claims" anything that is not already there. *See, e.g., Renishaw PLC v. Marposs Societa' Per Azioni*, 158 F.3d 1243, 1250-53 (Fed. Cir. 1998) (construing the

¹ Papst's 37-page Reply exceeds by 50% the 25-page limit for reply briefs established by the Local Rules. The Camera Manufacturers ("CMs") nonetheless have limited this Surreply to 25 pages.

term “when” in the context of the other claim language and the specification as “[u]ltimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim.”²

Second, Papst ignores relevant portions of the prosecution history, including the applicant’s clear and unambiguous statements that the “*first command interpreter*” must “lie[] to the host computer as to the real nature of the data transmit/receive device.” Because Tasler cited this “lying” feature in order to overcome the prior art, Papst cannot now recapture a claim scope that was expressly disclaimed in order to obtain allowance of the patent. *See Computer Docking Station Corp. v. Dell, Inc.*, 519 F.3d 1366, 1376-77 (Fed. Cir. 2008); *Solomon Technologies, Inc. v. Int’l Trade Commission*, 524 F.3d 1310, 1313-14 (Fed. Cir. 2008).

Third, Papst improperly relies on extrinsic evidence in an effort to justify its expansive reading of the claims. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996) (“In most situations, an analysis of the intrinsic evidence alone will resolve any ambiguity in a disputed claim term. In such circumstances, it is improper to rely on extrinsic evidence.”). The declaration submitted by Papst never once cites to the intrinsic evidence, does not provide any objective extrinsic evidence, and offers only conclusory opinions on some disputed claim terms. That is exactly the type of biased, after-the-fact expert testimony the Federal Circuit has stated is not useful to a court. *Phillips*, 415 F.3d at 1318. In contrast, the CMs have relied on

² Papst is similarly wrong in contending that the proposed constructions advanced by the CMs are inconsistent with their invalidity contentions. Papst Reply at 4. For the reasons explained at the July 31 status conference, it is not at all “surprising” that the CMs contend in their invalidity contentions that the Casio QV-10 camera has an “*interface device*” that is not a stand-alone device. That is because the CMs properly based their invalidity contentions in part on *Papst’s proposed constructions*. Thus, if one were to read “*interface device*” as broadly as Papst suggests, in an effort to cover the accused digital cameras, such a construction would mean that the claims would be anticipated by a number of prior art cameras, including the Casio QV-10. That is yet another reason why Papst’s proposed construction of “*interface device*” must be rejected. *See, e.g., Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999) (citing the well-established maxim that claims should be construed, where possible, to preserve their validity).

technical dictionary definitions only when doing so may be helpful to the Court's understanding of a disputed claim term, such as when the intrinsic record suggests that a term should be understood as it generally would be by one of ordinary skill in the art. *Phillips*, 415 F.3d at 1318. Such dictionary definitions provide a more reliable basis for determining how one of ordinary skill in the art would understand disputed terms. *Phillips*, 415 F.3d at 1322 ("A dictionary definition has the value of being an unbiased source 'accessible to the public in advance of litigation.'").

Finally, Papst continues to err by looking to the accused products to guide its proposed constructions. Contrary to Papst's contention, the CMs did not "misstate the law" on this point. Although the CMs' Opening Brief incorrectly and inadvertently cited *Exigent Tech., Inc. v. Atrana Solutions, Inc.* 442 F.3d 1301 (Fed. Cir. 2006)—and we hereby withdraw the parenthetical statement accompanying that citation—the law nonetheless is well-established that courts should *not* consider the accused devices in arriving at constructions of disputed terms. *See, e.g., Wilson Sporting Goods Co. v. Hillerich & Bradsby Co.*, 442 F.3d 1322, 1331 (Fed. Cir. 2006) ("the rule forbids a court from tailoring a claim construction to fit the dimensions of the accused product"); *Pall Corp. v. Hemasure Inc.*, 181 F.3d 1305, 1308 (Fed. Cir. 1999) ("the construction of the claim is independent of the device charged with infringement..."); *Ferguson Beauregard/Logic Controls v. Mega Sys., LLC*, 350 F.3d 1327, 1340 (Fed. Cir. 2003) (vacating finding of non-infringement where district court's claim construction was "influenced by the structure and function of the alleged infringing device"). Although courts may consider accused products for the limited purpose of determining which claim terms require construction, Papst has gone far beyond that in its *Markman* briefs. *See, e.g.,* Papst Reply at 4 (arguing that digital cameras have an "interface device"); Papst Br. at 7 (claiming that digital cameras operate "in the

same way as disclosed and claimed in the patents-in-suit”). Despite the parties’ disagreement on how certain claim terms should be construed, the parties generally agree on which terms need to be construed. Thus, there is no need to look to the accused products during claim construction.

Papst’s repeated departures from settled claim construction principles have a common purpose and effect—to stretch the asserted claims beyond recognition from the intrinsic record, in an effort to read the patents-in-suit on digital cameras. By seeking to “change the meaning of claims in derogation of the ‘indisputable public records consisting of the claims, the specification and the prosecution history,’” *Phillips*, 415 F.3d at 1319 (quoting *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1578 (Fed. Cir. 1995)), Papst violates a fundamental policy that underlies U.S. patent law. As a matter of right, the CMs and other companies should be able to “ascertain the scope of the patentee’s claimed invention,” and thereby to avoid infringement, based on a straightforward “review [of] the public record” of the patents. *Vitronics*, 90 F.3d at 1583. “Allowing the public record to be altered or changed by extrinsic evidence,” as Papst would like to do, “would make this right meaningless.” *Id.* Accordingly, and for the specific reasons set forth below, the Court should adopt the CMs’ proposed constructions.

ARGUMENT

I. THE PREAMBLES ARE CLAIM LIMITATIONS

Papst errs in arguing that the preambles recited in the ‘399 and ‘449 patent claims are merely introductions to be given no effect. Papst Reply at 9. Papst’s discussion of generally applicable principles of claim drafting cannot disguise the fact that the preambles at issue here meet each of the four applicable “guideposts”³ for identifying preamble language that acts as a claim limitation, as set out in the very treatise relied on and cited by Papst in its Reply:

- *Dependence on a phrase in dispute to provide an antecedent basis indicates reliance on*

³ The fifth guidepost relates to a special kind of claim, a *Jepson* claim, which does not apply here. *Id.*

the preamble: The preambles provide the only antecedent basis for “the interface device,” “the host device,” “the multipurpose interface,” “the data transmit/receive device,” and other claim limitations. *See* CM Br. at 7-8.

- *The preamble is needed to understand elements in the claim body:* The claim body makes no sense without the structural limitations in the preambles since the interface device must receive signals from the host and send signals to the data transmit/receive device and there is otherwise no mechanism for doing so recited in the claims. *See id.* at 8.
- *The specification emphasizes additional elements as important:* The specification repeatedly emphasizes the preamble language and relies on this language to distinguish background prior art. *See id.*
- *Clear reliance on the preamble to avoid prior art during application prosecution:* When prosecuting the ‘399 patent, the applicant added the phrase, “the data transmit/receive device arranged for providing analog data,” to the preamble of the independent claims and argued that this distinguished over prior art that “does not disclose that the data transmit/ receive device is arranged for providing analog data.” *See id.* at 8-9.

Papst Reply Ex. D, LANDIS ON MECHANICS OF CLAIM DRAFTING § 2.4 at 2-11-12. Meeting just one of these tests is sufficient to construe the preamble as a claim limitation. *Id.* at 2-8-11 (summarizing cases finding preambles limiting). Moreover, the treatise cited by Papst advises patent practitioners that they should “[a]ssume every word you write in a claim is critical” and may “restrict the scope of [your client’s] invention.” *Id.* at 2-13. Where, as here, the applicant chose to both include substantive language in the claim preamble and add substantive language during patent prosecution, that language is properly held to limit the claims.

Contrary to Papst’s claim, there is nothing unusual about construing a preamble to include claim limitations. *See id.* at 2-8-11; *see also Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952-53 (Fed. Cir. 2006); *Eaton Corp. v. Rockwell Int’l Corp.*, 323 F.3d 1332, 1337-42 (Fed. Cir. 2003); *Pitney Bowes, Inc. v. Hewlett-Packard, Co.*, 182 F.3d 1298, 1305-06 (Fed. Cir. 1999). Moreover, Papst’s reliance on *Vaupel Textilmaschinen KG v. Meccanica Euro Italia S.P.A.*, 944 F.2d 870, 872 (Fed. Cir. 1991) and *C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1348-49 (Fed. Cir. 1998) is misplaced. In *Eaton*, the patentee made exactly the same “reference point” argument that Papst makes here and relied on exactly the same authorities. But the *Eaton* Court

squarely rejected this argument. In particular, the Federal Circuit made clear that *Vaupel* cannot be relied on to show that a claim preamble is not limiting: “the analysis in *Vaupel* has *nothing to do with the issue of whether the preamble was necessary to define a complete invention*. Rather, the issue was the proper meaning of the term ‘breast beam.’” *Eaton*, 323 F.3d at 1341 (emphasis added). The district court had concluded that this term did not refer to a specific loom part, but rather the general area at the front of the loom. *Id.* at 1340. Accordingly, while “the term ‘breast beam’ was not a *structural* limitation of the claims, *it was nevertheless a limitation*.” *Id.* at 1341 (second emphasis added). Papst misstates the holding of this case in suggesting otherwise. See Papst Reply at 11. *Eaton* also distinguished *C.R. Bard*, as the preamble there used the phrase “for use with” and nothing in the body of the claim actually required such a use. See *id.* at 1341-42.

In contrast, here the body of the claims specifically requires that the interface device be configured to receive signals from the host device and send signals to the data transmit/receive device. See, e.g., ‘399, at col. 12:42-13:13 (claim 1). These are not reference points that are external to the invention. Rather, they describe structural limitations required in order for the interface device to function according to the claims.

In the end, what Papst asks the Court to do is to rewrite the preambles as if they just read “an interface device comprising....” That is not how they were written, however. Because the preambles recite structural limitations that are “necessary to give life, meaning, and vitality” to the claims, see *Pitney Bowes*, 182 F.3d at 1305, they should be construed as claim limitations.

II. THE COURT SHOULD ADOPT THE CAMERA MANUFACTURERS' PROPOSED CONSTRUCTIONS⁴

A. “*host device*”

A “*host device*” is “a general purpose computer that connects to and controls the operation of peripherals.” Papst contends that there is no support for the latter part of this construction in the specification. Papst Reply at 15. Papst is wrong. The specification describes that “practically all host devices” have drivers that control the operation of various peripherals (such as hard disks, graphics devices, etc.). See, e.g., ‘399, col. 4:27-39. The CMs’ proposed construction is also consistent with the remainder of the claim language which expressly recites the control of peripherals by means of “the driver for the input/output device customary in a host device.” See *id.* at col. 13:5-8. Papst’s citation to the CMs’ invalidity contentions is a red herring for the reasons set forth in footnote 2 above and is also wrong; those contentions *do* identify “a general purpose computer that connects to and controls the operation of peripherals,” i.e. “a PC that utilizes drivers for a variety of input/output devices.”

B. “*data transmit/receive device*”

For the reasons set forth in Section I, *supra*, Papst is wrong in arguing that the “*data transmit/receive device*” is not a claim limitation. Papst also is wrong in arguing that the patentee provided an “express definition” of “data transmit/receive” device in the specification. Papst Reply at 13. The specification merely refers to “[a] data transmit/receive device from which data is to be acquired or with which two-way communication is to take place.” ‘399, col. 1:12-14. This generally describes alternative pathways for communication, but does not change the fact that a device *from which* data is to be acquired (which does nothing else) is a “data transmit” device, *not* a “data transmit/receive device.”

⁴ For clarity and for the Court’s convenience, the CMs have followed the same order and numbering of claim terms here as in their Opening Brief. In addition, the CMs have attached hereto as Exhibit R a chart that sets forth the CMs’ and Papst’s proposed construction for each disputed claim term or phrase.

The language relied upon by Papst actually supports the CMs' position. It shows that the user is able to attach the data transmit/receive device and do two things: (1) perform the function of a data measurement/acquisition device, and (2) actively communicate ("two-way") with the host device. This reading is confirmed by another part of the specification (ignored by Papst) that addresses the "interchange" of data, rather than just one-way data flow. *See, e.g.*, '399, col. 8:43-46; '449, col. 7:43-46.

Papst's citation to the prosecution history is equally flawed. Contrary to Papst's assertion (Papst Reply at 14), the amendment it cites was added to insert the limitation of "analog data" and the prior art was distinguished on that ground. *See* CM Br. Ex. C, '399 File History, Mar. 18, 2002 Response, at 5, 7-9. Thus, the phrase "arranged for providing analog data" was added to the claim to specify the *kind* of data transmitted by the data transmit/receive device to the interface device in an attempt to distinguish the invention from the prior art. The added limitation in no way suggests that the data transmit/receive device does not also necessarily *receive* data from the interface device.

C. "interface device"

Papst cannot dispute that the interface device that is described in the specification of the '399 and '449 patents is a stand-alone device; accordingly, Papst is forced to argue that the claim term "*interface device*" should not be read the same way in the claims as it is used in the specification. *See* Papst Reply at 10. In particular, the claims clearly call for and distinguish between three different devices; an "interface device," a "host device" and a "data transmit/receive device," as does the specification. *Compare, e.g.*, '399, col. 12:42-13:13 (claim 1) *and id.* at col. 1:1-14, 3:22-5:32, 5:47-63, Figs. 1-2 and accompanying text. In addition, the specification touts the "enormous advantage" of the "present invention," including the fact that it is a stand-alone device that can readily be connected to and disconnected from a plurality of

dissimilar device types and thus “provides a universal solution.” *Id.* at col. 8:23-42, 12:38-41. Affirmative statements in the patent specification describing an element of the “present invention” are precisely the kind of statements that the Federal Circuit has held should be used to inform the construction of the corresponding claim term. *See Phillips*, 415 F.3d at 1323 (citing *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337, 1341-44 (Fed. Cir. 2001) (where specification described “present invention” as annular, rather than dual side-by-side structure, claims were limited to an annular structure)); *see also Verizon*, 503 F.3d at 1308.

The claim language “*regardless of the type of the data transmit/receive device attached to the second connecting device*” further supports this stand-alone construction. It makes clear that the claims contemplate that different types of data transmit/receive devices can be attached to the interface device; “*regardless*” the interface device will respond to the host in the same way. *See, e.g.*, ‘399, col. 12:64-13:8 (claim 1). Papst’s argument that the term “*attached*” may refer to both permanent and removable connections misses the point. Papst Reply at 10. The very fact that more than one type of data transmit/receive device can be attached means that *in the context of the claims* the term “*attached*” should be construed to refer to a removable physical connection. Otherwise, it would not be possible to “attach” more than one type of data transmit/receive device. Although Papst completely ignores the issue in its Reply, this reading is also supported by the prosecution history, where Tasler amended the claims from “*the type of a device*” to “*a type of a device*” and argued that “the data transmit/receive device is *to be connected to* the interface.” *See* CM Br. at 13. The Court thus should hold that the claimed “interface device” of the “present invention” is a stand-alone device that a user can readily physically connect to and disconnect from the host and data transmit/receive devices.

D. “communication between”

Papst disputes that the phrase “*communication between*” requires two-way

communication, asserting that a television broadcast is a communication between a transmitter and a television. Papst Reply at 15. Even assuming what Papst makes no attempt to establish—that its analogy involves two devices in “communication”—this argument ignores other claim language using the words “to” and “from” when indicating one-way “communication.” Papst also ignores that the specification distinguishes data acquisition from “two-way communication” (‘399, col. 1:9-14; ‘449, col. 1:13-17), explains that data requests are sent from the host device before data is sent to the host device (‘399, col. 6:55-67), and shows every embodiment in the figures with bidirectional data flow arrows between the host device and the data transmit/receive device. Papst is silent as to these distinctions supporting the CMs’ proposed construction. The claims here require two-way communication, and Papst’s unsupported analogy cannot overcome the intrinsic evidence found in the specification.

Papst does not dispute the portion of the CMs’ construction that requires the communication to be active.

E. “*first connecting device for interfacing the host device with the interface device*”

In its Reply, Papst does not distinguish between the first and second “*connecting devices*” recited in the claims. The CMs have addressed both terms in Section II.F below.

F. “*second connecting device for interfacing the interface device with the data transmit/receive device*”

Papst does not dispute the CMs’ proposed constructions for the first and second connecting device limitations other than its attempt to construe the term “*connecting device*” so as to exclude any actual physical “connector.” Papst Reply at 15-18. Such a construction defies common sense, and is inconsistent with the claim language, the specification and the ordinary meaning of the term. First, Papst commits the fundamental error of reading the word “connecting” completely out of the claims. *E.g., Mangosoft v. Oracle Corp.*, 525 F.3d 1327,

1330-31 (Fed. Cir. 2008) (proposed construction that “ascribes no meaning” to term used in the claims was incorrect). Under Papst’s proposed construction, a “*first connecting device for interfacing*” would have the same meaning as “a first device for interfacing.” See Papst Reply at 16-17.

Second, Papst asks the Court to ignore the settled meaning of the term “connector” in the field of computer science because the claims instead recite “connecting.” Papst Reply at 7-8, 16-17. However, the term “connecting device” in the claims is described in the specification as including a “connector,” see, e.g., ‘399 patent, col. 9:29-33, 12:50-59, and the relevant dictionaries confirm that a “connector” is commonly understood to mean “a physical plug or socket.”⁵ CM Br. Exs. D-F.

The specification leaves no doubt that a physical connector is an essential part of the connecting devices: “In the preferred embodiment of the interface device 10 shown in FIG. 2, the first connecting device 12 of FIG. 1 contains the following components: a SCSI interface 1220 and a 50-pin SCSI connector 1240 for attachment to an SCSI interface” ‘399 patent, col. 9:30-48 (also describing a 25-pin D-shell connector 1280). The second connecting device likewise “comprises 8 BNC inputs.” See *id.* at col. 9:49-53. Associated circuitry for the first and second connecting devices is also described. *Id.* at col. 9:30-59. Papst’s suggestion that the claims refer *solely* to the associated circuitry and *not* to the actual physical connectors of the *connecting* devices is contrary to the specification and common sense. Without the physical connectors, no connection would be achieved, and the associated circuitry would have no utility.

Thus, the first and second connecting devices recited in the claims must include a

⁵ Indiscriminate reliance on dictionaries can of course lead to absurd results. See, e.g., *Renishaw*, 158 F.3d at 1250. This is exactly why the claims—and any dictionary definitions—must be read in light of the intrinsic evidence. See *Phillips*, 415 F.3d at 1324.

physical plug or socket, although they may also include other associated circuitry.

G. “*first command interpreter*”

Papst is wrong in dismissing the CMs’ proposed construction of “*first command interpreter*” based on a simplistic assertion “that is not what the claim says.” Papst Reply at 18. As the CMs have explained, the requirement that the first command interpreter “lie” to the host computer comes from the patentees’ express, clear, and unambiguous disclaimer applicable to the “*first command interpreter*” limitation during prosecution of the ‘399 patent.

In distinguishing the claimed invention from U.S. Patent No. 5,499,378 to McNeill, Jr. et al. (“McNeill”), Tasler’s attorneys argued:

In addition, this reference [i.e., McNeill] does not include a *first command interpreter* that, when asked by the host device as to the type of device connected to the interface, *lies to the host computer as to the real nature of the data transmit/receive device*. In McNeill, Jr. et al., the initiator asks for a hard disk and the target states that there is a hard disk. *In other words, the target does not lie as to the true type of the data transmit/receive device*. The conversion done in McNeill; Jr. et al. is to transfer SCSI protocol commands into commands understandable for the magnetic disk.

CM Br. Ex. C, ‘399 File History, Mar. 18, 2002 Response at 6 (emphasis added). The applicant’s statements that the prior art McNeill patent *does not* lie as to the real nature of the data transmit/receive device while the claimed invention does lie are precisely the types of remarks that have been found to create a disclaimer to be applied in construing claims. *See, e.g., Computer Docking*, 519 F.3d at 1376-77 (holding that “portable computer” excluded laptops based on remarks during prosecution); *Solomon Technologies*, 524 F.3d at 1313-14 (holding that no element could be between the recited motor and transmission based on attorney argument distinguishing prior art having shafts and bearings between them).

Papst argues that controlling law requires giving effect to the claims of the patent as finally worded, not to the remarks of an attorney. *See* Papst Reply at 20. In the cases Papst cites,

however, the courts ignored attorney remarks because they were “untrue” or “inaccurate.” See *Intervet Am., Inc. v. Kee-Vet Labs., Inc.* 887 F.2d 1050, 1054 (Fed. Cir. 1989); *Storage Tech. Corp. v. Cisco Sys., Inc.*, 329 F.3d 823, 832 (Fed. Cir. 2003). Here, in contrast, the remarks in question not only were true and accurate but also were unequivocal. Controlling law requires that the claims be construed in the context of this prosecution history. See *Computer Docking*, 519 F.3d at 1378-79.

Papst also asserts that the type of the data transmit/receive device cannot factor into the response to the “inquiry” sent by the host device because the response is sent “*regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device.*” See Papst Reply at 19. However, if the response to the host device’s “inquiry” were based only on what the interface device is, then there would be no point in including the “*regardless*” clause in the claim, since the type of data transmit/receive device attached to the interface device cannot change the interface device itself. To be able to lie about the real nature of the data transmit/receive device, the interface device *must* know what the data transmit/receive device is. Papst’s proposed construction would effectively read the “*regardless*” clause out of the claim, yet this clause was important enough to include *in the title* of the patents.⁶

Finally, Papst asserts that the attempt to limit the “*first command interpreter*” to a “software program or module” is erroneous because the claim does not recite the terms “software,” “program,” or “module.” See Papst Reply at 20. Papst’s position is curious because

⁶ In the clause “*signals to the host device that it is an input/output device customary in a host device,*” “*it*” is the “*data transmit/receive device,*” **not** the “*interface device,*” as Papst contends. This is confirmed by the unambiguous statement by the Applicant during prosecution that the response to the host device’s inquiry is to lie about the nature of **the data transmit/receive device**, not the interface device. It is also confirmed by the specification itself. See ‘399, col. 6:19-22 (“Regardless of which data transmit/receive device at the output line 16 is attached to the second connecting device, the digital signal processor 13 informs the host device that it is communicating with a hard disk.”).

Papst itself describes a “*first command interpreter*” as groups of steps carried out by the processor in response to commands (e.g., computer instructions) from the host computer. See Papst Br. at 20. Not only are a group of steps carried out by a processor consistent with the interpretation of “*first command interpreter*” as a “software program or module,” but “group” and “steps” are not recited in the claim and thus conflict with Papst’s erroneous theory of claim construction.

H. “*second command interpreter*”

The second command interpreter of the interface device is “configured to interpret a data request command from the host device to the type of input/output device signaled by the first command interpreter as a data transfer command for initiating the transfer of the digital data to the host device.” See, e.g., ‘399, col. 13:9-13. As properly construed, this means that a data request command (such as “read file xy”) is translated by the second command interpreter in the interface device into a data transfer command understandable by whatever data transmit/receive device is attached to the host device. See, e.g., ‘399, col. 6:52-67. Papst’s contention that the data transmit/receive device does not need to understand this data transfer command, see Papst Reply at 21-22, flies in the face of the claim language and the specification. The very point of interpreting or translating the command is so that the data transmit/receive device can understand it and thereby initiate the transfer of the data “via the second connecting device to the first connecting device and via the line 11 to the host device.” ‘399, col. 6:59-67.

I. “*multi-purpose interface*”

Papst misreads the CMs’ proposed construction of this term as requiring that *each* device has “more than one purpose.” See Papst Reply at 27-28. Whether each device is in fact used for more than one purpose is beside the point. What is important is that to be “multi-purpose,” the interface must be capable of connecting to at least two different devices that serve different

purposes. The patents-in-suit identify two types of interfaces as possible implementations of the “*multi-purpose interface*,” a SCSI interface and an enhanced printer interface. *See, e.g.*, ‘399, col. 4:40-44. SCSI and enhanced printer interfaces are designed to interface to different types of devices that collectively have multiple purposes, such as scanners, printers and disk drives. Thus, in accordance with the use of the term “multi-purpose” for “interface” and the implementations for such an interface discussed in the specification, one of ordinary skill would understand that the “*multi-purpose interface*” must be connectable to different types of devices having different purposes.

J. “*interfacing*”

Papst does not take issue with the CMs’ proposed construction of this term, other than suggesting that it should be construed together with the “connecting device” language of the claims. The CMs contend that it should be construed separately and that the Court should adopt the CMs’ proposed construction for the reasons set forth in Section III.J of their Opening Brief.

K. “*wherein the interface device is configured by the processor and memory to include a first command interpreter and a second command interpreter*”

In its Reply, Papst does not respond to the CMs’ argument supporting its proposed construction of this phrase. Accordingly, the CMs proposed construction should be adopted.

L. “*sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is an input/output device customary in a host device*”

See Section II.G, *supra*.

M. “*the driver*”

Papst objects to the CMs’ use of dictionaries to assist in the interpretation of the term “driver” primarily on the basis that the CMs did not identify why the selected definitions are “relevant.” *See* Papst Reply at 25-26. It is well established law that the proper definition is the one that is most consistent with the intrinsic evidence. *See Phillips*, 415 F.3d at 1323. Thus, of the four definitions listed, the most relevant one is clearly the fourth one that refers to both a

“printer driver” and a “disk driver,” which are precisely the types of drivers discussed in the ‘399 patent.

Although Papst argues (without explanation, *see* Papst Reply at 27) that the Locke Declaration is more relevant to understanding the meaning of “*driver*” than the definitions cited by the CMs, the quoted excerpt from Locke’s Declaration is actually completely consistent with and supports the CMs’ interpretation. Not only does the excerpt describe “*driver*” as software, but it also highlights the ability of a “*driver*” to enable a host device to control the operation of an input/output device, such as a hard disk drive, through execution of commands like reading or writing a file, performing a seek function, or loading a register. *See id.* Accordingly, in the context relevant to the patents-in-suit, “*the driver*” must be software that enables the host device to communicate with and control an input/output device.

N. “*the driver for the input/output [storage] device customary in a host device*”

Papst’s only dispute with the CMs’ proposed construction is its argument that the phrase “customary in a host device” modifies “input/output device,” not “driver.”⁷ Papst Reply at 24-25. But Papst’s reliance on *Anhydrides* for the argument that a term modifies the last antecedent is misplaced. First, *Anhydrides* relates to statutory construction, not claim construction. Second, the Federal Circuit has stated that the rules of grammar are not coterminous with the interpretation of a patent, which requires an analysis of the understanding of a person of ordinary skill. *Finisar Corp. v. DirecTV Group, Inc.* 523 F.3d 1323, 1336 (Fed. Cir. 2008). Third, unlike here, the last antecedent in *Anhydrides* was not part of a prepositional phrase. Fourth, the cases cited by Papst recognize that where the patentee provides a contrary intention that meaning governs over any rules of grammar. Here, the patent makes clear that the phrase “customary in a

⁷ Papst does not dispute the CMs’ proposed construction of this limitation if the Court finds the phrase “customary in a host device” modifies “driver.”

host device” modifies “drivers,” not the prepositional phrase “for input/output devices”:

Drivers for input/output devices customary in a host device which are found in practically all host devices are, for example, drivers for hard disks, for graphics devices or for printer devices.

‘399, col. 4:27-30. While the above sentence recites *drivers* for hard disks, graphics devices and printers that are customary in a host device, not all of the identified *devices*, such as printers, are customary “in” a computer. Accordingly, the patentee made it clear that the phrase “customary in a host device” modifies “drivers” and not “input/output devices.”⁸

Moreover, other claims in the asserted patents confirm that “customary in a host device” modifies “driver.” Indeed, Papst admits as much when it argues that the claim term “usual driver” is not indefinite in claim 14 of the ‘399 patent and claim 18 of the ‘449 patent. Without any antecedent basis for the phrase “the usual driver,” Papst argues that “the usual driver for the input/output device” refers to the “drivers for input/output devices customary in a host device.” Papst Reply at 36-37. If the claims are not indefinite, then just as “usual” modifies “driver,” “customary in a host device” must also modify “driver.”

O. “an input/output [storage] device customary in a host device”

Papst’s only dispute with the CMs’ construction of this clause is whether the term “in” means “within,” Papst Reply at 29-30, and once again, Papst is simply attempting to erase a term from the claim language.

First, whether external SCSI devices were well known is irrelevant because the claim language “input/output device customary in a host device” does not refer to an input/output device that is actually attached to the host device. Rather, this claim language refers to an input/output device that provides the basis for the type of commands used by the host device,

⁸ Although Papst’s proposed construction is inaccurate for the reasons explained in the CMs’ Opening Brief, Papst’s proposed construction concedes that “customary in a host device” modifies “driver” by defining the term to mean, in part, the “driver that is normally used by the computer.”

even though such an input/output device is not actually attached to the host device.

Second, contrary to Papst's argument, the asserted patents do not refer to printers as being "customary in a host device," but refer to *drivers* for printers as being "customary in a host device." '399, col. 4:27-30.

P. "specific driver for the multi-purpose interface"

Papst contends the CMs incorrectly argued that "*specific driver*" means the driver is developed for a particular multi-purpose interface as opposed to a general driver or one customary in the host device and that it must be a complete set of software routines that has overall functionality of controlling a device. See Papst Reply at 28-29. In an effort to support its position, Papst points to an excerpt from the specification, which states that BIOS routines may be used in parallel with the specific driver software for the multi-purpose interface. '399, col. 4:48-59. Nothing in this excerpt contradicts the CM's proposed construction. Indeed, this excerpt makes clear that there is a distinction between the "specific" driver and general BIOS routines in that these two things may be used in parallel, but are not the same thing. In addition, while the specific driver may be integrated in the BIOS system, that does not make it a "customary" driver as defined in the patents. See '399, col. 11:9-19 (distinguishing "customary" drivers and specific interface drivers such as ASPI driver "normally included by the manufacturer of the multi-purpose interface"). Moreover, the fact that a specific driver may work in parallel with other BIOS routines says nothing about whether the specific driver has to be a complete set of software routines.

In another relevant portion, the specification states that:

As described above, communication between the host device and the multipurpose interface can take place *not only via drivers for input/output device customary in a host device* which reside in the BIOS system of the host device *but also via specific interface drivers* which, in the case of SCSI interfaces, are known as multi-purpose interface ASPI (advanced SCSI programming interface)

drivers. *This ASPI driver*, which can also be referred to as an ASPI manager, is *specific to a special SCSI host adapter*, i.e. to a special multi-purpose interface, and is normally included by the manufacturer of the multi-purpose interface. ‘399, col. 11:9-19 (emphasis added).

The emphasized portions clearly establish the contrast between drivers for I/O devices customary in a host device and “*specific*” interface drivers as well as that such “*specific drivers*” are specific to a particular multi-purpose interface. This portion of the specification also confirms that the driver software in the BIOS (i.e., the drivers for I/O devices customary in a host device) is distinct from “*specific drivers*” for a particular multi-purpose interface.

Finally, Section II.M, *infra*, on “*the driver*” also supports the conclusion that the “*specific driver*” must be a complete set of software routines with a functionality of controlling a device.

Q. “*whereupon the host device communicates with the interface device by means of the driver for the input/output [storage] device customary in a host device*”

There is no need to construe this claim limitation as the parties have proposed constructions for its constituent terms. Nonetheless, in asserting that the term “*whereupon*” must be construed to require the host device to “automatically” use a software driver to communicate with the interface device, Papst’s argument is flawed. Papst Reply at 23-24. First, Papst does not cite any intrinsic evidence to support reading the word “automatically” into this limitation. Second, the ordinary meaning of the term “*whereupon*” is not “automatically;” “*whereupon*” means “on which” or “in close consequence of which.” Ex. S, Webster’s II New College Dictionary (1995) at 1257. The example provided in the dictionary is apropos: “The judge entered the courtroom, *whereupon* we stood up.” *Id.* Finally, Papst’s attempt to insert the word “automatically” is also improper because it creates ambiguity rather than clarity (i.e., what does it mean for a host device to “automatically” use a driver?).

R. “the digital data”

Papst has admitted more than once that “‘the digital data’ refers to the data that was digitized in the analog-to-digital converter of the ‘second connecting device’” Ex. T, Papst’s Answer to Casio’s Interrogatory No. 7 at 13; *see also* Papst Br. at 21. However, contrary to its prior admissions, Papst insists that the term “the digital data” should be construed as “the data as it is output by the analog to digital converter, and/or the data as it is output by the analog to digital converter after it has undergone additional processing, such as digital signal processing and/or data compression.” *Id.* (emphasis added). In other words, Papst admits the term refers to ‘X’, but then urges the Court to hold it means ‘X’ and/or ‘Y’.

Papst’s argument that the CMs’ construction of “the digital data” would render claims 4 and 5 of the ‘449 patent meaningless is a red herring. Papst Reply at 22. *None* of the ‘449 patent claims (including claims 4 and 5) recite the “the digital data” limitation. *See* ‘449, cols. 11:45—14:32. Only the ‘399 patent claims recite the “the digital data” limitation.⁹ *See* ‘399, cols. 12:41—14:65.

Papst attempts to distinguish *Ampex Corp. v. Eastman Kodak Co.*, 460 F. Supp. 2d 563 (D. Del. 2006), *aff’d*, 263 Fed. App’x 885 (Fed. Cir. 2008). on the basis that none of the dependent claims in that case “expressly require the ‘the digital data’ to be subject to further processing.” *See* Papst Reply at 22; *Ampex*, 263 Fed. App’x 885 is attached hereto as Ex. U. However, that is exactly the situation in the present case — none of the dependent claims of the ‘399 patent expressly say one way or the other whether the “the digital data” is subject to further processing.

⁹ Papst cites *Cytologix Corp. v. Ventana Medical Sys., Inc.*, 424 F.3d 1169, 1173 (Fed. Cir. 2005) in support of its proposition that the claim term “the digital data” should be construed to mean data different from the “digital data” first referenced in each of the ‘399 patent’s independent claims. *Cytologix* is inapposite because it involved an independent claim and its related dependent claim both within the same patent and both reciting the same limitation. *Id.* Here, the *same* claim (claim 1 of the ‘399 patent) recites “the digital data” referring back to the earlier limitation “digital data” for its one and only antecedent basis.

See ‘399, cols. 12:41—14:65. If they did, the resulting processed data would be different from “the digital data.” See *Ampex*, 460 F. Supp. 2d at 566. Accordingly, the term “the digital data” should properly be construed as the same digital data output from the A/D converter, unmodified by additional processing.

S. “inquiry” [or “inquiring”]

Papst concedes that the patents’ reference to the INQUIRY command (in all capital letters) is directed to the SCSI inquiry command. Papst Reply at 21. Although Papst argues that the claims’ use of the term “inquiry” in lower case letters does not refer to the SCSI inquiry command, Papst ignores that the patentee acted as his own lexicographer by explicitly defining “inquiry” in lower case letters to mean the SCSI inquiry command:

When the host device system with which the interface device according to the present invention is connected is booted and a data transmit/receive device is also attached to the interface device 10, usual BIOS routines or multi-purpose interface programs issue an *instruction, known by those skilled in the art as the INQUIRY instruction*, to the input/output interfaces in the host device. The digital signal processor 13 receives *this inquiry instruction* via the first connecting device and generates a signal which is sent to the host device (not shown) again via the first connecting device 12 and the host line 11. This signal indicates to the host device that, for example, a hard disk drive is attached at the interface to which *the INQUIRY instruction* was sent.

‘399, col. 6:3-16 (emphasis added, capitalization in original).

Moreover, Papst has not identified any inquiry command that is known in the art other than the SCSI inquiry command. Although it argues that the “Test Unit Ready” command is an “inquiry” command, Papst provides no support for that argument. In reality, the “Test Unit Ready” command is *not* an inquiry command, but is a separate and distinct command altogether. See Ex. V, *American National Standard for Information Systems – Small Computer System Interface – 2* at §§ 8.2, 8.2.5 and 8.2.16 (1994).

T. ‘399 Patent, Claim 2

Papst still has not identified any reason why the language in claim 2 of the ‘399 patent needs to be construed. Claim 2 consists almost entirely of terms already being construed in

the context of claim 1, and there is a heavy presumption that if the same term is used in multiple claims, it has the same meaning in each of those claims. *Fin Control Sys. Pty, Ltd. v. OAM, Inc.*, 265 F.3d 1311, 1318 (Fed. Cir. 2001). Papst has said nothing to rebut that presumption. Moreover, even if the Court were inclined to construe claim 2, it should not accept Papst's proposed "construction," which is nothing more than a lengthy re-write of the entirety of the claim. Contrary to Papst's suggestion, its proposed construction does not *define* the terms "hard disk driver" and "signal," but instead simply repeats them in a proposed "construction" that is much longer and more complex than claim 2 itself. Papst's proposed construction also is infected by the same misunderstanding of the term "customary" discussed above in Section II.N (demonstrating that "customary" modifies "drivers" and not "input/output devices").

U. *"a buffer data to be transferred between the data transmit/receive device and the host device" or "data buffer for permitting independence in terms of time of the data transmit/receive device attachable to the second connecting device from the host"*

Papst contends that a "buffer" should be construed broadly to include "a device . . . used to compensate for a difference *in the [] time of occurrence of events.*" See Papst's Reply at 33-34. Papst's argument should be recognized for what it is: an attempt to say that even semi-permanent memory (in which the "event" of initial data storage can be days, weeks, or months separated from the "event" of transferring the data to another device) can somehow be a "buffer." The dictionary Papst cites does not support such an expansive definition of "buffer," and Papst fails to explain how the intrinsic evidence supports a construction that could encompass *any* memory—indeed, any storage device."¹⁰

Papst contends that "[b]ecause claim 3 further defines the memory, is not [sic] the same

¹⁰ The dictionary cited by Papst expressly states that a "buffer" is used to store data "temporarily." But under Papst's proposed construction, a "buffer" could be used for semi-permanent storage as well. See Papst's Reply at 33-34; *see also* Appendix to Papst's Brief at 3 and 9-10 (terms including "buffer").

scope as claim 1, and there is no ‘violation’ of the doctrine of claim differentiation.” See Papst’s Reply at 33. But, Papst conspicuously fails to explain *how* its construction of the term “buffer” of claim 3 further defines [i.e., limits] the term “memory” of claim 1.

Papst relies on a statement in the ‘399 patent that “a buffer can be implemented in the memory means 14 to permit independence in terms of time” *Id.* at 34; ‘399, col. 9:8-12. The next sentence, however, clarifies that “[t]his [use of a buffer] guarantees error-free operation of the interface device 10 even for time-critical applications” ‘399, col. 9:12-14. The specification clearly is discussing an ongoing process — not discrete “events” separated by long periods of time. An error can occur in the ongoing transfer process if there exists a difference in the rates in the flow of data between the data transmit/receive device and the host device. The use of a buffer to guarantee error-free operation of such a process is exactly what is covered by the CMs’ proposed construction. Papst’s construction, in contrast, has no relation to the patent.

V. “virtual files”

Papst’s own argument illustrates the absurdity of its construction for this term. To Papst, the word “virtual,” does not actually modify the word “file.” Instead, it somehow describes the medium on which a file is stored. Papst Reply at 34-35. Papst argues: “[T]he specification also notes that the memory means 14 may comprise EPROM, EEPROM, or RAM...” *Id.* at 35. Under Papst’s construction, *any file* stored in EPROM, EEPROM, or even RAM, none of which are “rotating discs,” is virtual. Thus, in Papst’s view, if one were to take a file from a hard disk drive and save an *exact duplicate* of the file on a solid state flash drive (commonly referred to as a “thumb drive,” and having no moving parts), then the duplicate file would become “virtual.” In contrast, the CMs’ construction preserves an essential feature of virtual files, namely that they are virtual because of how they are perceived, not because of the happenstance of the medium on which they are stored.

The only “support” Papst offers for its contorted construction is a conclusory declaration by its expert that does nothing more than parrot the proffered claim language. It is precisely this type of self-serving expert testimony about which the Federal Circuit has cautioned lower courts. *See Phillips*, 415 F.3d at 1318 (“conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a court”). Papst then claims that its expert declaration is un rebutted. That is wrong. The CMs have identified evidence from both intrinsic and extrinsic sources as to how these terms should be interpreted. *See* CM Br. at 38-39.

Papst also overstates the significance of *CytoLogix*, 424 F.3d at 1169. *CytoLogix* merely says that “an interpretation of one claim that renders another claim meaningless is *disfavored*.” *Id.* at 1173 (citing *In re Cruciferous Sprout Litigation*, 301 F.3d 1343, 1349 (Fed. Cir. 2002)). *Cruciferous Sprout* created this rule by analogy to the doctrine of claim differentiation, which says that claim terms should not be construed to render another claim superfluous. However, the doctrine of claim differentiation is only “a guide, not a rigid rule.” *Curtiss-Wright Flow Control Corp. v. Velan, Inc.*, 438 F.3d 1374, 1381 (Fed. Cir. 2006). Indeed, “where... claims are susceptible to only one reasonable interpretation and that interpretation results in a nonsensical construction of the claim as a whole, the claim must be invalidated.” *Chef Am., Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) (internal citations omitted). Thus, even if the CMs’ construction was inconsistent with the unasserted dependent claims, which it is not,¹¹ that reason alone would not require the Court to adopt Papst’s erroneous construction.

W. “*simulating a virtual file system to the host device*”

Papst purports to construe “*simulating a virtual file system to the host*” to show that it is

¹¹ As previously argued, the CMs’ construction of virtual files does not render dependent claims 7 and 9 meaningless, as Papst contends. The virtual files recited in these claims are virtual because they appear to the host device as files on the signaled hard drive, which is made to appear as though it is on the data transmit/receive device. CM Br. 39-40.

not invalid for indefiniteness, but only discusses how a person of ordinary skill would know what a virtual file system is. Papst concludes that the claim is not invalid because “simulating a disk drive with such a file system” is readily discernible. Papst Reply at 31. Unfortunately, the disputed term is “*simulating a **virtual** file system to the host device*,” and Papst provides no argument or evidence that such a term has any discernible meaning. Papst once again would prefer simply to rewrite its claims to remove any terms it does not like.

Papst’s attempt to characterize a “virtual file system” as a file system that does not exist on a rotating disc (Papst Reply at 31) is wrong for the same reasons explained above regarding “*virtual files*.” Because the CMs’ construction of this term is consistent with their well-supported construction of “*virtual files*,” their construction should be adopted.

X. “the usual driver for the input/output [storage] device”

To the extent that Papst is correct that the term “the usual driver for the input/output device” refers to the “driver for the input/output device customary in a host device,” then both terms should be construed to have the same meaning and require that “customary in a host device” (like “usual”) modifies the term “driver.” Otherwise, claim 14 of the ‘399 patent and claim 18 of the ‘499 patent are invalid for indefiniteness due to lack of antecedent basis. 35 U.S.C. § 112, ¶ 2. *See Halliburton Energy Serv., Inc. v. M-I LLC*, 514 F.3d 1244, 1249-50 (Fed. Cir. 2008) (affirming invalidity for indefiniteness and stating that a claim could be indefinite for lack of proper antecedent basis where such basis is not otherwise present by implication or the meaning is not reasonably ascertainable).

CONCLUSION

For the foregoing reasons, the Court should adopt the Camera Manufacturers’ proposed constructions.

DATED: August 6, 2008

By: /s/ Rachel M. Capoccia
Rachel M. Capoccia, Esq.

For The Victor Company of Japan Parties

Rachel M. Capoccia, Esq.
HOGAN & HARTSON LLP
1900 Avenue of the Stars
Suite 1400
Los Angeles, California 90067
E-mail: rmcapoccia@hhlaw.com
Tel: (310) 785-4744
Fax: (310) 785-4601

For The Matsushita Electric Industrial Co., Ltd. Parties

Richard de Bodo
David H. Ben-Meir
HOGAN & HARTSON LLP
1900 Avenue of the Stars
Suite 1400
Los Angeles, California 90067
Email: rdebodo@hhlaw.com
Tel: (310) 785-4694
Fax: (310) 785-4601

For The Casio Parties

J. Kevin Fee
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, NW
Washington, D.C. 20004
jkfee@morganlewis.com

For The Samsung Parties

Patrick J. Kelleher
Drinker Biddle & Reath LLP
191 North Wacker Drive
Suite 3700
Chicago, IL 60606-1698
Phone: (312) 569-1375
Fax: (312) 569-3375
patrick.kelleher@dbr.com

For the Fujifilm Parties

Steven J. Routh
Sten A. Jensen
Orrick, Herrington & Sutcliffe LLP
Columbia Center
1152 15th St, NW
Washington DC 20005
Phone: (202) 339-8400
Fax: (202) 339-8500
srouth@orrick.com
sjensen@orrick.com

For the Olympus Parties

Richard de Bodo
Hogan & Hartson, LLP
1999 Avenue of the Stars
Suite 1400
Los Angeles, CA 90067
Phone: (310) 785-4694
Fax: (310) 785-4601
rdebodo@hhlaw.com

For Hewlett-Packard Company:

Heather N. Mewes
Fenwick & West LLP
555 California Street, Suite 1200
San Francisco, CA 94104
Phone: (415) 875-2300
Fax: (415) 281-1350
hmewes@fenwick.com

For Ricoh Americas Corp.

Paul Devinsky
McDermott Will & Emery LLP
600 13th Street N.W.
Washington D.C. 20005-3096
Tel- 202.756.8000 (Main)
Fax -202.756.8087
Mobile-301.512.0060
pdevinsky@mwe.com

For the Nikon Parties

David L. Witcoff
Marc S. Blackman
Jones Day
77 W. Wacker Drive
Chicago, Illinois 60601
Direct: 312-269-4259
Fax: 312-782-8585
E-mail: dlwitcoff@jonesday.com

CERTIFICATE OF SERVICE

I, Rachel M. Capoccia, hereby certify that on this 6th day of August 2008, a true and correct copy of the foregoing **CAMERA MANUFACTURERS' SURREPLY MARKMAN BRIEF** was served on counsel of record by email through the Court's ECF system as follows:

For Papst Licensing GmbH & Co. KG (via e-mail):

Robert F. Muse
STEIN, MITCHELL & MEZINES LLP
1100 Connecticut Avenue, NW
Suite 1100
Washington, DC 20036-4195
(202) 737-7777
(202) 296-8312 (fax)
rmuse@steinmitchell.com

Jerold B. Schnayer
Husch Blackwell Sanders Welsh & Katz
120 South Riverside Plaza
22nd Floor
Chicago, IL 60606
(312) 655-1500
(312) 655-1501 (fax)
jbschnayer@huschblackwell.com

For The Victor Company of Japan Parties (via e-mail):

Rachel M. Capoccia, Esq.
HOGAN & HARTSON LLP
1900 Avenue of the Stars
Suite 1400
Los Angeles, California 90067
Email: rmcapoccia@hhlaw.com
Tel: (310) 785-4744
Fax: (310) 785-4601

For The Matsushita Electric Industrial Co., Ltd. Parties (via e-mail):

Richard de Bodo
HOGAN & HARTSON LLP
1900 Avenue of the Stars
Suite 1400
Los Angeles, California 90067
Email: rdebodo@hhlaw.com
Tel: (310) 785-4694
Fax: (310) 785-4601

For The Casio Parties (via e-mail):

J. Kevin Fee
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, NW
Washington, D.C. 20004
jkfee@morganlewis.com

For The Samsung Parties (via e-mail):

Patrick J. Kelleher
Drinker Biddle & Reath LLP
191 North Wacker Drive
Suite 3700
Chicago, IL 60606-1698
Phone: (312) 569-1375
Fax: (312) 569-3375
patrick.kelleher@dbr.com

For the Fujifilm Parties. (via e-mail):

Steven J. Routh
Orrick, Herrington & Sutcliffe LLP
Columbia Center
1152 15th St, NW
Washington DC 20005
Phone: (202) 339-8400
Fax: (202) 339-8500
srouth@orrick.com

For the Olympus Parties (via e-mail):

Richard de Bodo
Hogan & Hartson, LLP
1999 Avenue of the Stars
Suite 1400
Los Angeles, CA 90067
Phone: (310) 785-4694
Fax: (310) 785-4601
rdebodo@hhlaw.com

For Ricoh Americas Corp. (via e-mail)

Paul Devinsky
McDermott Will & Emery LLP
600 13th Street N.W.
Washington D.C. 20005-3096
Tel- 202.756.8000 (Main)
Fax -202.756.8087
Mobile-301.512.0060
pdevinsky@mwe.com

For the Nikon Parties (via e-mail)

Marc S. Blackman
Jones Day
77 W. Wacker Drive
Chicago, Illinois 60601
Direct: 312-269-4369
Fax: 312-782-8585
E-mail: msblackman@jonesday.com

For Hewlett-Packard Company (via e-mail):

Heather N. Mewes
Fenwick & West LLP
555 California Street, Suite 1200
San Francisco, CA 94104
Phone: (415) 875-2300
Fax: (415) 281-1350
hmewes@fenwick.com

/s/ Rachel M. Capoccia

EXHIBIT R

**THE PARTIES' PROPOSED CONSTRUCTIONS
OF DISPUTED CLAIM TERMS**

The Camera Manufacturers hereby submit the following chart listing the parties' proposed constructions of terms of the claims in the patents-in-suit that (a) have been identified by any party as requiring construction, and (b) are contained within the asserted claims (399 Patent Claims 1, 2, 3, 5, 7, 11, 14, and 15; 449 Patent Claims 1, 2, 6, 7, 8, 9, 12, 13, 15, 16, 17, and 18).

USP 6,470,399's Claim Language Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
1. An <i>interface device for communication between a host device</i> , which comprises drivers for input/output devices customary in a host device and a <i>multi-purpose interface</i> , and a <i>data transmit/receive device</i> , the data transmit/receive device being arranged for providing analog data, comprising:	interface device	A stand-alone device that a user can readily physically connect to and disconnect from a host device and a data transmit/receive device and that directs communication between these devices when they are connected.	The preamble should be construed to be non-limiting. The term "interface device" should be construed to mean the structure defined in the claim body, below.
	host device	A general purpose computer that connects to and controls the operation of peripherals.	The term "host device," generally means a general purpose computer to which hardware devices may be attached, such as Personal Computers ("PCs") and other host computer systems as described in the patent written description. The host device is defined in claim 1 to include drivers for input/output devices customary in a host device and a multi-purpose interface.
	data transmit/receive device	A device that transmits data to and receives data from the host device when connected to the host device by the interface device.	The term "data transmit/receive device," while not a claim limitation, may be construed for context in accordance with the definition in the patent as a device

USP 6,470,399's Claim Language Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
			“from which data is to be acquired or with which two-way communication is to take place.” A data transmit/receive device should be construed to cover devices that acquire data, or devices that are capable of two way communication, or both.
	for communication between [the host device and a data transmit/receive device]	For transmitting of information bidirectionally and actively between two devices.	
	multi-purpose interface	A communication interface designed for use with multiple devices having different functions from each other.	
a processor;		The Camera Manufacturers do not believe this term needs to be construed; the ordinary meaning suffices.	The term “processor” means “any [] kind of microprocessor, including Digital Signal Processors.
a memory;		The Camera Manufacturers do not believe this term needs to be construed; the ordinary meaning suffices.	“Memory” should be given its plain and ordinary meaning, and encompass any type of memory. Examples given in the ‘399 patent include EPROM, EEPROM, and RAM.

USP 6,470,399's Claim Language Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
<i>a first connecting device for interfacing the host device with the multi-purpose interface of the host device; and</i>	interfacing first connecting device for interfacing the host device with the interface device	Physically connecting. A physical plug or connector for permitting a user to readily attach and detach the interface device with the host device.	The term "first connecting device" should be construed to mean the circuit devices used to couple the interface device to the multipurpose interface of a computer. The term "for interfacing with the host device" should be construed to mean for establishing communication with the computer.
<i>a second connecting device for interfacing the interface device with the data transmit/receive device, the second connecting device including a sampling circuit for sampling the analog data provided by the data transmit/receive device and an analog-to-digital converter for converting data sampled by the sampling circuit into digital data, the second connecting device should not be limited to a connector, nor should the term "interfacing" be limited to making a physical connection.</i>	second connecting device for interfacing the interface device with the data transmit/receive device	A physical plug or socket for permitting a user to readily attach and detach the interface device with a plurality of dissimilar data transmit/receive devices.	The term "second connecting device" as it is used in the '399 patent should be construed to mean the structure actually recited in claim 1, i.e., "a sampling circuit for sampling the analog data provided by the data transmit/receive device" and "an analog-to-digital converter for converting data sampled by the sampling circuit into digital data." The second connecting device should not be limited to a connector, nor should the term "interfacing" be limited to making a physical connection.
<i>wherein the interface device is configured by the processor and the memory to include a first command</i>	first command interpreter	A software program for interpreting an inquiry from a host device and sending a signal to the host device in response to the	The first command interpreter should be construed to be capable of receiving an "inquiry" from the

USP 6,470,399's Claim Language Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
<i>interpreter and a second command interpreter,</i>		inquiry that "lies to the host computer as to the real nature of the data transmit/receive device."	computer ("host device").
	second command interpreter	A software program for translating data request commands from the host into data transfer commands understandable by a plurality of dissimilar data transmit/receive devices.	The second command interpreter should be construed to be capable of receiving a data request command from the computer ("host device"), and to initiate the transfer of digital data to the computer.
	wherein the interface device is configured by the processor and memory to include a first command interpreter and a second command interpreter	The processor of the interface device runs a program from its memory to determine the data transfer parameters of the interface device for the first and second command interpreters.	
wherein the first command interpreter is configured in such a way that the command interpreter, when receiving an inquiry from the	inquiry	The SCSI inquiry command.	An "inquiry" should be construed to mean an instruction seeking information concerning the type of the device attached to a computer.

USP 6,470,399's Claim Language Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
host device as to a type of a device attached to the multi-purpose interface of the host device, <i>sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is an input/output device customary in a host device</i>, whereupon the host device communicates with the interface device by means of <i>the driver for the input/output device customary in a host device</i>, and	an input/output device customary in a host device	A data input/output device that was normally present within the chassis of most commercially available computers at the time of the invention. The I/O devices that were customary in personal computers were hard disk drives, floppy disk drives, CD-ROM drives and tape drives.	The phrase "an input/output device customary in a host device" means a hardware device which inputs or outputs data with respect to a host computer, and is a device which is sufficiently common such that software drivers for communicating with the input/output device are typically provided with the host computer as it is purchased. Input/output devices customary in a host device include, for example, hard disk drives, floppy disk drives, CD-ROM drives, or tape drives or printers.
	sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is an input/output device customary in a host device	The first command interpreter sends a signal to the host device that the data transmit/receive device is an input/output device customary in a host device, and in so doing "lies to the host computer as to the real nature of the data transmit/receive device."	The phrase "sends a signal regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device which signals to the host device that it is an input/output device customary in a host device" should be construed to mean that, at least with respect to the portion of the signal relevant to software driver selection, the signal sent by the first command interpreter in response to the inquiry consistent with a signal that an input/output device customary in a host device would provide in response to the inquiry, and that

USP 6,470,399's Claim Language Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
			such a response is not based on what data transmit/receive devices may be associated with the interface device.
	the driver	The set of software routines used to control an input/output device.	
	the driver for the input/output device customary in a host device	The driver normally present in most commercially available computers at the time of the invention.	A "driver" for an input/output device customary in a host device, or for a storage device customary in a host device, means a software driver that is normally used by the computer to communicate with the customary hardware device.
	whereupon the host device communicates with the interface device by means of the driver for the input/output device customary in a host device	The Camera Manufacturers do not believe this limitation needs to be construed separately from the constituent claim terms already being construed.	The "whereupon" clause should be construed to mean that upon receiving the "signal," the host device automatically uses one or more software drivers for use with the customary input/output devices to communicate with the interface device.

USP 6,470,399's Claim Language Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
wherein the second command interpreter is configured to interpret a data request command from the host device to the type of input/output device signaled by the first command interpreter as a data transfer command for initiating a transfer of <i>the digital data</i> to the host device.	the digital data	The same digital data output from the analog to digital ("A/D") converter, unmodified by additional processing.	The second command interpreter should be construed to be capable of receiving a data request command from the computer ("host device"), and to initiate the transfer of digital data to the computer. The term "the digital data," while referring to the data digitized in the second connecting device, includes data that has undergone further processing, such as digital signal processing.

USP 6,470,399's Claim Language Dependent Claims 2, 3, 5, 7	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
2. An interface device according to claim 1, wherein the drivers for input/output drivers customary in a host device comprise a hard disk driver, and the signal indicates to the host device that the host device is communicating with a hard disk.		The Camera Manufacturers do not believe this claim in its entirety needs to be construed separately from the individual claim terms already being construed. For the proposed constructions of the individual terms, see the terms defined above with respect to Claim 1.	Claim 2 should be construed to require the interface device to send a signal in response to an inquiry from the computer that indicates to the computer that the interface device is a particular type of input/output device, i.e., a hard disk drive, and that the computer communicate with the interface device using a driver for a particular type of input/output device, i.e., a hard disk drive.
3. An interface device according to claim 1, wherein the memory means comprises <i>a buffer to buffer data to be transmitted between the data transmit/receive device and the host device.</i>	a buffer to buffer data to be transferred between the data transmit/receive device and the host device	Volatile memory used to temporarily store data to compensate for differences between the rate in the flow of data between the data transmit/receive device and the host device.	The "memory means compris[ing] a buffer to buffer data" should be construed to mean that the memory is adapted to store the data gathered by the transmit/receive device until it is transferred to the computer, thus allowing time independence in terms of when the data is acquired and when the data is later transferred to a host computer.
5. An interface device according to claim 1, wherein the processor is a digital signal processor.		See all terms defined with respect to Claim 1	The term "digital signal processor" should be given its ordinary meaning of a processor with a highly parallel, pipeline architecture optimized to perform repetitive operations.

USP 6,470,399's Claim Language Dependent Claims 2, 3, 5, 7	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
7. An interface device according to claim 2, which further comprises a <i>root directory</i> and <i>virtual files</i> which are present on the signaled hard disk drive and which can be accessed from the host device.	virtual files	A file that does not physically exist as a file in the interface device but appears to the host device to be an actual file, and references data to be transmitted between the data transmit/receive device and the host device.	Virtual files means files which appear to be present on an emulated disk drive, yet which are not actually on a rotating disc.
	root directory	The Camera Manufacturers do not believe this term needs to be construed; the ordinary meaning suffices.	A root directory should be given its plain and ordinary meaning of a directory which is not in another directory.

USP 6,470,399's Claim Language Claim 11	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
11. An interface device for communication between a host device, which comprises a multi-purpose interface and a specific driver for this interface, and a data transmit/receive device, the data transmit/receive device being arranged for providing analog data, comprising: - a processor; - a memory; - a first connecting device for interfacing the host device with the interface device via the multi-purpose interface of the host device; and - a second connecting device for interfacing the interface device with the data transmit/receive device, the second connecting device including a sampling circuit for sampling the analog data provided by the data transmit/receive device and an analog-to-digital converter for converting data sampled by the sampling circuit into digital data,		See all terms defined with respect to Claim 1.	

USP 6,470,399's Claim Language Claim 11	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
wherein the first command interpreter is configured in such a way that the interface device, when receiving an inquiry from the host device as to the type of a device attached at the multi-purpose interface of the host device, sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is an input/output device customary in a host device, whereupon the host device communicates with the interface device by means of the <i>specific driver for the multi-purpose interface</i>, and	specific driver for the multi-purpose interface	The set of software routines that control the multi-purpose interface that are developed for the particular multi-purpose interface.	In claim 11, a "specific driver for this interface" means a driver for the multipurpose interface. A specific driver for the multipurpose interface should be given its plain and ordinary meaning, i.e., a software driver that enables a host system to communicate via a multipurpose interface.
wherein the second command interpreter is configured to interpret a data request command from the host device to the type of input/output device signaled by the first command interpreter as a data transfer command for initiating a transfer of the digital data to the host device.			

USP 6,470,399's Claim Language Claim 14	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
14. A method of communication between a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and a data transmit/receive device, the data transmit/receive device being arranged for providing analog data, via an interface device, comprising: interfacing of the host device with a first connecting device of the interface device via the multi-purpose interface of the host device; interfacing of the data transmit/receive device with a second connecting device of the interface device, the second connecting device including a sampling circuit for sampling the analog data provided by the data/transmit/receive device and an analog-to-digital converter for converting data sampled by the sampling circuit into digital data;		See all terms defined with respect to Claim 1.	
inquiring by the host device at the interface device as to the type	inquiring	Sending the SCSI inquiry command.	

USP 6,470,399's Claim Language Claim 14	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
of device to which the multi-purpose interface of the host device is attached; regardless of the type of the data transmit/receive data attached to the second connecting device of the interface device, responding to the inquiry from the host device by the interface device in such a way that it is an input/output device customary in a host device, whereupon the host device communicates with the interface device by means of the <i>usual driver</i> for the <i>input/output device</i>, and interpreting a data request command from the host device to the type of input/output device customary in the host device as a data transfer command for initiating a transfer of the digital data to the host device.	the usual driver for the input/output device	Indefinite, but to the extent these claim terms can be construed, they should be construed to mean "the driver normally present in most commercially available computers at the time of the invention."	Same construction as claim 1.

USP 6,470,399's Claim Language Dependent Claim 15	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
15. A method according to claim 14, wherein the drivers for input/output devices customary in a host device comprise a driver for a storage device and in particular for a hard disk drive.		See all terms defined with respect to Claim 1.	

USP 6,895,449's Claim Language Independent Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
1. An interface device for communication between a host device , which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and a data transmit/receive device comprising the following features:	interface device	See all terms defined with respect to '399 Patent.	The preamble should be construed to be non-limiting. The term "interface device" should be construed to mean the structure defined in the claim body, below.
	host device		The term "host device," generally means a general purpose computer to which hardware devices may be attached, such as Personal Computers ("PCs") and other host computer systems as described in the patent written description. The host device is defined in claim 1 to include drivers for storage devices customary in a host device and a multi-purpose interface.
	data transmit/receive device		The term "data transmit/receive device," while not a claim limitation, may be construed for context in accordance with the definition in the patent as a device "from which data is to be acquired or with which two-way communication is to take place." A data transmit/receive device should be construed to cover devices that acquire data, or devices that are capable of two way communication, or both. The

USP 6,895,449's Claim Language Independent Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
			data transmit/receive device in claim 1 of the '449 patent is not limited to being arranged to provide analog data.
a processor; a memory; a first connecting device for interfacing the host device with the interface device via the multi-purpose interface of the host device; and a second connecting device for interfacing the interface device with the data transmit/receive device,	a second connecting device		Same construction as claim 1 of the '399 patent, except that the second connecting device in the '449 patent is not limited to a sampling circuit and an analog to digital converter.
wherein the interface device is configured by the processor and the memory in such a way that the interface device, when receiving an inquiry from the host device as to the type of a device attached to the multi-purpose interface of the host device, sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is a <i>storage device customary in a host device</i> , whereupon the host device communicates with the interface	inquiry	The SCSI inquiry command.	As in the '399 patent, an "inquiry" should be construed to mean an instruction seeking information from the interface device regarding the type of device attached to the computer."
	sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to	See all terms defined with respect to '399, claim 1.	The phrase "sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is a storage device

USP 6,895,449's Claim Language Independent Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
device by means of the driver for the storage device customary in a host device, and	the host device which signals to the host device that it is a storage device customary in a host device		customary in a host device" should be construed to mean that, at least with respect to the portion of the signal relevant to software driver selection, the signal sent by the interface device in response to the inquiry is consistent with a response that a storage device customary in a host device would send in response to the inquiry, and that such a response is not based on what data devices may be associated with the interface device.
	storage device customary in a host device	Same as "input/output device customary in a host device" of '399, claim 1.	The phrase "a storage device customary in a host device" should be construed to mean any one of a wide variety of storage devices, including disk drives. The '449 patent defines storage devices to include, for example, hard disk drives, floppy disk drives, CD-ROM drives, or tape drives.
	Whereupon the host device communicates with the interface device by means of the storage driver for the storage device customary in a	The Camera Manufacturers do not believe this limitation needs to be construed separately from the constituent claim terms already being construed.	The "whereupon" clause above should be construed to mean that upon receiving the "signal" the host device automatically uses one or more software drivers developed for use with the customary storage devices to

USP 6,895,449's Claim Language Independent Claim 1	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
	host device, and		communicate with the interface device.
wherein the interface device is arranged for <i>simulating a virtual file system to the host</i> , the virtual file system including a directory structure.	simulating a virtual file system to the host device	Appearing as a file system to the host, but actually maintaining virtual files, where virtual files do not physically exist as files in the interface device but appear to the host device to be actual files, and reference data to be transmitted between the host device and the data transmit/receive device.	The phrase "simulating a virtual file system to the host" should be construed to mean that the interface device responds to the host computer with a file system that would be found on a conventional hard disk, even though the structure of a conventional hard disk is not present on the interface device.

USP 6,895,449's Claim Language Dependent Claims 2, 6, 7, 8, 9, 12, 13, 15, 16	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
2. An interface device in accordance with claim 1, in which the directory structure has a configuration file for setting and controlling functions of the interface device or an executable or a batch file for conducting a routine stored in the memory or a data file used for transferring data from the data transmit/receive device to the host device or a help file for giving help on handling the interface device.		See all terms defined with respect to '399 Patent.	
6. An interface device in accordance with claim 1 wherein, in response to a request from the host to read a boot sequence, the processor is arranged to send a virtual boot sequence to the host.		See all terms defined with respect to '399 Patent	This element should be construed to mean configuring the interface device to provide information that is consistent with the boot sectors of a disk drive having rotating magnetic discs.
7. An interface device in accordance with claim 6 wherein the virtual boot sequence includes a starting position and a length of a file allocation table, an indication of a type of the storage device or a number of sectors of the storage device.		See all terms defined with respect to '399 Patent.	These terms are well known in the art and should be given their ordinary meanings.

USP 6,895,449's Claim Language Dependent Claims 2, 6, 7, 8, 9, 12, 13, 15, 16	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
8. An interface device in accordance with claim 7 wherein, in response to a request from the host to display a directory of the storage device, a processor is arranged for transferring the file allocation table and the directory structure to the host.		See all terms defined with respect to '399 Patent.	These terms are well known in the art and should be given their ordinary meanings.
9. An interface device in accordance with claim 1 wherein the file allocation table and the directory structure is transferred to the host in response to a request from the host to read data from or store data to the storage device.		See all terms defined with respect to '399 Patent.	These terms are well known in the art and should be given their ordinary meanings.
12. An interface device in accordance with claim 1 wherein the file allocation table includes information on numbers of blocks occupied by the data file wherein the interface device is arranged for receiving block numbers or a block number range from the host when the host wants to read the data file, and wherein the interface device is arranged to start a data transfer to the host, when the block numbers or the block number range is received from the host.		See all terms defined with respect to '399 Patent.	These terms are well known in the art and should be given their ordinary meanings.

USP 6,895,449's Claim Language Dependent Claims 2, 6, 7, 8, 9, 12, 13, 15, 16	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
13. An interface device in accordance with claim 12 wherein the processor is arranged for formatting the data acquired by the second connecting device into blocks having a predetermined size, the predetermined size being suited for the storage device.		See all terms defined with respect to '399 Patent.	These terms are well known in the art and should be given their ordinary meanings.
15. An interface device in accordance with claim 1 wherein the storage device is a hard disk.		See all terms defined with respect to '399 Patent.	These terms are well known in the art and should be given their ordinary meanings.
16. An interface device in accordance with claim 1 wherein the memory has <i>a data buffer for permitting independence in terms of time of the data transmit/receive device attachable to the second connecting device from the host device attachable to the first connecting device.</i>	a data buffer for permitting independence in terms of time of the data transmit/receive device attachable to the second connecting device from the host device attachable to the first connecting device	Volatile memory used to temporarily store data to compensate for differences between the rate in the flow of data between the data transmit/receive device and the host device.	Same construction as claim 3 of the '399 patent.

USP 6,895,449's Claim Language Independent Claim 17	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
17. An interface device for communication between a host device, which comprises a multi-purpose interface and a specific driver for this interface, and a data transmit/receive device comprising the following features: - a processor; - a memory; - a first connecting device for interfacing the host device with the interface device via the multi-purpose interface of the host device; and - a second connecting device for interfacing the interface device with the data transmit/receive device, where the interface device is configured using the processor and the memory in such a way that the interface device, when receiving an inquiry from the host device as to the type of a device attached at the multi-purpose interface of the host device, sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device,		See all terms defined with respect to '399 Patent.	Same construction as claim terms previously used in the '399 and '449 patents.

USP 6,895,449's Claim Language Independent Claim 17	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
to the host device which signals to the host device that it is a storage device customary in a host device, whereupon the host device communicates with the interface device by means of the specific driver for the multi-purpose interface, and wherein the interface device is arranged for simulating a virtual file system to the host, the virtual file system including a file allocation table and a directory structure.			

USP 6,895,449 Claim Language Independent Claim 18	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
18. A method of communication between a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and a data transmit/receive device via an interface device comprising the following steps: interfacing of the host device with a first connecting device of the interface device via the multi-purpose interface of the host device; interfacing of the data transmit/receive device with a second connecting device of the interface device; inquiring by the host device at the interface device as to the type of device to which the multi-purpose interface of the host device is attached; regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, responding to the inquiry from the host device by the interface device in such a way that it is a storage device customary in a host device,		See all terms defined with respect to '399 Patent.	Same construction as claim terms previously used in the '399 and '449 patents.

USP 6,895,449 Claim Language Independent Claim 18	Terms requiring Construction	CMs' Proposed Construction	Papst's Proposed Construction
whereupon the host device communicates with the interface device by means of the usual driver for the storage device, and wherein the interface device is arranged for simulating a virtual file system to the host, the virtual file system including a file allocation table and a directory structure.			

EXHIBIT S

Webster's II

New College Dictionary



Houghton Mifflin Company
Boston • New York

Words are included in this Dictionary on the basis of their usage. Words that are known to have current trademark registrations are shown with an initial capital and are also identified as trademarks. No investigation has been made of common-law trademark rights in any word, because such investigation is impracticable. The inclusion of any word in this Dictionary is not, however, an expression of the Publisher's opinion as to whether or not it is subject to proprietary rights. Indeed, no definition in this Dictionary is to be regarded as affecting the validity of any trademark.

Copyright © 1995 by Houghton Mifflin Company. All rights reserved.

No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or by any information storage or retrieval system without the prior written permission of Houghton Mifflin Company unless such copying is expressly permitted by federal copyright law. Address inquiries to Reference Permissions, Houghton Mifflin Company, 222 Berkeley Street, Boston MA 02116.

Illustrations **azimuthal equidistant projection** and **sinusoidal projection** © 1986 by The American Congress on Surveying and Mapping.

Library of Congress Cataloging-in-Publication Data

Webster's II new college dictionary.
p. cm.

ISBN 0-395-70869-9 (alk. paper)
1. English language -- Dictionaries. I. Webster's II new
Riverside University dictionary
PE1628.W55164 1995
423 -- dc20

95-5833
CIP

Printed in the United States

whelmen, to turn over.] 1. To cover with water: SUBMERGE. 2. To overcome emotionally or mentally: OVERWHELM.

whelp (hwēlp, wēlp) *n.* [ME *whelp* < OE *hwelp*.] 1. A young offspring of a mammal, as a dog or wolf. 2. a. A child: youth. b. An impudent young fellow. 3. a. A tooth of a sprocket wheel. b. A ridge on the barrel of a windlass or capstan. — *v.* **whelped**, **whelping**, **whelps**. — *vi.* To give birth to a whelp or whelps. — *vt.* To give birth to (a whelp or whelps).

when (hwēn, wēn) *adv.* [ME < OE *hwenne*.] 1. At what time <When will we arrive?> 2. At which time <I know when to call it quits.> — *conj.* 1. At the time that <just before dawn, when it's very quiet> 2. As soon as <called me when they got home> 3. Whenever <When we worry too much, we get ill.> 4. During the time at which: WHILE <when I was thinner> 5. Whereas: although <They gave up when they might have succeeded.> 6. Considering that: if <How can you be a pianist when you won't practice!> — *pron.* What or which time <Since when have you been so neat!> — *n.* The time or date <We haven't selected the where and when.> **usage:** When is often used informally to mean "a situation or event," as in *A dilemma is when you don't know which way to turn*. This usage is best avoided in formal prose.

when-as (hwēn-āz', wēn-) *conj.* Archaic. 1. When. 2. Whereas.

whence (hwēns, wēns) *adv.* [ME *whennes* < *whenne*, whence < OE *hwanon*.] 1. From what place: from where <Whence came this creature!> 2. From what origin or source <Whence comes this lavish display!> — *conj.* 1. Out of which place: from or out of which. 2. By reason of which: from which <The cat was snowy white from cars to tail, whence the name Snowflake.> **usage:** Because whence contains the sense of "from," the expression *from whence* is avoided by many because it is considered redundant. Therefore, *Tell us whence* (not *from whence*) *they came* is preferable.

whence-so-ev-er (hwēns'sō-ēv'ər, wēns'-) *adv.* From whatever place or source. — *conj.* From any place or source that.

when-ev-er (hwēn-ēv'ər, wēn-) *adv.* 1. At whatever time. 2. also **when ever**. When. — *conj.* 1. At whatever time that <We can eat whenever the guests arrive.> 2. Every time that <I smile whenever I think of that day.>

when-so-ev-er (hwēn'sō-ēv'ər, wēn-) *adv.* At whatever time at all: WHENEVER. — *conj.* Whenever.

where (hwār, wār) *adv.* [ME < OE *hwær*.] 1. At or in what place <Where are the restrooms?> 2. In what situation or position <Where would we be without the loan!> 3. From what place or source <Where did you hear that story!> 4. To what place: toward what end <Where is this discussion leading!> — *conj.* 1. At what or which place <came to a field where wildflowers grew> 2. a. In a place in which <lives where the winter is short> b. In any place or situation in which: WHEREVER <Where I go, my friend goes too.> 3. a. To a place in which <You should go where you can study.> b. To a place or situation in which <won't go where I'm not wanted> — *n.* 1. The place or occasion <knew the when but not the where of it> 2. What place, source, or cause <Where are they from?>

where-a-bouts (hwār'ā-bouts', wār'-) *adv.* In, at, or near what location <Whereabouts can we find it!> — *n.* (sing. or pl. in number). Approximate location <I've just learned their whereabouts.>

where-as (hwār-āz', wār-) *conj.* 1. It being the fact that: INASMUCH AS. 2. While at the same time. 3. While on the contrary. — *n.* 1. An introductory statement to a formal document: PREAMBLE. 2. A conditional statement.

where-at (hwār-āt', wār-) *conj.* 1. Toward or at which. 2. As a result or consequence of: WHEREUPON.

where-by (hwār-bī', wār-) *conj.* In accordance with which: by or through which.

where-fore (hwār'fōr', -fōr', wār'-) *adv.* [ME *wherfor*: *wher*, where + *fore*, for.] 1. For what purpose or reason: WHY. 2. Therefore. — *n.* A purpose or cause <the whys and wherefores>

where-from (hwār'frōm', -frōm', wār'-) *conj.* From which.

where-in (hwār'īn', wār-) *adv.* In what way: HOW <Wherein have I erred!> — *conj.* 1. In which location: WHERE <the city wherein my parents live> 2. During which. 3. In what way: HOW <told us wherein we were mistaken>

where-in-to (hwār'īn'tō, wār-) *conj.* Into which.

where-of (hwār'ōv', -ōv', wār-) *conj.* 1. Of what <They know whereof they speak.> 2. a. Of which <ancient art whereof many examples have been destroyed> b. Of whom.

where-on (hwār-ōn', -ōn', wār-) *adv.* Archaic. On which or what.

where-so-ev-er (hwār'sō-ēv'ər, wār'-) *conj.* Archaic. In, to, or from whatever place at all: WHEREVER.

where-through (hwār'thrō, wār'-) *conj.* Through, because of, or during which.

where-to (hwār'tō, wār'-) *adv.* To what place: toward what end. — *conj.* To which.

where-un-to (hwār-ūn'tō, wār-) *adv.* *o* *conj.* Whereto.

where-up-on (hwār'ə-pōn', -pōn') *conj.* 1. On which. 2. In close

consequence of which <The judge entered the courtroom, whereupon we stood up.>

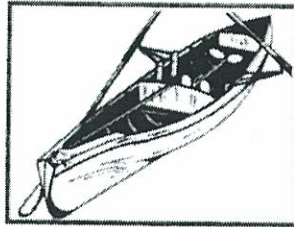
wher-ev-er (hwār-ēv'ər, wār-) *adv.* [ME: *wher*, where + *ever*, ever.]

1. In or to whatever place <Cut the cloth wherever indicated.> 2. also **where ever**. Where <Wherever did you get those shoes!> — *conj.* In or to whichever place or situation <made friends wherever I went>

where-with (hwār'wīth', -wīth', wār'-) *adv.* With what or which. — *pron.* The thing or things with which. — *conj.* By means of which.

where-with-al (hwār'wīth-əl', -wīth-, wār'-) *conj.* Wherewith. — *pron.* Wherewith. — *n.* The necessary means, esp. financial means <didn't have the wherewithal to plan for retirement>

wher-ry (hwēr'ē, wēr'ē) *n., pl. -ries*. [ME *whery*.] 1. A light swift rowboat built for one person and often used in racing. 2. A sailing barge used in East Anglia.



wherry

whet (hwēt, wēt) *vt.* **whet-ted**, **whet-ting**, **whets**. [ME *whetten* < OE *hwettan*.] 1. To sharpen or hone <whet a knife> 2. To make more keen: STIMULATE <The sizzling steak whetted my appetite.> — *n.* 1. The act of whetting. 2. Something that whets. 3. Informal. An appetizer.

wheth-er (hwēth'ər, wēth'-) *conj.* [ME < OE *hweðer*.] 1. — Used in indirect questions to introduce one alternative <We must find out whether the restaurant is open.> 2. — Used to introduce alternative possibilities <Whether I stay or whether I go, I'll need more money.> 3. Either <won the race, whether by luck or skill> — *pron.* Obs. Which. — **whether or no**. Regardless of the prevailing circumstances.

whet-stone (hwēt'stōn', wēt'-) *n.* A stone for honing tools.

whew (hwō, hwyō) *interj.* — Used to express strong emotion such as amazement or relief.

whey (hwā, wā) *n.* [ME < OE *hwaeg*.] The watery part of milk that separates from the curds, as in the process of making cheese. — **whey'ey** *adj.*

whey-face (hwā'fās', wā'-) *n.* One with a pallid face.

which (hwīch, wīch) *pron.* [ME < OE *hwīc*.] 1. What particular one or ones <Which of these hats is yours!> 2. The particular one or ones <Give me that which is mine.> 3. The one or ones previously named or implied, esp.: a. — Used as a relative pronoun in a clause that provides additional information about the antecedent <my car, which is old but reliable> b. — Used as a relative pronoun preceded by *that* or a preposition in a clause that defines or restricts the antecedent <that which we ordered> <the topic on which I spoke> c. — Used instead of *that* as a relative pronoun in a clause that defines or restricts the antecedent <The sale which was held later was better.> 4. Archaic. The person named or implied. 5. Any of the persons, things, or events named or implied: WHICHEVER <Buy which looks the most useful.>

6. A thing or circumstance that <We stayed late, which was foolish.> — *adj.* 1. What particular one or ones of a number of persons or things <which piece of material> 2. Any one or any number of: WHICHEVER <Take which car you please.> 3. Being the one or ones previously named <The music began, at which point the curtain rose.>

which-ev-er (hwīch-ēv'ər, wīch-) *pron.* Whatever one or ones. — *adj.* Being any one or any number of a group <See whichever films you like.> <It's a short trip whichever route you take.>

which-so-ev-er (hwīch'sō-ēv'ər, wīch'-) *pron.* *o* *adj.* Which-ever.

whick-er (hwīk'ər, wīk'-) *vi.* -ered, -er-ing, -ers. [Imit.] To whinny. — *n.* A whinny.

whid-ah (hwīd'ə, wīd'ə) *n.* var. of WHYDAH.

whiff (hwīf, wīf) *n.* [ME *wēffe*, offensive smell.] 1. A slight, gentle gust of air: WAFT. 2. A brief, passing odor carried in the air <a whiff of cologne> 3. An inhalation, as of air or smoke <took a whiff of the pipe> — *v.* **whiffed**, **whiffing**, **whiffs**. — *vi.* To be carried in brief gusts: WAFT. — *vt.* 1. To blow or convey in whiffs. 2. To inhale through the nose: SNIFF <a horse whiffing the air> — **whiff'er** *n.*

whif-ble (hwīf'əl, wīf'-) *v.* -fled, -fing, -fles. [← WHIFF.] — *vi.* 1. To think or move erratically: VACILLATE. 2. To blow in fitful gusts: PUFF. 3. To whistle lightly. — *vt.* To blow, displace, or scatter with gusts of air.

whif-ble-tree (hwīf'əl-trē, wīf'-) *n.* [Var. of WHIPPLETREE.] The pivoted horizontal crossbar to which the harness traces of a draft animal are attached and which is then attached to a vehicle or an implement.

Whig (hwīg, wīg) *n.* [Prob. short for Whiggamore, a member of a body

ōo boot ou out th thin th this ū cut ūr urge y young
yōo abuse zh vision ȝ about, item, edible, gallop, circus

EXHIBIT T

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

IN RE PAPST LICENSING GMBH & CO.
KG LITIGATION

This Document Relates To:
ALL CASES

Misc. Action No. 07-493 (RMC)

MDL Docket No. 1880

**PAPST'S OBJECTIONS AND SUPPLEMENTAL ANSWERS TO CASIO INC.'S
INTERROGATORY NO. 7**

Pursuant to Rules 33 and 26(e) of the Federal Rules of Civil Procedure, Defendant Papst Licensing GmbH & Co. KG ("Papst"), objects to and supplements its answers Casio Inc.'s Interrogatory No. 7 as follows:

GENERAL OBJECTIONS

1. Papst objects to Casio Inc.'s Interrogatories to the extent that they call for information protected by any applicable privilege or doctrine, including without limitation the attorney-client privilege, the work product doctrine and/or information pertaining to Papst counsel's mental impressions and/or trial preparation materials, any jointly shared privilege, and other protections afforded by Rule 26(b)(4)(B). Papst hereby asserts all such applicable privileges. Papst further objects to identifying such documents created after the commencement of this lawsuit.

2. Papst objects to Casio Inc.'s Interrogatories to the extent that they call for information disclosing confidential or proprietary information, and/or trade secrets of Papst, or information restricted from dissemination because of confidentiality commitments with other entities or pursuant to court order, statute, or regulation. Without waiving its objections, Papst will produce such information that is reasonably

responsive and non-privileged upon the entry of a protective order governing such confidential information, and only after the relevant third-parties are notified of the potential disclosure and provided an opportunity to object to the potential disclosure.

3. Papst objects to Casio Inc.'s Interrogatories to the extent that they call for the disclosure of any information that is not reasonably related to the subject matter of this action, that is not relevant to the claims or defenses asserted in this action, that is not reasonably calculated to lead to the discovery of admissible evidence, and/or to the extent that the interrogatories seek to impose discovery obligations beyond those imposed by or permitted under the Federal Rules of Civil Procedure.

4. Papst objects to Casio Inc.'s Interrogatories as unduly and unnecessarily burdensome to the extent the requests seek information already in Casio Inc.'s possession, custody, or control.

5. Papst objects to Casio Inc.'s Interrogatories to the extent the requests, instructions, and/or definitions are unreasonably broad, vague and ambiguous, and/or unduly burdensome.

6. Papst has not completed its investigation of the facts relating to this action. Accordingly, with respect to all of the Interrogatories, Papst Licensing reserves the right to amend and/or supplement its responses, if necessary, with additional information based upon further investigation and discovery, and to rely upon such information in the course of this action and at trial.

7. In those instances where the responses to Casio Inc.'s interrogatories can be derived from the business records of Papst or from an examination, audit or inspection

of such business records, and the burden of deriving or ascertaining the answer is substantially the same for Casio Inc. and Papst, Papst will specify the records from which an answer may be ascertained and afford Casio Inc.'s counsel a reasonable opportunity to audit, inspect and copy such records or provide categorized copies of such records in accordance with Federal Rule of Civil Procedure 33(d), after entry of a suitable protective order.

8. Papst objects to any and all interrogatories to the extent that they are repetitive, overlapping or duplicative. Moreover, Papst may attempt to designate for production relevant documents in response to Casio Inc.'s interrogatories. However, by so designating documents, Papst does not represent that the identified documents are the only relevant documents, nor does Papst represent that the identified documents are necessarily the most relevant documents. In addition, the designation of documents is not necessarily exhaustive and other relevant documents may or may not exist. However, Papst will make a good faith effort to identify relevant documents and/or categories of documents as provided in Rules 33 and 34, Fed.R.Civ.P.

9. Papst objects to Casio Inc.'s interrogatories to the extent that they request Papst to provide the names of persons with knowledge of certain facts and a summary of each person's knowledge. If known, Papst will identify those persons, or documents from which the identity of those persons may be ascertained, believed to be generally most knowledgeable regarding the requested subjects.

GENERAL OBJECTIONS TO INSTRUCTIONS AND DEFINITIONS

1. Papst objects to Casio Inc.'s Instructions and Definitions to the extent they seek to impose obligations beyond those set forth in Rules 26 and 33 of the Federal Rules

of Civil Procedure and any applicable local rules. Papst will respond to Casio Inc.'s Interrogatories in the manner required by the Federal Rules of Civil Procedure and applicable local rules.

2. Papst objects to Casio Inc.'s Instruction D as overly broad and unduly burdensome to the extent that it does not permit Papst to produce a copy of the document in lieu of providing the requested details.

3. Papst objects to Casio Inc.'s Instruction E as overly broad, unduly burdensome, and as calling for irrelevant information not reasonably calculated to lead to the discovery of admissible evidence. Papst responds that it will identify the title of a proceeding when identifying a proceeding.

4. Papst objects to Casio Inc.'s Instruction F as overly broad, unduly burdensome, and as calling for irrelevant information not reasonably calculated to lead to the discovery of admissible evidence.

5. Papst objects to Casio Inc.'s Instruction H as overly broad, unduly burdensome, and as calling for irrelevant information not reasonably calculated to lead to the discovery of admissible evidence. Specifically, Papst objects to being required to supplement information "within 30 days after acquiring such knowledge or advise Casio in writing as to why such additional information cannot be provided within the specified period" as it imposes obligations beyond those required by Fed.R.Civ.P. 33 and 26.

**SPECIFIC OBJECTIONS AND SUPPLEMENTAL ANSWERS TO
INTERROGATORY NO. 7**

INTERROGATORY NO. 7

Provide, in full and complete detail, Papst's bases for refuting Casio's defenses of non-infringement and invalidity/unenforceability.

ANSWER:

Papst objects that Casio's Interrogatory is unclear as to what is meant by "refuting Casio's defenses of non-infringement and invalidity/unenforceability." Papst understands this interrogatory to mean the defenses articulated by Casio in Casio Inc.'s Objections And Responses To Papst Licensing GmbH & Co. KG's First Set of Interrogatories To Casio, Inc., served May 21, 2007 ("Casio's Interrogatory Responses") and Casio Inc.'s Supplemental Objections And Responses To Papst Licensing GmbH & Co. KG's First Set of Interrogatories To Casio, Inc., served June 22, 2007 ("Casio's Supplemental Interrogatory Responses"). The present response refutes the defenses articulated in Casio's Interrogatory Responses and Casio's Supplemental Interrogatory Responses. Papst objects to the extent that Casio construes this interrogatory to require any refutation of any defense not articulated in such responses.

To the extent that this interrogatory seeks information and responses inconsistent with the dates set in the Second Practice and Procedure Order, Docket No. 36 (April 8, 2008) ("Order"), Papst objects that this interrogatory is premature. In the Order, at Paragraph 17, the Court orders that: "Papst shall file its asserted claims and infringement contentions no later than May 28, 2008." Papst reserves the right to present its asserted claims and infringement contentions at the time set by the Order. Also, Papst reserves the right to amend or supplement the present response as the parties comply with the disclosure, briefing, and hearing schedule concerning claim construction as set forth in the Order.

Papst also objects that this interrogatory is premature in that Casio has not fully responded to the discovery requests that Papst has served on Casio. For example, at the time of this response, Casio has not provided any design documentation, nor any detailed product specifications, nor any software code, for its digital cameras. Papst reserves the right to amend or supplement the present responses after it receives and evaluates any further substantive responses from Casio.

Without waiving any of the above objections, Papst responds to Interrogatory No. 7 as follows. Pages 6-14 of Casio's Interrogatory Responses, have the following captioned sections concerning infringement of the Patents-in-Suit: "Interface Device" (p.7), "Data transmit/receive device" (p. 9), "Communication between" (p. 10), "Configured by the processor and memory" (p. 12), "Input/output device customary in a host device, regardless of the device attached" (p. 13) and "Virtual file system" (p. 14). Casio's purported defenses are without merit.

Papst provided claim language analysis and application to Casio's digital cameras relevant to refuting Casio's defenses in Defendant Papst Licensing GmbH & Co. KG's First Supplemental Answers to Plaintiff Casio Inc.'s First Set of Interrogatories (Nos. 1-6) ("Papst's Responses to Nos. 1-6"), served June 11, 2007. Those responses are incorporated herein by reference. Based on currently available information, additional responses individually addressing each of the portions of Casio's Interrogatory Responses are provided below. Papst reserves the right to amend or supplement this response after it receives and evaluates any additional information as may become known as discovery progresses in this case.

"Interface Device"

Casio's contention in Casio's Interrogatory response, for example, that its digital cameras supposedly lack an "interface device" improperly imports limitations from the specification into the claims. There is no recitation in the claims themselves for the limitations that Casio seeks to impose on the patents. The language of Claim 1 of the '399 patent, for example, recites that the "interface device" includes the following parts: a processor, a memory, a first connecting device, and a second connecting device. In one portion of claim 1 of the '399 patent, for example, relating to how the data transmit/receive device relates to the interface device, is silent as to whether the data transmit receive device is separable from the interface device:

a second connecting device for interfacing the interface device with the data transmit/receive device, the second connecting device including a sampling circuit for sampling the analog data provided by the data transmit/receive device and an analog-to-digital converter for converting data sampled by the sampling circuit into digital data,

The word "interfacing" does not require, nor does it prohibit, a permanent interface with a permanently attached data transmit/receive device. Moreover, Casio's digital cameras have "a sampling circuit for sampling the analog data" provided by an image sensor (typically by way of a charge-coupled device, or "CCD"), and Casio does not deny the same. Also, Casio's digital cameras include an "analog-to-digital converter for converting data sampled by the sampling circuit into digital data," and Casio does not deny the same. It is generally improper to look to the specification, for example, in an attempt to add limitations that are not recited in the claim. Because the claim language does not recite any limitation as to whether the data transmit/receive device is separable from the interface device, and because Casio's digital cameras have the structure that is

recited for the second connecting device, Casio's digital cameras literally include "a second connecting device" as that element is defined in claim 1 of the '399 patent.

Additional support that the "second connecting device" is not necessarily limited to any particular embodiment found in the specification is found in the varying ways that a "second connecting device" is recited in the independent claims. For example, independent claim 11 of the '399 patent recites the same language with respect to the second connecting device. Independent claim 17 of the '399 patent recites the step of interfacing a data transmit/receive device with a second connecting device, which is about the same in scope as the second connecting device as recited in claims 1 and 11. These claim elements read on the Casio digital cameras for the same reasons as set forth above with respect to claim 1. However, in another example, independent claims 1 and 17 of the '449 patent recite a "second connecting device for interfacing the interface device with the data transmit/receive device," which is broader than the language in the '399 patent, because it does not recite the sampling circuit or the analog-to-digital converter. Independent claim 18 of the '449 patent recites the step of interfacing a data transmit/receive device with a broadly recited second connecting device, which does not require any particular sampling circuit or analog-to-digital converter. Thus, the way that the claims are drafted also indicates that the recitation of "second connecting device" in the independent claims is not limited to one particular embodiment.

Casio's Interrogatory Response also takes issue with the word "attached." That word appears in the following phrase of claim 1 of the '399 patent: "regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device." The word "attached," for example, is broad enough to cover

removably attached and permanently attached. The same is true in the other claims reciting the word “attached.”

In summary, the independent claims are silent as to whether the data transmit/receive device may be separable or may be part of the interface device. Therefore, whether the image sensors on the Casio digital cameras are separable from the interface device is irrelevant to the issue of infringement. Casio’s digital cameras include a second connecting device as that term is variously defined in the independent claims.

Casio presented no substantive defense on the issue of doctrine of equivalents with respect to the second connecting device, and therefore no refutation is necessary or even possible.

“Data transmit/receive device”

Casio’s Interrogatory Responses next argue that the claims require a data transmit/receive device. The claims neither expressly require, nor prohibit, a permanently attached data transmit/receive device. Instead, the inquiry should be directed to whether the interface portion of a device meets the limitations in the claims for the interface device.

For example, Casio’s Interrogatory Responses state, incorrectly, “No Casio Digital Camera has the required limitation of a ‘data transmit/receive device’ (‘T/R device’) as that term is properly construed.” There are several things wrong with Casio’s argument. For example, there is no limitation in any of the independent claims for a data transmit/receive device. Also, since the data transmit/receive device is not positively recited as a limitation, it need not be “properly construed.” Additionally, the Casio digital cameras include a lens and an image sensor that satisfies any plausible

interpretation of a “data transmit/receive device.” The data transmit/receive device is recited in the preamble:

An interface device for communication between a host device, which comprises drivers for input/output devices customary in a host device and a multi-purpose interface, and a data transmit/receive device, the data transmit/receive device being arranged for providing analog data, comprising:

In construing patent claims, structure recited in the preamble of a claim is generally not considered a limitation of the claim. One generally should look to the body of the claims, which define the structure of the interface device.

Casio’s Interrogatory Response further incorrectly argues: “A T/R device would be understood by a person of ordinary skill in the art to mean a device that transmits and receives information in the same form.” Casio provides no support for this incorrect statement. Moreover, Casio’s argument is directly contrary to examples given in the patents-in-suit. For example, the data transmit/receive devices are described as covering an *entire spectrum* of sensors, and give as the first example an **image-acquisition system**, which is a diagnostic radiology system:

The devices from which data is to be acquired cover the *entire electrical engineering spectrum*. In a typical case, it is assumed that a customer who operates, for example, a *diagnostic radiology system* in a medical engineering environment reports a fault.

In this example, the data transmit/receive device does not receive and transmit information in the same form. The image sensors in Casio’s digital cameras satisfy any plausible construction of a “data transmit/receive device.”

The attempt by Casio to impose improper limitations on the data transmit/receive devices is further refuted by the way that the data transmit/receive devices are recited in different claims. For example, in claim 1 of the ‘399 patent, the data transmit/receive

device is recited as “being arranged for providing analog data.” (Casio’s image sensors provide analog data). However, in claim 1 of the 449 patent, there is no recitation that the data transmit receive device be arranged to provide analog data. The data transmit/receive devices of the ‘449 patent therefore should, for example, be construed more broadly than the data transmit/receive devices of the ‘399 patent, and should be construed that there is no limitation on the form of the data transmitted by such devices.

The various independent claims of the patents in suit have different preambles. However, Casio does not address each claim independently, and therefore a refutation concerning each independent claim is not called for by the present Interrogatory No. 7. Also, Casio presented no substantive defense on the issue of doctrine of equivalents with respect to the data transmit/receive device, and therefore no refutation is necessary or even possible.

“Communication between”

In Casio’s Interrogatory Response concerning “communication between,” Casio improperly states: “The ‘communication between’ limitation is part of every claim of the ‘399 and ‘449 patents. When properly construed, the T/R device and host must have two-way communication, not just data transfer from one to the other.” Casio is wrong for several reasons. For example, the “communications between” language is in the preamble to provide context, and is not a limitation of the claims. For this reason, it need not be construed. Also, even if it were a limitation and were construed, it should be construed to require only those communications expressly recited in the body of the claim. Additionally, Casio’s digital cameras perform the “communications” that are expressly claimed in the independent claims of the patents-in-suit.

Regarding the body of claim 1 of the '399 patent, for example, one form of communication is recited from the host device (e.g., PC) to the interface device (not the data transmit/receive device):

whereupon the **host device communicates with the interface device** by means of the driver for the input/output device customary in a host device, and

The body of claim 1 of the '449 patent, for example, also recites communication between the host device and the interface device, but by way of a driver for a storage device:

whereupon the **host device communicates with the interface device** by means of the driver for the storage device customary in a host device, and

Host devices, such as a PC are believed to communicate with the interface device of a Casio digital camera as recited above. For example, a PC operating Windows XP is believed to communicate with a Casio Exilim Z75 digital camera in USB Mass Storage Mode by means of Microsoft standard software drivers, such as usbstor.sys, disk.sys and PartMgr.sys (disk.sys and PartMgr.sys drivers are also used to communicate with I/O storage devices, such as hard disk drives, and usbstor.sys is used to communicate with hard disk drives attached to a USB port). In another example, a PC operating Windows XP is believed to communicate with a Casio Exilim Z75 digital camera in PTP Mode by means of Microsoft standard software drivers, such as usbscan.sys (the usbscan.sys driver is also used to communicate with imaging devices, such as scanners).

Another aspect of "communication" recited in the body of claim 1 of the '399 patent includes the "second command interpreter" responding to a data request command:

wherein the second command interpreter is configured to interpret a data request command from the host device to the type of input/output device

signaled by the first command interpreter as a data transfer command for initiating a transfer of the digital data to the host device.

The “interface device” was previously recited in claim 1 of the ‘399 patent to include a “second command interpreter.” Also, the transfer of “the digital data” refers to the data that was digitized in the analog-to-digital converter of the “second connecting device,” which is also part of the “interface device.” None of this claim language requires or precludes two-way communication between the data transmit/receive device and the host PC. Instead, claim 3, for example, requires a buffer to buffer data to be transferred from the transmit receive device to the host PC. Thus, claim 1 of the ‘399 patent should be, for example, broad enough to cover this situation, where the host PC does not communicate directly with the data transmit/receive device.

Independent Claim 1 of the ‘449 patent, for example, does not recite all of the communications that are recited in the independent claims of the ‘399 patent. For example, instead of reciting the configuration of a second command interpreter, claim 1 of the ‘449 patent recites a virtual file system:

wherein the interface device is arranged for simulating a virtual file system to the host, the virtual file system including a directory structure.

This claim language does not require communication directly between a data transmit/receive device and the host PC.

Casio presented no substantive defense on the issue of doctrine of equivalents with respect to the “communication between” issue, and therefore no refutation is necessary or even possible. Also, Casio is believed to hold information relevant to this response, which is the subject of pending discovery requests. Papst reserves the right to amend or supplement this response as discovery progresses in this case.

“Configured by the processor and memory”

Casio argues that the command interpreters are “software,” and that: “This software is simply loaded into memory. The Casio processor has nothing to do with that operation.” However, Casio, to date, has not provided documents regarding the software and its use, which is believed to refute Casio’s contentions. For these reasons, Papst objects to responding to this interrogatory as premature, and reserves the right to supplement this response after Casio provides the requested discovery and Papst has reviewed and analyzed the documents.

Notwithstanding the above objection due to Casio’s failure to make discovery, Papst states that Casio’s cameras appear to be configured to include at least first and second command processors. First, Casio’s cameras appear to interpret and respond to USB commands, SCSI commands, and PTP commands. Further discovery from Casio is likely to provide evidence that the portions of the software that interpret USB commands, SCSI commands, and PTP commands are distinct software modules, routines, or objects.

Even if the above command processors comprise “software,” as argued by Casio in its Interrogatory Response, such software 1) would have to be stored somewhere when the camera is shut off (e.g., non-volatile memory, ROM, or a programmable ROM), 2) would have to be loaded into working memory when the camera is operating, and 3) would have to be executed on a processor. Casio admits that the command interpreters reside in software. Software residing on memory, however, without more, generally does not function. It is believed that a processor within the camera executes the software for the first and second command interpreters. In this respect, for example, the memory (which holds the software) and the processor (which executes the software) configure the

interface device to include a first command interpreter and a second command interpreter as claimed.

Casio presented no substantive defense on the issue of doctrine of equivalents with respect to the “configured by the processor and memory” issue, and therefore no refutation is necessary or even possible. Also, Casio is believed to hold information relevant to this response, which is the subject of pending discovery requests. Papst reserves the right to amend or supplement this response as discovery progresses in this case.

“Input/output device customary in a host device, regardless of the device attached”

Casio incorrectly contends, for example: “The Casio camera signals that it is a Casio camera, not a device ‘customary in a host device,’ and it does not provide this information ‘regardless’ of ‘the device attached.’” Casio further incorrectly contends: “As above, Casio cameras never lie to the host computer. Rather, the Casio cameras identify themselves as Casio cameras.” These statements are incorrect because, for example, the claim does not recite “a lie,” moreover, the Casio cameras, when configured in USB Mass Storage Mode, for example, identify themselves as hard disk drives, and when in PTP mode, for example, identify themselves as imaging devices.

For example, a Casio Exilim Z75 Digital Camera is believed to respond to a “Get_Descriptor” USB command from a host PC by returning the requested descriptor(s). For example, the Casio Exilim Z75 Digital Camera, when in USB Mass Storage mode, is believed to return an Interface Descriptor which identifies the Casio Exilim Z75 Digital Camera as having a bInterfaceClass = 0x08, a bInterfaceProtocol = 0x50, and having a bInterfaceSubClass = 0x05. An Interface Descriptor having the above information does

not identify the attached device as a camera having an image sensor. Instead, the Interface Descriptor information given above is believed to signal to the host PC that the Casio Exilim Z75 device is an ATAPI removable rewriteable media device compatible with a SFF-8070i command set. It is further believed that a host PC receiving the above Interface Descriptor information would recognize the Exilim Z75 digital camera as a disk drive. In this regard, the Interface Descriptor believed to be returned by the Casio Exilim Z75 Digital Camera may be said to be a "lie" to the host PC because it signals the host PC that it is a disk drive when the Casio Exilim Z75 Digital Camera is a digital camera. The host PC is believed to accept this "lie," because it loads and communicates with the interface device of the camera by means of Microsoft standard software drivers, such as usbstor.sys, disk.sys and PartMgr.sys. The host PC also uses the disk.sys and PartMgr.sys drivers to communicate with hard disk drives.

In another example, in USB Mass Storage mode, the Casio Exilim Z75 Digital Camera is believed to respond to a SCSI INQUIRY command. The response includes a "peripheral device type" of 0x00. Such a response signals to the host PC that the Casio Exilim Z75 Digital Camera is a "Direct-access device (e.g., magnetic disk)." In this example, the Casio Exilim Z75 Digital Camera could be said to "lie" to the host PC by indicating that it is a magnetic disk, when it is not.

In another example, in PTP mode, a Casio Exilim Z75 Digital Camera is believed to respond to a "Get_Descriptor" USB command from a host PC by returning the requested descriptor(s). For example, the Casio Exilim Z75 Digital Camera, when in PTP mode, is believed to return an Interface Descriptor which identifies the Casio Exilim Z75 Digital Camera as having a bInterfaceClass = 0x06. An Interface Descriptor having

bInterfaceClass = 0x06 is believed to signal to the host PC that the Casio Exilim Z75 is an I/O imaging device such as a scanner. The host PC, in response to this Interface Descriptor, loads and communicates with the interface device of the camera by means of Microsoft standard software drivers, such as usbscan.sys. The host PC believed to use the usbscan.sys driver to communicate with imaging devices such as scanners.

While the above examples are given with respect to one camera, Papst has served an interrogatory on Casio requesting that Casio provide the Interface Descriptor information returned by all of its cameras in this lawsuit. Papst objects to this interrogatory as premature until Casio provides the requested discovery, and Papst has adequately reviewed and analyzed the information.

Casio presented no substantive defense on the issue of doctrine of equivalents with respect to the “input/output device customary in a host device, regardless of the device attached” issue, and therefore no refutation is necessary or even possible. Also, Casio’s Interrogatory Response does not provide any evidence or information as to why it contends that its cameras identify themselves as cameras. For example, Casio does not identify what inquiries are made by the host PC, nor does Casio describe precisely what responses are made by any particular digital camera which would indicate that the attached device is a digital camera. If and when Casio amends this response or provides such information or contentions, Papst reserves the right to amend or supplement this response with further rebuttal.

“Virtual file system”

Casio incorrectly contends in Casio’s Interrogatory Responses that “In the Casio cameras, the computer directly accesses a real file system. The system is not ‘virtual’ in

any sense of the word.” Casio is wrong, for example, because the Casio Exilim Z75 Digital Camera, and its file system, simulates the existence of sectors, read/write heads (also known as tracks), and cylinders, even though flash memory cards do not have any physical “sectors,” “heads,” or “cylinders.” This is an example of virtualization of the file system. Also, CHS addressing (Cylinder, Head, Sector) is a form of addressing that was used in the earliest IDE hard disk drives. The fact that the Casio digital cameras provide such addressing information indicates a virtualization of the old CHS addressing scheme. This is another example of how the file system used in the Casio cameras is virtual.

At pages 15-16, Casio’s Interrogatory Responses respond to Papst’s interrogatory seeking Casio’s invalidity defenses. However, Casio responded only by making objections, and did not provide any substantive invalidity defenses. Accordingly, there is nothing for Papst to refute with respect to Casio’s purported defenses concerning the validity of the patents-in-suit. Papst reserves the right to amend or supplement this response in the event that Casio articulates defenses concerning the validity and/or enforceability of the patents-in-suit. Papst also states that 35 U.S.C. §282 provides a presumption that the patents-in-suit are valid, and that the burden for establishing invalidity rests on the party asserting invalidity.

Casio makes certain non-infringement arguments in Casio’s Supplemental Interrogatory Responses. Papst incorporates by reference the above refutation of Casio’s arguments concerning “Interface Device,” “Data transmit/receive device,” “Communication between,” “Configured by the processor and memory,” “Input/output

device customary in a host device, regardless of the device attached,” and “Virtual file system.” Papst provides additional rebuttal below.

On page 10 of Casio’s Supplemental Interrogatory Responses, Casio mistakenly argues that its cameras “have nothing to do with any ‘customary’ drivers for hard disks . . .” Also, on page 15, Casio misconstrues the claim language “by means of the driver for the input output device customary in a host device.” The claims do not recite “customary drivers.” Instead, it is the input/output device that is customary in a host device (e.g., claim 1 of the ‘399 patent), or a storage device that is customary in a host device (e.g. claim 1 of the ‘449 patent).

Casio’s digital cameras signal to a host PC that the cameras are input/output devices customary in a host device, and/or are storage devices customary in a host device. For example, a Casio Exilim Z75 Digital Camera is believed to respond to a "Get_Descriptor" USB command from a host PC by returning the requested descriptor(s). For example, the Casio Exilim Z75 Digital Camera, when in USB Mass Storage mode, is believed to return an Interface Descriptor which identifies the Casio Exilim Z75 Digital Camera as having a bInterfaceClass = 0x08, a bInterfaceProtocol = 0x50, and having a bInterfaceSubClass = 0x05. The Interface Descriptor information given above is believed to signal to the host PC that the Casio Exilim Z75 device is an ATAPI removable rewriteable media device compatible with a SFF-8070i command set. It is further believed that a host PC receiving the above Interface Descriptor information would recognize the Exilim Z75 digital camera as a disk drive, which is an input/output device customary in a host device, and which is a storage device customary in a host device. The host PC loads and communicates with the interface device of the camera by

means of Microsoft standard software drivers, such as usbstor.sys, disk.sys and PartMgr.sys. The host PC also uses the disk.sys and PartMgr.sys drivers to communicate with hard disk drives. That is, disk.sys and PartMgr.sys are drivers for input/output devices customary in host devices and storage devices customary in a host devices.

On pages 15-16, Casio's Supplemental Interrogatory Responses make an argument concerning the "second command interpreter" and "receiving a data request command" from a host computer. In USB Mass Storage mode, the Casio Exilim Z75 Digital Camera is believed to respond to, for example, a SCSI READ(10) command by transferring one or more requested sectors as specified by the READ(10) command. It is further believed that the Casio Exilim Z75 Digital Camera will transfer to a host computer digital data representing images acquired by an image sensor and associated components in response to the READ(10) command. The READ(10) command is, for example, a standard data request command that a host PC may send to a hard disk drive.

In another example, in USB Mass Storage mode, the Casio Exilim Z75 Digital Camera is believed to respond to a SCSI INQUIRY command. The response includes a "peripheral device type" of 0x00. Such a response signals to the host PC that the Casio Exilim Z75 Digital Camera is a "Direct-access device (e.g., magnetic disk)." The response to the INQUIRY command signals to a host PC that the camera is a magnetic disk, which is a storage device customary in a host device.

On page 13-14, Casio's Supplementary Interrogatory Responses make an argument concerning "a distinct first command interpreter and a distinct second command interpreter." Casio's use of the word "distinct" is vague and ambiguous, in that

it is unknown what Casio means by inserting this word into the claim language. Papst responds, for example, that the claims do not use the word “distinct.”

Section 112 and “customary”

Casio’s Supplemental Interrogatory Responses erroneously argues for the invalidity of the claims reciting the term “customary.” Casio does not identify what paragraph of Section 112 Casio purportedly relies upon for its argument.

Referring to claim 1 of the ‘399 patent, the meaning of the phrase “an input/output device customary in a host device” may be understood, for example, by referring to the ‘399 patent, for example, at column 4, lines 23-39, column 4, line 60 to column 5, line 32, column 8, lines 43-67, and column 12, lines 23-40. Input/output devices customary in a host device include, for example, hard disk drives (e.g. column 8, lines 1-11), floppy disk drives, CD –ROM drives, or tape drives (e.g., column 4, lines 23-39) or printers (e.g., column 9, lines 38-48). Similar disclosures may be referred to for an understanding of the phrase “a storage device customary in a host device,” as that phrase is used in the claims of the ‘449 patent.

U.S. Patent No. 6,088,532

Casio’s Supplemental Interrogatory Responses erroneously contends that the ‘399 patent and the ‘449 patent are invalid as being anticipated by U.S. Patent No. 6,088,532. Casio’s Supplemental Interrogatory Responses, however, only provide contentions with regard to claim 1 of each patent. Papst objects to providing any response regarding

claims not specifically addressed in Casio's Supplemental Interrogatory Responses, because no "defense" was articulated by Casio regarding those claims.

Claim 1 of the '399 patent recites, in part,

wherein the interface device is configured by the processor and the memory to include a first command interpreter and a second command interpreter,

wherein the first command interpreter is configured in such a way that the command interpreter, when receiving an inquiry from the host device as to a type of a device attached to the multi-purpose interface of the host device, sends a signal, regardless of the type of the data transmit/receive device attached to the second connecting device of the interface device, to the host device which signals to the host device that it is an input/output device customary in a host device,

* * *

wherein the second command interpreter is configured to interpret a data request command from the host device to the type of input/output device signaled by the first command interpreter as a data transfer command for initiating a transfer of the digital data to the host device.

There is no disclosure, for example, of such first and second command interpreters in the '532 patent, nor is there any disclosure that the interface is configured by the processor and the memory to include a first command interpreter and a second command interpreter. Additionally, contrary to Casio's erroneous contentions, there is no disclosure in the '532 patent that a "'send command interpreter' is adapted to cause the microprocessor to interpret a data request from command from a PC."

Casio's Interrogatory Response incorrectly asserts that an "instruction set is programmed" into an "on-chip memory." However, there is no mention of an "instruction set," nor any mention of any instructions being programmed into an on-chip memory, in the '532 patent. Casio's contentions regarding any "data stored in the on-chip memory" or "instruction set stored in the on-chip memory" are not supported by the

'532 patent. The "defenses" articulated in Casio's Supplemental Interrogatory Responses with respect to both the '399 and '449 patents, are deficient for this additional reason.

Claim 1 of the '449 patent recites, in part, "wherein the interface device is arranged for simulating a virtual file system to the host, the virtual file system including a directory structure." There is no disclosure in the '532 patent corresponding to this claim element. For example, there is no explanation or description of any file system or directory structure discussed in the '532 patent. Also, as set forth above, there is no mention of an "instruction set," nor any mention of any instructions being programmed into an on-chip memory, in the '532 patent, so Casio's contentions regarding a virtual file system are unsupported.

Casio's QV-10 camera

Casio's Supplemental Interrogatory Responses erroneously contends that the '399 patent and the '449 patent are invalid as being anticipated by Casio's QV-10 camera. Casio's Supplemental Interrogatory Responses, however, only provide contentions with regard to claim 1 of each patent. Papst objects to providing any response regarding claims not specifically addressed in Casio's Supplemental Interrogatory Responses, because no "defense" was articulated by Casio regarding those claims.

Papst further objects that while Casio purportedly bases this defense on a QV-10 camera, Casio has not yet provided such a camera in discovery in this case, and Papst has not had an opportunity to inspect or test such a device. Papst reserves the right to amend or supplement this interrogatory response until such time as it has completed its investigation and analysis of an actual QV-10 camera. Also, Papst objects that Casio's

Supplemental Interrogatory Response cites to pages of a “QV-LINK Owner’s manual,” yet Casio does not provide any reference to any production numbers where such a document may be found. Papst bases the current response on the user manual provided by Casio at CAP-010511 – CAP-010533, the pages produced by Casio and identified in Casio’s Supplemental Interrogatory Response.

The claims of the ‘399 and ‘449 patents are not invalidated by the Casio QV-10 because, for example, there is no support in the documents provided by Casio in discovery to support Casio’s contentions that “An instruction set is programmed into the memory of the QV-10 camera,” or that “a portion of the instruction set forms a ‘first command interpreter’ and a ‘second command interpreter.’” Also, there is nothing in the user manual for the Casio QV-10 which would indicate that it would to satisfy the limitation that a first command interpreter signals to the host device that it is an input/output device customary in a host device, or that it is a storage device customary in a host device. Instead, the manual for the QV-10 (and Casio’s description of the QV-LINK software) indicates that the QV-10 does not signal that it is an input/output device, or a storage device, customary in a host device. Additionally, there is nothing in the user manual for the Casio QV-10 which would indicate that a host PC would communicate with any part of the QV-10 by means of a driver for an input/output device customary in a host device, or by means of a driver for a storage device customary in a host device. Instead, according to Casio’s description, it would appear that “QV-LINK driver software” is necessary for a host PC to be able to communicate with the QV-10 camera. Also, there is no description in the user manual for the QV-10 camera concerning any file system, virtual or otherwise.

Kodak DCS 200 camera

Casio's Supplemental Interrogatory Responses erroneously contends that the '399 patent and the '449 patent are invalid as being anticipated by a Kodak DCS 200 camera. Casio's Supplemental Interrogatory Responses, however, only provide contentions with regard to claim 1 of each patent. Papst objects to providing any response regarding claims not specifically addressed in Casio's Supplemental Interrogatory Responses, because no "defense" was articulated by Casio regarding those claims.

Papst further objects that while Casio purportedly bases this defense on a DCS-200 camera, Casio has not yet provided such a camera in discovery in this case, and Papst has not had an opportunity to inspect or test such a device. Papst reserves the right to amend or supplement this interrogatory response until such time as it has completed its investigation and analysis of an actual DCS-200 camera. Papst bases the current response on the pages identified in Casio's Supplemental Interrogatory Response, i.e., CAP-22804-05.

The claims of the '399 and '449 patents are not invalidated by the Kodak DCS-200 camera because, for example, there is no support in the documents provided by Casio in discovery to support Casio's contentions that "An instruction set is inherently programmed into the on-chip memory of the DCS200 camera," or that "a portion of the instruction set forms a 'first command interpreter' and a 'second command interpreter.'" Also, there is nothing in documents for the Kodak DSC-200 camera provided by Casio in discovery which would indicate that it would to satisfy the limitation that a first command interpreter signals to the host device that it is an input/output device customary in a host device, or that it is a storage device customary in a host device. Instead, Casio's

description of the Kodak DCS-200 camera indicates that it does not signal that it is an input/output device, or a storage device, customary in a host device. Additionally, according to Casio's description, a host PC would not communicate with any part of the Kodak DCS-200 by means of a driver for an input/output device customary in a host device, or by means of a driver for a storage device customary in a host device. Instead, according to Casio's description, the DCS-200 "needs a software driver to retrieve images stored in the camera's memory."

AS TO OBJECTIONS:

Dated: April 18, 2008

/s/ Joseph E. Cwik
James P. White
Jerold B. Schnayer
Joseph E. Cwik
WELSH & KATZ, LTD.
120 South Riverside Plaza • 22nd Floor
Chicago, Illinois 60606
(312) 655-1500

Robert F. Muse
Joshua A. Levy
Kerry C. Dent
STEIN MITCHELL & MEZINES, LLP
1100 Connecticut Ave, NW
Washington, D.C. 20036
(202) 737-7777
**Attorneys for Defendant/Counter-
Plaintiff Papst Licensing GmbH & Co.
KG**

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing PAPST'S OBJECTIONS AND SUPPLEMENTAL ANSWERS TO CASIO INC.'S INTERROGATORY NO. 7 was served on this the 18th day of April, 2008 upon the attorneys for the Defendants as follows:

For The Casio Parties (via e-mail):

Laura Krawczyk
Kevin He
Morgan Lewis & Bockius
101 Park Avenue
New York, NY 10178-0060
Phone: (212) 309-6000
Fax: (212) 309-6001
lkrawczyk@morganlewis.com
khe@morganlewis.com

J. Kevin Fee
MORGAN, LEWIS & BOCKIUS LLP
1111 Pennsylvania Avenue, NW
Washington, D.C. 20004
jkfee@morganlewis.com

Scott D. Stimpson
The Law Office of Scott Stimpson
Suite 1102
445 Hamilton Avenue
White Plains, NY 10601
stimpsonlaw@gmail.com

For The Samsung Parties (via e-mail):

Patrick J. Kelleher
Drinker Biddle Gardner Carton
191 North Wacker Drive
Suite 3700
Chicago, IL 60606-1698
Phone: (312) 569-1375
Fax: (312) 569-3375
Patrick.kelleher@abr.com

For The Fujifilm Parties (via e-mail):

Steven J. Routh
Hogan & Hartson, LLP

555 Thirteenth Street, N.W.
Washington, DC 20004
Phone: (202) 637-5600
Fax: (202) 637-5910
sjrouth@hhlaw.com

For the Olympus Parties (via e-mail):

Richard de Bodo
Rachel M. Capoccia
Hogan & Hartson, LLP
1999 Avenue of the Stars
Suite 1400
Los Angeles, CA 90067
Phone: (310) 785-4694
Fax: (310) 785-4601
rdebodo@hhlaw.com
rmcapoccia@hhlaw.com

For The Matsushita and Victory Company of Japan Parties (via e-mail):

Richard de Bodo
Rachel M. Capoccia
Hogan & Hartson, LLP
1999 Avenue of the Stars
Suite 1400
Los Angeles, CA 90067
Phone: (310) 785-4694
Fax: (310) 785-4601
rdebodo@hhlaw.com
rmcapoccia@hhlaw.com

For the Ricoh Parties (via e-mail):

Paul Devinsky
MCDERMOTT, WILL & EMERY
600 13th Street, NW
Washington, DC 20005-3096
(202) 756-8369
Fax: (202) 756-8087
Email: pdevinsky@mwe.com

For Hewlett-Packard Company (via email):

Charlene M. Morrow
Heather N. Mewes
Fenwick & West LLP

555 California Street, Suite 1200
San Francisco, CA 94104
Phone: (415) 875-2300
Fax: (415) 281-1350
cmorrow@fenwick.com
hmewes@fenwick.com

/s/ Joseph E. Cwik
Attorney for Papst Licensing GmbH & Co.
KG

EXHIBIT U



263 Fed.Appx. 885

Page 1

263 Fed.Appx. 885, 2008 WL 343253 (C.A.Fed. (Del.))

(Cite as: 263 Fed.Appx. 885, 2008 WL 343253 (C.A.Fed. (Del.)))

Hampex Corp. v. Eastman Kodak Co.

C.A.Fed. (Del.),2008.

This case was not selected for publication in the Federal Reporter. Not for Publication in West's Federal Reporter See Fed. Rule of Appellate Procedure 32.1 generally governing citation of judicial decisions issued on or after Jan. 1, 2007. See also Federal Circuit Rule 32.1 and Federal Circuit Local Rule 32.1. (Find CTAF Rule 32.1)

United States Court of Appeals, Federal Circuit.

AMPEX CORPORATION, Plaintiff-Appellant,
v.

EASTMAN KODAK COMPANY, Chinon
Industries, Inc., and Altek Corporation, Defendants-
Appellees.

No. 2007-1089.

Feb. 7, 2008.

On Appeal from the United States District Court for
the District of Delaware, No. 04-CV-1373, Judge
[Kent A. Jordan](#).

[Jesse J. Jenner](#), Ropes & Gray LLP, of New York,
New York, argued for plaintiff-appellant. With him
on the brief were [Norman H. Beamer](#), of Palo Alto,
California, and James E. Hopenfled, of Washington,
DC. Of counsel was [Karen A. Christiansen](#), of Palo
Alto, California.

[Michael J. Summersgill](#), Wilmer Cutler Pickering
Hale and Dorr LLP, of Boston, Massachusetts,
argued for defendants-appellees. With him on the
brief were [William F. Lee](#), [Donald R. Steinberg](#),
[Lauren B. Fletcher](#), and [Jordan L. Hirsch](#), of Boston,
Massachusetts, and S. Calvin Walden, of New York,
New York.

Before [MAYER](#), [DYK](#) and [MOORE](#), Circuit Judges.

Judgment

PER CURIAM:

*1 This CAUSE having been heard and considered, it
is ORDERED and ADJUDGED:

AFFIRMED. See [Fed. Cir. R. 36](#).

C.A.Fed. (Del.),2008.

Ampex Corp. v. Eastman Kodak Co.

263 Fed.Appx. 885, 2008 WL 343253 (C.A.Fed.
(Del.))

END OF DOCUMENT

EXHIBIT V



ANSI X3.131-1994

American National Standard

*for Information Systems –
Small Computer System
Interface-2*

**American National Standards Institute**

11 West 42nd Street
New York, New York
10036

Exhibit V
Page 1 of 12

ANSI®
X3.131-1994

American National Standard
for Information Systems –
Small Computer System Interface-2

Secretariat

Computer and Business Equipment Manufacturers Association

Approved January 31, 1994

American National Standards Institute, Inc.

Abstract

The SCSI protocol is designed to provide an efficient peer-to-peer I/O bus with up to 16 devices, including one or more hosts. Data may be transferred asynchronously at rates that only depend on device implementation and cable length. Synchronous data transfers are supported at rates up to 10 mega-transfers per second. With the 32-bit wide data transfer option, data rates of up to 40 megabytes per second are possible.

SCSI-2 includes command sets for magnetic and optical disks, tapes, printers, processors, CD-ROMs, scanners, medium changers, and communications devices.

American National Standard

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

CAUTION: The developers of this standard have requested that holders of patents that may be required for the implementation of the standard disclose such patents to the publisher. However, neither the developers nor the publisher have undertaken a patent search in order to identify which, if any, patents may apply to this standard.

As of the date of publication of this standard and following calls for the identification of patents that may be required for the implementation of the standard, no such claims have been made. No further patent search is conducted by the developer or publisher in respect to any standard it processes. No representation is made or implied that licenses are not required to avoid infringement in the use of this standard.

Published by

American National Standards Institute
11 West 42nd Street, New York, New York 10036

Copyright ©1994 by American National Standards Institute
All rights reserved.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without prior written permission of the publisher.

Printed in the United States of America

APS1M894/125

ANSI X3.131-1994

8 All device types

8.1 Model for all device types

This model describes some of the general characteristics expected of most SCSI devices. It is not intended to define any requirements nor is it intended to alter any requirements defined elsewhere in this standard. Clause 7 also contains model information pertaining to all device types.

8.1.1 SCSI addresses

There are two levels of addresses within the SCSI architecture: the SCSI device address and the logical unit number or target routine number.

8.1.1.1 SCSI device address

SCSI devices occupy (i.e. respond to) one address on the SCSI bus. Generally, the SCSI device provides a means (e.g. switches, jumpers) to select one of the eight available addresses (0 through 7). This address is used during bus arbitration and selection or reselection of SCSI devices. Each device on the SCSI bus is assigned a unique address.

Normally, the SCSI device address is set when the system is configured and it remains static thereafter. Some systems and devices provide vendor-specific means to alter this address at other times.

8.1.1.2 Logical units

Each target has one or more logical units, beginning with logical unit zero. There is a maximum of eight logical units. These logical units are usually mapped directly to peripheral devices, but they may be a portion of a peripheral device or may comprise multiple peripheral devices.

An initiator can determine whether a target implements a logical unit by issuing an INQUIRY command and examining the returned peripheral qualifier and peripheral device type.

The concept of a logical unit is not defined for an initiator. (An SCSI device may implement both the initiator role and the target role. In this case logical unit(s) are defined only for the target role.)

8.1.1.3 Target routines

An optional feature of the SCSI architecture permits each target to have one or more target routines, beginning with target routine number zero. There is a maximum of eight target routines. These target routines are processes that execute directly on the target and are not associated with a particular logical unit or peripheral device. Target routines are addressed using the LUNTAR bit of the IDENTIFY message (see 6.6.7).

Target routines are principally intended to return information about the target and the only valid commands are INQUIRY and REQUEST SENSE.

8.1.2 Commands implemented by all SCSI devices

This standard defines four commands that all SCSI-2 targets implement - INQUIRY, REQUEST SENSE, SEND DIAGNOSTIC, and TEST UNIT READY. These commands are used to configure the system, to test targets, and to return important information concerning errors and exception conditions.

8.1.2.1 Using the INQUIRY command

The INQUIRY command may be used by a system to determine the configuration of the SCSI bus. Target devices respond with information that includes their type and standard level and may include the vendor's identification, model number and other useful information. It is recommended that SCSI targets be capable of returning this information (or whatever part of it that is available) upon completing power-on initialization. An SCSI device may take longer to get certain portions of this information, especially if it retrieves the information from the medium.

8.1.2.2 Using the REQUEST SENSE command

Whenever a contingent allegiance condition (see 7.6) is established, the initiator that received the error should issue a REQUEST SENSE command to receive the sense data describing what caused the contingent allegiance condition. If the initiator issues some other command, the sense data is lost.

8.1.2.3 Using the SEND DIAGNOSTIC command

The SEND DIAGNOSTIC command provides a means to request the target to perform a self test. While the test is target specific, the means of requesting the test is standardized and the response is simply GOOD status if all is well or CHECK CONDITION status if the test fails.

The SEND DIAGNOSTIC command also provides other powerful features when used in conjunction with the RECEIVE DIAGNOSTIC RESULTS command, but this capability is optional.

8.1.2.4 Using the TEST UNIT READY command

The TEST UNIT READY command is useful in that it allows an initiator to poll a logical unit until it is ready without the need to allocate space for returned data. It is especially useful to check cartridge status of logical units with removable media. Targets are expected to respond promptly to indicate the current status of the device (i.e. a target should avoid lengthy disconnections in an attempt to respond with GOOD status).

8.2 Commands for all device types

The operation codes for commands that apply to all device types are listed in table 31.

Table 31 - Commands for all device types

Command name	Operation code	Type	Subclause
CHANGE DEFINITION	40h	O	8.2.1
COMPARE	39h	O	8.2.2
COPY	18h	O	8.2.3
COPY AND VERIFY	3Ah	O	8.2.4
INQUIRY	12h	M	8.2.5
LOG SELECT	4Ch	O	8.2.6
LOG SENSE	4Dh	O	8.2.7
MODE SELECT(6)	15h	Z	8.2.8
MODE SELECT(10)	55h	Z	8.2.9
MODE SENSE(6)	1Ah	Z	8.2.10
MODE SENSE(10)	5Ah	Z	8.2.11
READ BUFFER	3Ch	O	8.2.12
RECEIVE DIAGNOSTIC RESULTS	1Ch	O	8.2.13
REQUEST SENSE	03h	M	8.2.14
SEND DIAGNOSTIC	1Dh	M	8.2.15
TEST UNIT READY	00h	M	8.2.16
WRITE BUFFER	3Bh	O	8.2.17
Key: M = Command implementation is mandatory. O = Command implementation is optional. Z = Command implementation is device type specific.			

ANSI X3.131-1994

CONDITION status with the sense key set to MISCOMPARE. The remaining fields in the sense data shall be set as documented in the COPY command.

8.2.5 INQUIRY command

The INQUIRY command (see table 44) requests that information regarding parameters of the target and its attached peripheral device(s) be sent to the initiator. An option allows the initiator to request additional information about the target or logical unit (see 8.2.5.2).

Table 44 - INQUIRY command

Bit Byte	7	6	5	4	3	2	1	0
0	Operation code (12h)							
1	Logical unit number			Reserved				EVPD
2	Page code							
3	Reserved							
4	Allocation length							
5	Control							

An enable vital product data (EVPD) bit of one specifies that the target shall return the optional vital product data specified by the page code field. If the target does not support vital product data and this bit is set to one, the target shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and an additional sense code of INVALID FIELD IN CDB.

An EVPD bit of zero specifies that the target shall return the standard INQUIRY data. If the page code field is not zero, the target shall return CHECK CONDITION status with the sense key set to ILLEGAL REQUEST and an additional sense code of INVALID FIELD IN CDB.

The page code field specifies which page of vital product data information the target shall return (see 8.3.4).

The INQUIRY command shall return CHECK CONDITION status only when the target cannot return the requested INQUIRY data.

NOTE 64 The INQUIRY data should be returned even though the peripheral device may not be ready for other commands.

If an INQUIRY command is received from an initiator with a pending unit attention condition (i.e. before the target reports CHECK CONDITION status), the target shall perform the INQUIRY command and shall not clear the unit attention condition (see 7.9).

NOTES

65 The INQUIRY command is typically used by the initiator after a reset or power-up condition to determine the device types for system configuration. To minimize delays after a reset or power-up condition, the standard INQUIRY data should be available without incurring any media access delays. If the target does store some of the INQUIRY data on the device, it may return zeros or ASCII spaces (20h) in those fields until the data is available from the device.

66 The INQUIRY data may change as the target executes its initialization sequence or in response to a CHANGE DEFINITION command. For example, the target may contain a minimum command set in its non-volatile memory and may load its final firmware from the device when it becomes ready. After it has loaded the firmware, it may support more options and therefore return different supported options information in the INQUIRY data.

8.2.5.1 Standard INQUIRY data

The standard INQUIRY data (see table 45) contains 36 required bytes, followed by a variable number of vendor-specific parameters. Bytes 56 through 95, if returned, are reserved for future standardization.

Table 45 - Standard INQUIRY data format

Bit Byte	7	6	5	4	3	2	1	0
0	Peripheral qualifier			Peripheral device type				
1	RMB	Device-type modifier						
2	ISO version		ECMA version			ANSI-approved version		
3	AENC	TrmIOP	Reserved		Response data format			
4	Additional length (n-4)							
5	Reserved							
6	Reserved							
7	RelAdr	WBus32	WBus16	Sync	Linked	Reserved	CmdQue	SftRe
8	(MSB)							
15	Vendor identification							
	(LSB)							
16	(MSB)							
31	Product identification							
	(LSB)							
32	(MSB)							
35	Product revision level							
	(LSB)							
36	Vendor-specific							
55								
56	Reserved							
95								
	Vendor-specific parameters							
96	Vendor-specific							
n								

The peripheral qualifier and peripheral device-type fields identify the device currently connected to the logical unit. If the target is not capable of supporting a device on this logical unit, this field shall be set to 7Fh (peripheral qualifier set to 011b and peripheral device type set to 1Fh). The peripheral qualifier is defined in table 46 and the peripheral device type is defined in table 47.

Table 46 - Peripheral qualifier

Qualifier	Description
000b	The specified peripheral device type is currently connected to this logical unit. If the target cannot determine whether or not a physical device is currently connected, it shall also use this peripheral qualifier when returning the INQUIRY data. This peripheral qualifier does not mean that the device is ready for access by the initiator.
001b	The target is capable of supporting the specified peripheral device type on this logical unit; however, the physical device is not currently connected to this logical unit.
010b	Reserved
011b	The target is not capable of supporting a physical device on this logical unit. For this peripheral qualifier the peripheral device type shall be set to 1Fh to provide compatibility with previous versions of SCSI. All other peripheral device type values are reserved for this peripheral qualifier.
1XXb	Vendor-specific

Table 47 - Peripheral device type

Code	Description
00h	Direct-access device (e.g. magnetic disk)
01h	Sequential-access device (e.g. magnetic tape)
02h	Printer device
03h	Processor device
04h	Write-once device (e.g. some optical disks)
05h	CD-ROM device
06h	Scanner device
07h	Optical memory device (e.g. some optical disks)
08h	Medium changer device (e.g. jukeboxes)
09h	Communications device
0Ah - 0Bh	Defined by ASC IT8 (Graphic arts pre-press devices)
0Ch - 1Eh	Reserved
1Fh	Unknown or no device type

A removable medium (RMB) bit of zero indicates that the medium is not removable. A RMB bit of one indicates that the medium is removable.

The device-type modifier field was defined in SCSI-1 to permit vendor-specific qualification codes of the device type. This field is retained for compatibility with SCSI-1. Targets that do not support this field should return a value of zero.

The usage of non-zero code values in the ISO version and ECMA version fields are defined by the International Organization for Standardization and the European Computer Manufacturers Association, respectively. A zero code value in these fields shall indicate that the target does not claim compliance to the ISO version of SCSI (ISO 9316) or the ECMA version of SCSI (ECMA-111). It is possible to claim compliance to more than one of these SCSI standards.

The ANSI-approved version field indicates the implemented version of this standard and is defined in table 48.

Table 48 - ANSI-approved version

Code	Description
0h	The device might or might not comply to an ANSI-approved standard.
1h	The device complies to ANSI X3.131-1986 (SCSI-1).
2h	The device complies to this version of SCSI. This code is reserved to designate this standard upon approval by ANSI.
3h - 7h	Reserved

The asynchronous event notification capability (AENC) bit indicates that the device supports the asynchronous event notification capability as defined in 7.5.5.

- a) Processor device-type definition: An AENC bit of one indicates that the processor device is capable of accepting asynchronous event notifications. An AENC bit of zero indicates that the processor device does not support asynchronous event notifications.
- b) All other device-types: This bit is reserved.

A terminate I/O process (TrmIOP) bit of one indicates that the device supports the TERMINATE I/O PROCESS message as defined in 6.6.22. A value of zero indicates that the device does not support the TERMINATE I/O PROCESS message.

A response data format value of zero indicates the INQUIRY data format is as specified in SCSI-1. A response data format value of one indicates compatibility with some products that were designed prior to the development of this standard (i.e. CCS). A response data format value of two indicates that the data shall be in the format specified in this standard. Response data format values greater than two are reserved.

The additional length field shall specify the length in bytes of the parameters. If the allocation length of the command descriptor block is too small to transfer all of the parameters, the additional length shall not be adjusted to reflect the truncation.

A relative addressing (RelAdr) bit of one indicates that the device supports the relative addressing mode for this logical unit. If this bit is set to one, the linked command (Linked) bit shall also be set to one; since relative addressing can only be used with linked commands. A RelAdr bit of zero indicates the device does not support relative addressing for this logical unit.

A wide bus 32 (Wbus32) bit of one indicates that the device supports 32-bit wide data transfers. A value of zero indicates that the device does not support 32-bit wide data transfers.

A wide bus 16 (Wbus16) bit of one indicates that the device supports 16-bit wide data transfers. A value of zero indicates that the device does not support 16-bit wide data transfers.

NOTE 67 If the values of both the Wbus16 and Wbus32 bits are zero, the device only supports 8-bit wide data transfers.

A synchronous transfer (Sync) bit of one indicates that the device supports synchronous data transfer. A value of zero indicates the device does not support synchronous data transfer.

A linked command (Linked) bit of one indicates that the device supports linked commands for this logical unit. A value of zero indicates the device does not support linked commands for this logical unit.

A command queuing (CmdQue) bit of one indicates that the device supports tagged command queuing for this logical unit. A value of zero indicates the device does not support tagged command queuing for this logical unit.

A soft reset (SftRe) bit of zero indicates that the device responds to the RESET condition with the hard RESET alternative (see 6.2.2.1). A SftRe bit of one indicates that the device responds to the RESET condition with the soft RESET alternative (see 6.2.2.2).

ANSI X3.131-1994

ASCII data fields shall contain only graphic codes (i.e. code values 20h through 7Eh). Left-aligned fields shall place any unused bytes at the end of the field (highest offset) and the unused bytes shall be filled with space characters (20h). Right-aligned fields shall place any unused bytes at the start of the field (lowest offset) and the unused bytes shall be filled with space characters (20h).

The vendor identification field contains eight bytes of ASCII data identifying the vendor of the product. The data shall be left aligned within this field.

NOTE 68 It is intended that this field provide a unique vendor identification of the manufacturer of the SCSI device. In the absence of a formal registration procedure, X3T10 maintains a list of vendor identification codes in use. Vendors are requested to voluntarily submit their identification codes to X3T10 to prevent duplication of codes (see annex E).

The product identification field contains sixteen bytes of ASCII data as defined by the vendor. The data shall be left-aligned within this field.

The product revision level field contains four bytes of ASCII data as defined by the vendor. The data shall be left-aligned within this field.

8.2.5.2 Vital product data

Implementation of vital product data is optional. The information returned consists of configuration data (e.g. vendor identification, product identification, model, serial number), manufacturing data (e.g. plant and date of manufacture), field replaceable unit data and other vendor- or device-specific data.

The initiator requests the vital product data information by setting the EVPD bit to one and specifying the page code of the desired vital product data (see 8.3.4). If the target does not implement the requested page it shall return CHECK CONDITION status. The a sense key shall be set to ILLEGAL REQUEST and the additional sense code shall be set to INVALID FIELD IN CDB.

NOTES

69 The target should have the ability to execute the INQUIRY command even when a device error occurs that prohibits normal command execution. In such a case, CHECK CONDITION status should be returned for commands other than INQUIRY or REQUEST SENSE. The sense data returned may contain the field replaceable unit code. The vital product data should be obtained for the failing device using the INQUIRY command.

70 This standard defines a format that allows device-independent initiator software to display the vital product data returned by the INQUIRY command. For example, the initiator may display the data associated for the field replaceable unit returned in the sense data. The contents of the data may be vendor-specific; therefore, it may not be usable without detailed information about the device.

71 This standard does not define the location or method of storing the vital product data. The retrieval of the data may require completion of initialization operations within the device that may induce delays before the data is available to the initiator. Time-critical requirements are an implementation consideration and are not addressed in this standard.

ANSI X3.131-1994

A DevOfL bit of one grants permission to the target to perform diagnostic operations that may affect all the logical units on a target, e.g. alteration of reservations, log parameters, or sense data. The implementation of the DevOfL bit is optional. A DevOfL bit of zero prohibits diagnostic operations that may be detected by subsequent I/O processes.

The parameter list length field specifies the length in bytes of the parameter list that shall be transferred from the initiator to the target. A parameter list length of zero indicates that no data shall be transferred. This condition shall not be considered an error. If the specified parameter list length results in the truncation of one or more pages (PF bit set to one) the target shall return CHECK CONDITION status with a sense key of ILLEGAL REQUEST and an additional sense code of INVALID FIELD IN CDB.

See note 83 under the RECEIVE DIAGNOSTIC RESULTS command in 8.2.13.

8.2.16 TEST UNIT READY command

The TEST UNIT READY command (see table 73) provides a means to check if the logical unit is ready. This is not a request for a self-test. If the logical unit would accept an appropriate medium-access command without returning CHECK CONDITION status, this command shall return a GOOD status. If the logical unit cannot become operational or is in a state such that an initiator action (e.g. START UNIT command) is required to make the unit ready, the target shall return CHECK CONDITION status with a sense key of NOT READY.

Table 73 - TEST UNIT READY command

Bit Byte	7	6	5	4	3	2	1	0
0	Operation code (00h)							
1	Logical unit number			Reserved				
2	Reserved							
3	Reserved							
4	Reserved							
5	Control							

Table 74 defines the preferred responses to the TEST UNIT READY command. Higher-priority responses (e.g. BUSY or RESERVATION CONFLICT) are also permitted.

Table 74 - Preferred TEST UNIT READY responses

Status	Sense key	ASC and ASCQ
GOOD	NO SENSE	NO ADDITIONAL SENSE INFORMATION or other valid additional sense code.
CHECK CONDITION	ILLEGAL REQUEST	LOGICAL UNIT NOT SUPPORTED
CHECK CONDITION	NOT READY	LOGICAL UNIT DOES NOT RESPOND TO SELECTION
CHECK CONDITION	NOT READY	MEDIUM NOT PRESENT
CHECK CONDITION	NOT READY	LOGICAL UNIT NOT READY, CAUSE NOT REPORTABLE
CHECK CONDITION	NOT READY	LOGICAL UNIT IS IN PROCESS OF BECOMING READY
CHECK CONDITION	NOT READY	LOGICAL UNIT NOT READY, INITIALIZING COMMAND REQUIRED
CHECK CONDITION	NOT READY	LOGICAL UNIT NOT READY, MANUAL INTERVENTION REQUIRED
CHECK CONDITION	NOT READY	LOGICAL UNIT NOT READY, FORMAT IN PROGRESS

8.2.17 WRITE BUFFER command

The WRITE BUFFER command (see table 75) is used in conjunction with the READ BUFFER command as a diagnostic for testing target memory and the SCSI bus integrity. Additional modes are provided for downloading microcode and for downloading and saving microcode.

Table 75 - WRITE BUFFER command

Bit Byte	7	6	5	4	3	2	1	0
0	Operation code (3Bh)							
1	Logical unit number			Reserved		Mode		
2	Buffer ID							
3	(MSB)							
4	Buffer offset							
5	(LSB)							
6	(MSB)							
7	Parameter list length							
8	(LSB)							
9	Control							

This command shall not alter any medium of the target when the data mode or the combined header and data mode is specified.