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July 9, 2007

HAND-DELIVERED

Clerk's Office
Judicial Panel On Multidistrict Litigation
Thurgood Marshall Federal Judiciary Building
One Columbus Circle, N.E.
Room 6-255, North Lobby
Washington, D.C. 20002-8004

Civ. No. 07-415 ***
FILED
JUL 10 2007
U.S. DISTRICT COURT
DISTRICT OF DELAWARE

Re: In Re Papst Digital Camera Patent Litigation

Dear Sir or Ms.:

I am enclosing for filing the original and eleven (11) copies of the following documents for consideration by the Judicial Panel on Multidistrict Litigation:

- Papst Licensing GmbH & Co. KG ("Papst") Motion to Transfer
- Papst's Memorandum in Support of the Motion to Transfer
- Papst's Exhibits in Support of the Motion to Transfer
- Papst's Corporate Disclosure Statement

As shown on the certificate of service, copies of these filings are being served on the opposing counsel in five different cases and the Clerks in the four different federal district courts in which similar patent infringement litigation are pending.

Please call me with any questions.

Very truly yours,

Campbell Killefer

Campbell Killefer

Enclosures
cc: Counsel of Record

Civ. No. 07-415 ***

BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

In re Papst Licensing Digital Camera Patent Litigation	))	MDL - _____

MOTION FOR TRANSFER OF ACTION TO SINGLE DISTRICT FOR CONSOLIDATED AND COORDINATED PRE-TRIAL PROCEEDINGS

1. ***Relief Sought.*** Papst Licensing GmbH & Co. KG ("Papst") seeks to have all of the following actions transferred for consolidated and coordinated pre-trial proceedings as permitted by Section 1407(a) of Title 28 of the United States Code. Papst respectfully requests Oral Argument on this motion.

2. ***Schedule of Cases Requested to Be Transferred:***

District of Columbia
Casio, Inc. v. Papst Licensing GmbH & Co. KG, Case Action No. 1:06cv1751, Judge Kessler.

District of Columbia
Fujifilm Corporation, Fujifilm U.S.A., Inc. v. Papst Licensing GmbH & Co. KG; Case No. 1:07cv01118, Judge Kessler.

Northern District of Illinois
Papst Licensing GmbH & Co. KG v. Fujifilm Corporation, Fujifilm U.S.A., Inc., Case No. 07cv3401, Judge Holderman.

Central District of California, Western Division
Papst Licensing GmbH & Co. KG v. Samsung Techwin Co., Samsung Opto-Electronics American, Inc.; Civil Action No. 07cv4249, Judge Anderson Assigned.

District of Delaware
Papst Licensing GmbH & Co. KG v. Olympus Corporation, Olympus Imaging America, Inc., Civil Action No. 07cv0415, Vacant Judgeship.

FILED
JUL 10 2007
U.S. DISTRICT COURT
DISTRICT OF DELAWARE

3. ***Existence of Multiple Litigation.*** As more fully set forth in the supporting memorandum filed concurrently with this motion, five separate actions have been filed concerning the infringement of two United States patents owned by Papst (the "Tasler Patents").

4. ***Common Issue of Fact.*** Each of the actions includes at least the following common issues of fact:

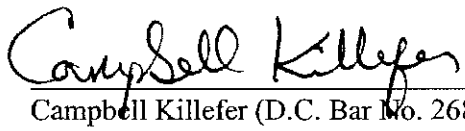
a. Whether digital cameras made, used, sold or offered for sale by Casio, Inc., Fujifilm Corporation, Fujifilm U.S.A., Inc., Olympus Corporation, Olympus Imaging America, Inc., Samsung Techwin Co., and Samsung Opto-Electronics America Inc., infringe or do not infringe the Tasler Patents; and

b. Whether the Tasler Patents are valid.

5. ***Benefits of Consolidation.*** As more fully set forth in the supporting memorandum, consolidation of these actions for pretrial discovery proceedings will serve the convenience of the parties and witnesses, and promote the just and efficient conduct and management of the actions. The questions of fact as to the infringement and validity of the Tasler Patents present numerous common issues of fact and law. Needless duplication or conflicting adjudication, or both, could result from continued independent maintenance of the separate actions.

July 9, 2007

Respectfully submitted,



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Attorneys for Papst Licensing GmbH & Co. KG

CERTIFICATE OF SERVICE

I certify that I caused a true and correct copy of Motion For Transfer of Action to Single District For consolidation and Coordinated Pre-Trial Proceedings to be served via Overnight Courier, on the following parties pursuant to JPML Rule 5.2(a):

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and on the following clerks of each district court in which an action is pending, pursuant JPML Rule 5.2(b):

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Done this 9th day of July, 2007.

Campbell Killefer

Civ. No. 07-415 +Sx

BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

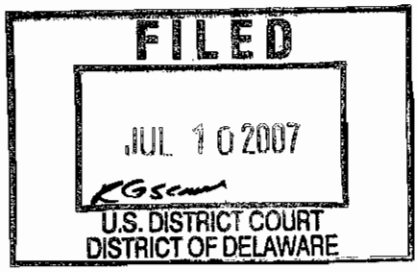
In re Papst Digital Camera Patent Litigation) MDL - _____
)

MEMORANDUM IN SUPPORT OF MOTION FOR TRANSFER OF ACTION TO SINGLE DISTRICT FOR CONSOLIDATED AND COORDINATED PRE-TRIAL PROCEEDINGS

Papst Licensing GmbH & Co. KG ("Papst") respectfully requests that the Judicial Panel on Multidistrict Litigation (the "Panel") transfer the five actions identified below to a single district for consolidated and coordinated pre-trial proceedings for the reasons set forth in this memorandum. All of these five actions concern infringement of the same two United States patents based on the sale of the same type of products, digital cameras. Under these circumstances, the Panel routinely consolidates the actions for pretrial discovery. *E.g.*, *In re Mirtazapine Patent Litig.*, 199 F.Supp. 2d 1380 (J.P.M.L. 2004); *In re Buspirone Patent Litig.*, 185 F.Supp.2d 363 (J.P.M.L. 2001); *In re Metoprolol Succinate Patent Litig.*, 329 F.Supp.2d 1368 (J.P.M.L. 2004); *In re Nabumetone Patent Litig.*, 1998 U.S. Dist. LEXIS 13735 (J.P.M.L. 1998); *In re Gabapentin Patent Litig.*, 2001 U.S. Dist. LEXIS 1726 (J.P.M.L. 2001); *In re Sundstrand Data Control, Inc. Patent Litig.*, 443 F. Supp. 1019 (J.P.M.L. 1978).

FACTS

1. The following five lawsuits in four different judicial districts all concern the infringement of U.S. Patent No. 6,470,399 and U.S. Patent No. 6,895,449 (the "Tasler Patents") by digital cameras:



a. *Casio, Inc. v. Papst Licensing GmbH & Co.,* C.A. No. 1:06-cv-01751 pending in the District of Columbia;

b. *Papst Licensing GmbH & Co. KG v. Fuji Corporation and Fujifilm USA, Inc.,* C. A. No. 07 cv 3401 pending in the Northern District of Illinois;

c. *Fuji Corporation and FujiFilm USA, Inc. v. Papst Licensing GmbH & Co. KG,* C.A. No. 07 cv 1118, pending in the District of Columbia;

d. *Papst Licensing GmbH & Co. KG v. Olympus Corporation and Olympus Imaging America, Inc.,* C. A. No. 07 cv 1751 pending in the District of Delaware; and

e. *Papst Licensing GmbH & Co. KB v. Samsung Techwin Co. and Samsung Opto-Electronics America, Inc.,* C. A. No. 07 cv 4249 pending in the Central District of California.

2. Digital cameras are popular electronic devices used to capture and store photographs electronically in digital format, instead of using photographic film like conventional cameras.

3. All five actions primarily concern allegations by Papst of infringement of both Tasler Patents based on the manufacture and sale of digital cameras. All five pending actions involve or will involve the same defenses of non-infringement and challenges to the validity of both Tasler Patents.[1]

4. Michael Tasler is the sole inventor of the Tasler Patents. Mr. Tasler is a German national who resides in Germany.

5. Papst, the owner of both Tasler Patents, is a company based in Germany. Papst is the one party common to all five actions, either as a plaintiff or as a declaratory judgment defendant.

---

[1] Because the actions filed by Papst were recently filed, the respective defendants in those cases have not yet answered the complaints, but it can be safely assumed that those defendants will respond with defenses of non-infringement and claims that the Camera Patents are invalid.

6. On October 16, 2006, Casio Inc. filed an action for declaratory judgment in the District Court for the District of Columbia, naming Papst as a declaratory judgment defendant. The lawsuit is captioned *Casio, Inc., v. Papst Licensing GmbH & Co. KG*, Civil Action No. 1:06CV01751 (the "Casio DJ Action"). **Ex. A.** In its complaint, Casio, Inc. seeks a declaration that both Tasler Patents are invalid, and that Casio, Inc.'s digital cameras do not infringe both Tasler Patents. On March 13, 2007, Papst Licensing filed a counterclaim in this action against both Casio, Inc. and Casio Computer Co., Ltd. asserting both companies infringe both Tasler Patents by their manufacture and/or sale of digital cameras. Casio Computer Co., Ltd. is a headquartered in Japan and Casio, Inc. is its related company based in the United States.

7. The parties in the Casio DJ Action are conducting written discovery. No depositions have been taken in the Casio DJ Action.

8. On June 15, 2007, Papst filed a lawsuit in the District Court for the Northern District of Illinois against Fujifilm Corporation and Fujifilm U.S.A., Inc. (collectively "Fujifilm") asserting both companies infringe the two Tasler Patents based on their manufacture and/or sale of digital cameras. Fujifilm Corporation is a Japanese company, and Fujifilm U.S.A., Inc. is its related company based in the United States. This lawsuit is captioned *Papst Licensing GmbH & Co. KG v. Fujifilm Corporation, Fujifilm U.S.A., Inc.*, 07CV3401 (the "Fujifilm Action"). **Ex. B.** Neither Fujifilm company has filed an answer.

9. On June 21, 2007, Fujifilm filed a declaratory judgment action in the United States District for the District of Columbia. That lawsuit is captioned *Fujifilm Corporation and Fujifilm U.S.A., Inc. v. Papst Licensing GmbH & Co. KG*, C. A. No. 07CV3401 (the "Fujifilm DJ Action"). **Ex. D.** In the Fujifilm DJ Action, Fujifilm seeks a declaration that both Tasler Patents are invalid and that the Fujifilm digital cameras do not infringe the two Tasler Patents. Papst has not yet filed

an answer in the Fujifilm DJ Action. The Fujifilm defendants simultaneously moved to dismiss the Fujifilm Action or in the alternative to transfer the case to the District of Columbia where Fujifilm filed the Declaratory Judgment Action. **Ex. C.** In its motion, Fujifilm admits that the Casio Action and the Fujifilm Action "seek[ ] adjudication of the same issues of law and fact." Ex. C, p. 5. Papst opposes dismissal and/or transfer, and a hearing on the motion to dismiss is scheduled for July 10, 2007. No discovery has occurred in this action.

10. No discovery has occurred in the Fujifilm Action or the Fujifilm DJ Action.

11. On June 28, 2007, Papst filed a lawsuit in the District Court for the District of Delaware against Olympus Corporation and Olympus Imaging America, Inc. (collectively "Olympus"). Olympus is based in Japan, and Olympus Imaging America, Inc. is the Olympus-related company based in the United States. This lawsuit is captioned *Papst Licensing GmbH & Co. KG v. Olympus Corporation, Olympus Imaging America, Inc.*, C. A. No. 07CV1751 (the "Olympus Action"). **Ex. E.** In the lawsuit Papst asserts both companies infringe the two Tasler Patents by their manufacture and/or sales of digital cameras. Neither Olympus party has filed an answer in the Olympus Action, nor has no discovery occurred.

12. No discovery has occurred in the Olympus Action.

13. On June 28, 2007, Papst Licensing filed a lawsuit in the District Court for the Central District of California, Western Division against Samsung Techwin Co. and Samsung Opto-Electronics America, Inc. (collectively "Samsung") for infringement of the Tasler Patents. Samsung Techwin Co. is a South Korean based company, and Samsung Opto-Electronics America, Inc. is its related company based in the United States. This lawsuit is captioned *Papst Licensing GmbH & Co. KG v. Samsung Techwin Co., Samsung Opto-Electronics America, Inc.*, C.A. No. 4249 (the "Samsung Action"). **Ex. F.** In the lawsuit Papst asserts both companies infringe the two Tasler

Patents by their manufacture and/or sales of digital cameras. Neither Samsung party has filed an answer in the Samsung Action, nor has no discovery occurred.

14. No discovery has occurred in the Samsung Action.

15. The inventions in the Tasler Patents relate to an interface device for communication between a host device and, for example, a device from which data is to be acquired. ('399 patent, column 1, lines 10-12). The "devices from which data are to be acquired cover the entire electrical engineering spectrum." ('399 patent, column 1, lines 35-46). In accordance with the Tasler Patents, a host device such as a personal computer is able to recognize how to communicate with and receive data from a peripheral device without a user having to load any software at all onto the host device. To do this, an interface device automatically and without user intervention sends a response signal to a personal computer during the process by which the computer initially recognizes how it can communicate with and receive data from the interface device. After this automatic recognition process is completed, digitized analog data may be transferred to the host device at relatively high speed.

16. The digital cameras at issue are data acquiring devices that have built into the camera an interface capable of communicating with a host device such as a personal computer, for example, in "USB Mass Storage Mode."[2] In USB Mass Storage Mode, the interfaces of the digital cameras send response signals to the personal computer in a way that makes the computer recognize the digital camera as a disk drive. The personal computer then communicates with the digital camera using protocols created for disk drives. Thus, the interfaces in the digital cameras at issue take advantage of the protocols normally present on personal computers, and do not require the camera

[2] There are also issues of infringement relating to additional modes of operation of the digital cameras and other data acquisition devices.

user to install software specifically designed for digital cameras. This greatly enhances the convenience and ease of use of the digital cameras.

ARGUMENT

I. CONSOLIDATION SHOULD BE ORDERED BECAUSE THE ISSUES OF FACT CONCERNING INFRINGEMENT AND VALIDITY ARE COMMON TO EACH ACTION.

"When civil actions involving one or more common questions of fact are pending in different districts, such actions may be transferred to any district for coordinated or consolidated pre-trial proceedings." 28 U.S.C. §1407. This case involves common questions of fact pending in four judicial districts. Consolidation will advance the interests of justice by avoiding duplicative discovery and inconsistent results, by providing greater efficiency to pretrial discovery, and by avoiding the wasteful duplication of judicial efforts.

Papst's Tasler Patents are common to all of the actions now pending in the five different districts. The infringement of the Tasler Patents and the validity of the Tasler Patents are factual issues common to all four actions. Under such circumstances, the Panel routinely orders consolidation. E.g., *In re Mirtazapine Patent Litig.*, 199 F.Supp. 2d 1380 (J.P.M.L. 2004) (involving the consolidation of six patent infringement lawsuits); *In re Buspirone Patent Litig.*, 185 F.Supp.2d 363 (J.P.M.L. 2001) (involving the consolidation of four patent infringement and twenty-two antitrust actions); *In re Metoprolol Succinate Patent Litig.*, 329 F.Supp.2d 1368 (J.P.M.L. 2004) (consolidating four separate actions); *In re Nabumetone Patent Litig.*, 1998 U.S. Dist. LEXIS 13735 (J.P.M.L. 1998) (consolidating four separate actions); *In re Gabapentin Patent Litig.*, 2001 U.S. Dist. LEXIS 1726 (J.P.M.L. 2001) (consolidating four separate actions); *In re Sundstrand Data Control, Inc. Patent Litig.*, 443 F. Supp. 1019 (J.P.M.L. 1978) (involving the consolidation of five actions pending in four districts).

A. The Infringement Of The Tasler Patents Presents Common Issues Of Fact Warranting Consolidation.

Casio and Fujifilm have alleged that making, using, selling or offering for sale their respective digital cameras do not infringe the Tasler Patents. It is believed that Olympus and Samsung will also allege that their products do not infringe the Tasler Patents. As set forth above, the digital cameras at issue are capable of operating in "USB Mass Storage Mode," which makes the camera appear to be a disk drive. A common issue across all of the cases, therefore, is whether camera operations in USB Mass Storage Mode infringe the patents in each suit. In this regard, whether a Casio digital camera infringes the Tasler Patents, as raised by Casio in the Casio DJ Action, will present the same issues of fact as whether Fujifilm digital cameras infringe the same patents (in the Fujifilm Action and Fujifilm DJ Action), or Olympus digital cameras (in the Olympus Action) or Samsung digital cameras (in the Samsung Action). Such commonality of issues warrants transfer and consolidation for pretrial proceedings. *See In re Western Electric Co. Semiconductor Patent Litig.*, 415 F. Supp. 378, 381 (J.P.M.L. 1976) (common questions of patent infringement would receive same benefit from consolidation as common questions of patent validity).

B. The Validity Of The Tasler Patents Presents Common Issues Of Fact Warranting Consolidation.

Another reason for consolidating the Camera Patent cases is that they involve common facts regarding the validity of the patents. In *In re Joseph F. Smith Patent Litig.*, for example, plaintiff Smith instituted six patent infringement actions against six separate defendants in three districts. 407 F. Supp. 1403 (J.P.M.L. 1976). The Panel granted Smith's motion to transfer all six actions to one district for coordinated or consolidated pretrial proceedings because each action shared common questions of fact with respect to the validity of Smith's patent. *Id.* at 1404. Similarly, In *In re the Triax Company Patent Litig.*, plaintiff Triax commenced three patent infringement actions against three separate defendants in two districts. 385 F. Supp. 590, 591 (J.P.M.L. 1974). The Panel granted

Triax's motion for an order transferring one action to the district where two others were because of the common pretrial questions regarding validity:

> An examination of the pleadings in this litigation reveals that, despite the unique infringement issues, **significant common factual questions are raised regarding the validity of these patents.** If pretrial proceedings in each action are neither coordinated nor consolidated, inconsistent pretrial rulings and unnecessary duplication of discovery might result.

Id. at 591 (emphasis added); *see also*, *In re Amoxicillin Patent and Antitrust Litigation*, 449 F. Supp. 601, 603 (J.P.M.L. 1978) (Panel granting motion to transfer three patent infringement actions in three districts due to complex factual questions regarding patent validity and misuse and the strong likelihood that discovery concerning these questions would be both complicated and time-consuming); *In re Western Electric Co. Semiconductor Patent Litig.*, 415 F. Supp. 378, 380 (J.P.M.L. 1976) (Panel consolidating five patent actions because "common factual questions on the validity issue alone necessitate centralized pretrial processing in order to ensure that the possibilities of duplicative discovery and inconsistent pretrial rulings are avoided"); *In re Molinaro/Catanzaro Patent Litig.*, 380 F. Supp. 794, 795 (J.P.M.L. 1974) ("the key issue in each of these actions is whether plaintiff's patent can withstand defendants' charges of invalidity. And that issue raises complex questions of fact common to each action . . .").

So far, Casio and Fujifilm have alleged and seek a declaratory judgment that the Tasler Patents are invalid and/or not infringed. Samsung and Olympus are sure to follow, as these are routine defenses to allegations of patent infringement. It is expected that each action will raise common issues such as the scope and content of the prior art, the dates of conception and reduction to practice of the invention, and other facts relating to validity. Thus, there will be considerable overlap of issues and of discovery.

C. Discovery Has Not Commenced, Or Is In Early Stages, In The Currently-Pending Actions.

The state of discovery in the pending actions is similar to the circumstances of *In re Panty Hose Seaming Patent Litig.*, 402 F. Supp. 1401, 1402 (J.P.M.L. 1975). In that case, the trial of the validity issue was not imminent in any of the actions, that no discovery on the issue of validity had occurred in three of the actions, and that only minimal discovery had occurred on the validity issue in the fourth action. *Id.* at 1403. Under those circumstances, the Panel ruled that four patent actions shared common questions of fact and transferred three actions to be consolidated with the fourth action. The Panel there found that such a transfer would best serve the convenience of the parties and witnesses and promote the just and efficient conduct of the litigation. *Id.* at 1402.

In these five patent infringement cases, like in *In re Panty Hose Seaming Patent Litig.*, only the Casio case has proceeded into the initial stages of discovery (documents and interrogatory answers). No depositions have occurred. In each of the other lawsuits, the parties have not even begun discovery. At this early stage, judicial economy will best be achieved by consolidating the five actions and transferring them to one district court that will administer and manage these similar cases most economically and consistently.

D. Unnecessary Duplication of Discovery Would Be Particularly Burdensome Because Witnesses And Parties Are Located Overseas.

In connection with the common infringement and validity issues, it is assumed that each of the camera makers in the five actions seek oral testimony from the inventor, Mr. Tasler. As set forth above, Mr. Tasler a native of and a resident of Germany. Whether Mr. Tasler testifies in the U.S. or in Germany, the taking of the testimony will involve either the witness or counsel to engage in overseas travel. Additionally, the camera makers may seek to take the testimony of other witnesses who reside in Germany. The German witnesses should not be forced to appear time and time again, as one party after another notices depositions.

Additionally, each of the camera maker parties has substantial operations overseas. Casio Computer Co., Fujifilm Corp., and Olympus Corp. all operate out of Japan, and Samsung Techwin Co. operates out of South Korea. It is very likely that discovery of these companies will require overseas travel.

The best way to ensure that discovery of overseas witnesses is not unnecessarily duplicated is to consolidate the cases for pretrial proceedings. *See In re Molinaro/Catanzaro Patent Litig.*, 380 F. Supp. 794, 795 (J.P.M.L. 1974) ("A Section 1407 transfer of all actions to a single district for coordinated or consolidated pretrial proceedings will insure that that discovery is not duplicated and avoid unnecessary inconvenience to the plaintiffs and their witnesses."). One court can manage discovery of these overseas witnesses and entities, and ensure that there is no unnecessary duplication of efforts and travel.

In summary, the Panel should order consolidation of these five actions to one common district for pretrial proceedings because of the common issues regarding infringement and validity.

II. THE MULTIPLE ACTIONS INVOLVING THE TASLER PATENTS SHOULD BE CONSOLIDATED TO CONSERVE JUDICIAL RESOURCES

The five actions identified above involve the same two patents and most likely will involve common pretrial discovery and motion practice. For example, issues of law that would have to be addressed by each of the four district courts in the absence of consolidation includes the extent to which privilege attaches to attorney-client communications involving attorneys and clients in Germany and the scope of protective orders to protect each party's confidential information.

Regarding the issue of attorney-client privilege, the initial priority document for the Tasler Patents is a patent application filed in Germany in March, 1997. There are written communications between the inventor of the Tasler Patents, Mr. Michael Tasler, and his patent attorney in Germany. The issue of the scope of privilege attaching to these attorney-client communications often requires

the district court to weigh competing testimony concerning the law and privileges in Germany. E.g., *In re Rivastigmine Patent Litig.*, 237 F.R.D. 69, 74 (S.D.N.Y. 2006) ("In a patent matter involving clients, attorneys, and patent applications of diverse nations, the law of multiple countries may be involved."); *Astra Akiebolag v. Andrx Pharmaceuticals, Inc.*, 208 F.R.D. 92, 97 (S.D.N.Y. 2002) ("Most, if not all, of the challenged documents are foreign documents; therefore, determination of the applicability of attorney-client privilege or work product protection to many challenged documents implicates issues of foreign law."). It would be best for a single district court to rule on privilege issues so that Papst is not subject to contradictory rulings concerning what it should produce, and what is properly withheld on grounds of privilege.

Another issue of law that is likely to be common amongst the five actions will be the scope and content of protective orders. A designation of "Confidential" by one of the digital camera makers should mean the same thing across all of the litigations, and should not subject Papst to different protective orders having different governing rules and definitions of who may view confidential information. It would be serve the interests of judicial economy for one court, rather than four, to address these issues. Consolidation is appropriate under these circumstances.

III. THE NORTHERN DISTRICT OF ILLINOIS IS BEST SUITED FOR THE CONSOLIDATED MDL PROCEEDINGS.

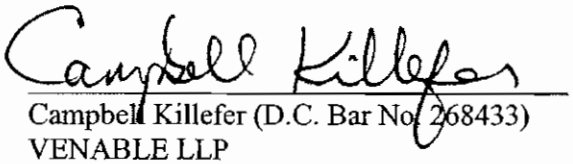
As set forth above, Papst is located in Germany, not Washington DC. Indeed, to Papst's knowledge, no documents or witnesses are located in Washington DC. On the other hand, Fujifilm USA is found in the Northern District of Illinois, and the Fujifilm Action is pending there. Also, the Northern District of Illinois is centrally located between the actions on the East Coast and the Samsung Action in California, and enjoys excellent nationwide and worldwide air service through O'Hare International Airport outside Chicago.

CONCLUSION

For the reasons set forth above, the Panel should grant Papst Licensing's motion to have all five actions transferred to the Northern District of Illinois for consolidated and coordinated pretrial proceedings.

July 9, 2007

Respectfully submitted,



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Attorneys for Papst Licensing GmbH & Co. KG

CERTIFICATE OF SERVICE

I certify that I caused a true and correct copy of Memorandum in Support of Motion For Transfer Of Action To Single District For Consolidated And Coordinated Pre-Trial Proceedings to be served via Overnight Courier, on the following parties pursuant to JPML Rule 5.2(a):

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and on the following clerks of each district court in which an action is pending, pursuant JPML Rule 5.2(b):

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Clerk of Court
Everett McKinley Dirksen Building
219 South Dearborn Street
Chicago, Illinois 60604

District of Delaware
Peter T. Dalleo
Clerk of Court
U.S. District Court
844 N. King Street
Lockbox 18
Wilmington, DE 19801

District of Columbia
Nancy Mayer-Whittington
Clerk's Office
United States District Court
For the District of Columbia
333 Constitution Avenue, N.W.
Washington, D.C. 20001
(202) 354 - 3000

Central District of California
Sherri R. Carter
Clerk of Court
312 North Spring Street, Room G-8
Los Angeles, CA 90012

Done this 9th day of June , 2007.

Campbell Killefer

Campbell Killefer

Civ. No. 07-415 ***

BEFORE THE JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

In re Papst Digital Camera Patent Litigation) MDL - _____
)

EXHIBITS IN SUPPORT OF PAPST'S MOTION FOR TRANSFER OF ACTION TO SINGLE DISTRICT FOR CONSOLIDATED AND COORDINATED PRE-TRIAL PROCEEDINGS

EXHIBIT A	Complaint from *Casio, Inc., v. Papst Licensing GmbH & Co. KG*, Civil Action No. 1:06CV01751
EXHIBIT B	Complaint from *Papst Licensing GmbH & Co. KG v. Fujifilm Corporation, Fujifilm U.S.A., Inc.*, 07CV3401
EXHIBIT C	Fujifilm's Motion to Dismiss or, in the Alternative, to Transfer this Action to the United States District for the District of Columbia
EXHIBIT D	Complaint from *Fujifilm Corporation and Fujifilm U.S.A., Inc. v. Papst Licensing GmbH & Co. KG*, C. A. No. 07CV3401
EXHIBIT E	Complaint from *Papst Licensing GmbH & Co. KG v. Olympus Corporation, Olympus Imaging America, Inc.*, C. A. No. 07CV1751
EXHIBIT F	Complaint from *Papst Licensing GmbH & Co. KG v. Samsung Techwin Co., Samsung Opto-Electronics America, Inc.*, C.A. No. 4249

FILED
JUL 10 2007
U.S. DISTRICT COURT
DISTRICT OF DELAWARE

EXHIBIT A

FILED
OCT 16 2006
NANCY MAYER WHITTINGTON, CLERK
U.S. DISTRICT COURT

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

CASIO INC.
570 Mount Pleasant Avenue
Dover, New Jersey 07801

Plaintiff,

-against-

PAPST LICENSING GMBH & CO. KG
Bahnhofstr. 33
78112 St. Georgen
Germany

Defendant.

COMPLAINT

CASE NUMBER 1:06CV01751
JUDGE: Gladys Kessler
DECK TYPE: General Civil
DATE STAMP: 10/16/2006

JURY ACTION

Plaintiff Casio, Inc. ("Casio"), for its Complaint against Defendant Papst Licensing GmbH & Co. KG ("Papst Licensing"), alleges and states as follows:

NATURE OF ACTION

1. This action arises under the Declaratory Judgment Act, 28 U.S.C. §§ 2201 and 2202 and the patent laws of the United States, Title 35 U.S.C. § 1 et seq.

THE PARTIES

2. Casio is a New York corporation in the business of, among other things, selling electronic goods, with its principal place of business located at 570 Mount Pleasant Avenue, Dover, New Jersey 07801.

3. On information and belief, Defendant Papst Licensing is a German partnership in the business of licensing, enforcing, and commercializing U.S. Patents and other forms of

EXHIBIT A

intellectual property, with its principal place of business located at Bahnhofstrasse 33, 78112 St. Georgen, Germany.

JURISDICTION AND VENUE

4. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338.

5. This Court has personal jurisdiction over Papst Licensing pursuant to 35 U.S.C. § 293.

6. Venue is proper in this judicial district at least pursuant to 28 U.S.C. § 1391(c).

GENERAL ALLEGATIONS

7. Casio imports, markets and sells electronic goods in the United States including digital cameras.

8. On information and belief, Papst Licensing owns various United States patents, has filed numerous patent infringement suits in the United States to enforce its rights under those patents, and has negotiated numerous license agreements with a variety of United States companies relating to those patent rights.

9. Papst Licensing claims to be the owner of U.S. Patent Nos. 6,895,449 ("the '449 patent") and 6,470,399 ("the '399 patent").

10. Papst Licensing has accused Casio of infringing upon both the '449 and '399 patents. For example, in a letter dated March 14, 2006, Papst Licensing accused Casio of infringing the '449 and '399 patents. Papst Licensing has repeated its accusations on numerous occasions since that time.

11. Casio responded with a detailed analysis of why it does not infringe the '449 patent or the '399 patent.

12. Notwithstanding, Papst Licensing demanded, among other things, that Casio pay it royalties for the use of the '449 and '399 patents in Casio's digital cameras that have been sold in the United States. Papst Licensing offered to license the '449 and '399 patents to Casio. Casio has rejected Papst Licensing's demands for payment of royalties and Papst Licensing's offer to license its '449 and '399 patents.

13. Papst Licensing has asserted and continues to assert, that the '449 and '399 patents are infringed by Casio.

COUNT ONE

DECLARATORY JUDGMENT OF NON-INFRINGEMENT AND INVALIDITY OF THE '449 PATENT

14. Casio repeats and realleges the averments of paragraphs 1-13 as if fully set forth herein.

15. There is an actual controversy between Casio and Papst as to the infringement and the validity of the '449 patent.

16. Casio has not infringed and does not infringe the '449 patent.

17. The '449 patent is invalid for failure to comply with the patent laws of the United States, including the requirements of 35 U.S.C. §§ 102, 103, and/or 112.

COUNT TWO

DECLARATORY JUDGMENT OF NON-INFRINGEMENT AND INVALIDITY OF THE '399 PATENT

18. Casio repeats and realleges the averments of paragraphs 1-17 as if fully set forth herein.

19. There is an actual controversy between Casio and Papst as to the infringement and the validity of the '399 patent.

20. Casio has not infringed and does not infringe the '399 patent.

21. The '399 patent is invalid for failure to comply with the patent laws of the United States, including the requirements of 35 U.S.C. §§ 102, 103, and/or 112.

JURY DEMAND

22. Casio demands a trial by jury.

PRAYER FOR RELIEF

WHEREFORE Plaintiff Casio Inc. respectfully requests that the Court enter judgment against Papst Licensing GMbH & Co. KG, including:

a. a declaration that Casio Inc. has not infringed, and is not infringing the '449 and '399 patents;

b. a declaration that each of the claims of the '449 and '399 patents are invalid;

c. an injunction prohibiting Papst Licensing from alleging infringement of the '449 and '399 patents by Casio Inc.;

d. an award of damages Casio Inc. has sustained;

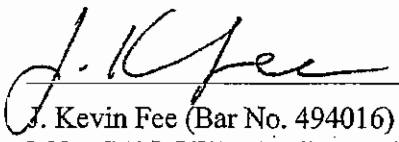
e. a declaration that this case is an "exceptional case" within the meaning of 35 U.S.C. § 285 due to, *inter alia,* the above actions of Papst Licensing;

f. an award of costs and attorneys fees and other expenses Casio Inc. has been forced to incur; and

g. such further relief as the Court may deem just and proper.

October 13, 2006

Respectfully submitted:



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Attorney for Plaintiff
Casio Inc.

EXHIBIT B

FILED
6-15-07
JUN 15 2007
JUN 15 2007
MICHAEL W. DOBBINS

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PAPST LICENSING GmbH & Co. KG
Plaintiff,

v.

FUJIFILM Corporation, FUJIFILM U.S.A., Inc.
Defendants

07cv3401
JUDGE HOLDERMAN
MAG. JUDGE ASHMAN

DEMAND FOR JURY TRIAL

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff, Papst Licensing GmbH & Co. KG ("Papst Licensing"), by and through counsel, for its Complaint against defendants FUJIFILM Corporation ("FUJIFILM"), and FUJIFILM U.S.A., Inc. ("FUJIFILM USA") (collectively "the FUJIFILM Defendants"), states as follows:

JURISDICTION AND VENUE

1. This Court has federal question jurisdiction of Papst Licensing's patent infringement claims pursuant to 28 U.S.C. §1331 and 1338(a) because this action arises under the patent laws of the United States. 35 U.S.C. §§ 1, *et seq.*

2. Venue is proper in the Northern District of Illinois, Eastern Division pursuant to 28 U.S.C. §§ 1391(c), 1391(d) and 1400(b).

3. Papst Licensing is a company existing under the laws of The Federal Republic of Germany with its principal place of business headquartered at Bahnofstrasse 33, 78112 St. Georgen, Germany.

4. Upon information and belief, FUJIFILM is a multinational corporation having an established and on-going business throughout the United States, and particularly, transacts

EXHIBIT B

business in this district through a sales office of FUJIFILM USA which is located at 850 Central Avenue, Hanover Park, Illinois 60133.

5. Upon information and belief, FUJIFILM USA is a wholly-owned subsidiary of FUJIFILM.

FACTS GIVING RISE TO THIS ACTION

6. The patents listed in Paragraphs Nos. 7 and 8 below cover, *inter alia*, various aspects of digital cameras. Unless otherwise specified, the said patents are collectively referred to hereinafter as the "Patents in Suit." Papst Licensing is the lawful owner, by assignment, of the entire right, title, and interest in and to each and every one of the Patents in Suit.

7. United States Patent No. 6,470,399 B1 duly and legally issued on October 22, 2002.

8. United States Patent No. 6,895,449 B2 duly and legally issued on May 17, 2005.

9. A reasonable opportunity for further investigation or discovery is likely to provide evidentiary support the FUJIFILM Defendants have made, used, sold or offered to sell to numerous customers in the United States or have imported into the United States digital cameras which infringe the Patents in Suit.

10. A reasonable opportunity for further investigation or discovery is likely to provide evidentiary support that the FUJIFILM Defendants have actively induced others and/or contributed to the infringement of the Patents in Suit.

11. A reasonable opportunity for further investigation or discovery is likely to provide evidentiary support that the FUJIFILM Defendants committed said infringements willfully.

12. Papst Licensing has given written notice of infringement to the FUJIFILM Defendants.

13. Upon information and belief, the FUJIFILM Defendants have been and still are committing the said infringements and will continue to do so unless enjoined by this Court.

WHEREFORE, Plaintiff demands a permanent injunction against continued infringement, damages adequate to compensate for said infringements, together with all applicable interest and costs, an increase of damages to three times the amount found or assessed, attorney fees, and such other and further relief as the Court may deem just and proper and as is warranted by the evidence.

DEMAND FOR JURY TRIAL

Plaintiff demands a trial by jury on all issues triable by jury as of right.

June 15, 2007

Respectfully submitted,

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Attorneys for Papst Licensing

EXHIBIT C

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PAPST LICENSING GmbH & Co. KG, Plaintiff, v. FUJIFILM Corporation, and FUJIFILM U.S.A., Inc., Defendants.	)	Civil Action No. 07cv3401

MOTION TO DISMISS OR, IN THE ALTERNATIVE, TO TRANSFER THIS ACTION TO THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

Pursuant to Rules 12(b)(2), 12(b)(3) and 12(b)(6) of the Federal Rules of Civil Procedure and 28 U.S.C. § 1404(a), defendants Fujifilm Corporation ("Fujifilm Japan") and Fujifilm U.S.A., Inc. ("Fujifilm U.S.A.") (collectively, "Fujifilm") hereby move to dismiss the Complaint filed by Papst Licensing GmbH & Co. KG ("Papst Licensing") or, in the alternative, to transfer this action to the United States District Court for the District of Columbia.

As set forth more fully in the accompanying memorandum, the District of Columbia is the presumptive venue, under 35 U.S.C. § 293, for patent actions involving foreign holders of U.S. patents, such as Papst Licensing, that have no registered agent for service of process in the United States. Pursuant to that statutory provision, an action already is pending in the United States District Court for the District of Columbia that involves precisely the same two patents asserted by Papst Licensing before this Court. *Casio, Inc. v. Papst Licensing*, 1:06-cv-01751-GK (USDC DC). Thus, this action is not the "first-filed" action on the patents-in-suit, and for that reason alone it should be transferred or dismissed. *See, e.g., Coleman Co. v. Black & Decker Corp.*, 1996 WL 41484 (N.D. Ill. 1996).

EXHIBIT C

Moreover, on June 21, 2007, Fujifilm filed a declaratory judgment Complaint against Papst Licensing in the District of Columbia on the same two patents-in-suit. While Fujifilm's District of Columbia Complaint is well-pleaded in all respects, the bare three-page Complaint filed by Papst Licensing in this Court is defective on its face. In particular, the handful of substantive paragraphs in the Papst Licensing Complaint do not actually allege infringement of the patents-in-suit by Fujifilm, or even a good-faith belief based on reasonable investigation that such infringement has occurred. Rather, Papst Licensing has merely alleged that it hopes "a reasonable opportunity for further investigation or discovery" will "provide evidentiary support" that Fujifilm has committed acts of infringement or has induced others to do so. Because such paper-thin allegations are susceptible to a motion to dismiss under Rule 12(b)(6), the declaratory judgment Complaint filed by Fujifilm in the District of Columbia should also be given priority over the Papst Licensing Complaint under the "first-to-file" doctrine.

Transfer or dismissal of this action is further supported by the relevant equitable considerations, including the interests of justice and the convenience of the parties and witnesses. A transfer also would avoid the prospect of inconsistency between the rulings of this Court and the Casio court in the District of Columbia on issues of claim construction, invalidity, and unenforceability.

Finally, as indicated above, the Complaint filed by Papst Licensing in this Court is defective and should be dismissed because it fails to allege actual infringing activities by Fujifilm, and therefore fails to state a claim upon which relief may be granted. The Complaint further should be dismissed because it fails to identify any specific Fujifilm products that Papst Licensing alleges infringe the patents-in-suit. Moreover, Papst has failed to plead facts that support personal jurisdiction over Fujifilm, in particular with respect to Fujifilm Japan.

For these reasons and on the additional grounds set forth in detail in the attached memorandum of points and authorities and exhibits filed herewith, Fujifilm moves to dismiss or transfer this action pursuant to Rules 12 (b)(2), 12(b)(3) and 12(b)(6) of the Federal Rules of Civil Procedure and 28 U.S.C. § 1404(a).

Dated: June 22, 2007

Respectfully submitted,

By: s/ Matthew J. Gryzlo

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on June 22, 2007, the Motion To Dismiss Or, In The Alternative, To Transfer This Action To The United States District Court For The District Of Columbia was electronically filed with the Clerk of Court using the CM/ECF system, and notification of such filing was sent via the CM/ECF system, upon:

Jerold B. Schnayer (jbschnayer @welshkatz.com)
John L. Ambrogi (jambrogi@welshkatz.com)
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By: s/ Matthew J. Gryzlo

CHI99 4844431-1.080246.0011

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PAPST LICENSING GmbH & Co. KG, Plaintiff, v. FUJIFILM Corporation, and FUJIFILM U.S.A., Inc., Defendants.	)	Civil Action No. 07cv3401

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF DEFENDANTS' MOTION TO DISMISS OR, IN THE ALTERNATIVE, TO TRANSFER THIS ACTION TO THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF COLUMBIA

Nine months before it filed the above-captioned action, plaintiff Papst Licensing GMbH ("Papst Licensing") was sued by Casio, Inc. in the District of Columbia on the same two patents now asserted against defendants Fujifilm Corporation ("Fujifilm Japan") and Fujifilm U.S.A., Inc. ("Fujifilm U.S.A.") (collectively, "Fujifilm"). *See Casio, Inc. v. Papst Licensing*, 1:06-cv-01751-GK (USDC DC) ("Casio Action"). The Casio Action involves issues relating to claim construction, infringement, and validity of U.S. Patent No. 6,470,399 (the '399 patent) and U.S. Patent No.6,895,449 (the '449 patent), just as this action will involve those same issues. More recently, Fujifilm filed a declaratory judgment action in the District of Columbia ("Fujifilm DJ Action) raising the same two patents and same set of issues.

Under the "first-to-file" rule endorsed by this Court and the Federal Circuit, the existence of the Casio Action and the Fujifilm DJ Action in the District of Columbia support the dismissal of this "second-filed" case. Alternatively, this case should be transferred to the U.S. District Court for the District of Columbia for consideration in connection with those two "first-filed

cases pending there. Moreover, as described below, considerations of judicial economy, the convenience of parties and witnesses, forum shopping, and the lack of any meaningful connection between this action and the Northern District of Illinois further support the dismissal or transfer of this action. Accordingly, Fujifilm moves to dismiss this lawsuit under Federal Rule of Civil Procedure 12(b)(3) or, alternatively, for transfer pursuant to 28 U.S.C. § 1404(a).

The Papst Complaint also is deficient on its face and should be dismissed pursuant to Rules 12(b)(2) and 12(b)(6). Although it purports to assert a claim of patent infringement, the Complaint does not contain any allegation that Fujifilm is in fact infringing the patents-in-suit. Instead, the Complaint alleges merely that "reasonable opportunity for further investigation or discovery is likely to provide evidentiary support" for a claim of infringement. Complaint ¶ 9. The Complaint further is defective because it fails to identify any specific accused products made or sold by Fujifilm. And, the Complaint also fails to allege sufficient facts to establish personal jurisdiction over Fujifilm, particularly with respect to Fujifilm Japan. While Fujifilm acknowledges that the Federal Rules allow notice pleading, the Papst Complaint fails to satisfy even that threshold standard, and, accordingly, it should be dismissed.

Factual Background

Papst Licensing has sent numerous "warning letters" to companies that manufacture or sell digital cameras threatening them with litigation if they did not agree to license the '399 and '449 patents. In response, on or about October 16, 2006, Casio filed a Complaint against Papst Licensing in the United States District Court for the District of Columbia, pursuant to 35 U.S.C. § 293, seeking a declaratory judgment that the '399 and '449 patents are invalid and not infringed. *See* Exhibit A. A Scheduling Order has been entered in the Casio Action, and discovery is under way. Significantly, on May 31, 2007, Magistrate Judge Robinson in the

District of Columbia sanctioned Papst Licensing for failing to comply with its discovery obligations. *See* Exhibit B at 25-28. Thus, while Papst Licensing already is a party to litigation in the District of Columbia involving the same patents-in-suit in the instant action, it apparently has decided that the District of Columbia is no longer a forum to its liking.

On June 15, 2007, Papst Licensing filed the instant action against Fujifilm in this Court. The patents-in-suit in this case are the same two patents that are at issue in the Casio Action pending in the District of Columbia.

On June 21, 2007, Fujifilm filed a declaratory judgment action in the United States District Court for the District of Columbia. *See* Exhibit C. In that Complaint, Fujifilm seeks relief that includes the relief sought by Casio in the Casio Action. Specifically, Fujifilm seeks a declaration that the '399 and '449 patents are invalid and not infringed.

Argument

I. THIS ACTION SHOULD BE DISMISSED OR TRANSFERRED TO THE DISTRICT OF COLUMBIA

A. This Case Should Be Dismissed Or Transferred To The District Of Columbia For Consolidation With The First-Filed Casio Action

Because the Casio Action is the first-filed action seeking to adjudicate the validity and other issues relating to the '399 and '449 patents, the "first-to-file" rule supports dismissal of this action or transfer to the District of Columbia.

> In resolving venue disputes and issues of appropriate forum where two actions involve closely related patent infringement questions, the Federal Circuit has strongly endorsed the 'first-to-file' doctrine.

Vanguard Products Group, Inc. v. Protex Int'l Corp., 2006 WL 695700, *2 (N.D. Ill. 2006). The "first-to-file rule" provides that "if actions involving nearly identical parties and issues have been filed in two different courts, the court in which the first suit was filed should generally proceed to judgment." *Id.*

In circumstances such as those now before this Court, the first-to-file rule weighs in favor of dismissing the second-filed action for improper venue under Federal Rule of Civil Procedure 12(b)(3). *See, e.g., Vanguard* (dismissing infringement action in favor of first-filed declaratory judgment action); *Design Automotive Group, Inc. v. Lund Indus., Inc.*, 1996 WL 377063 (N.D. Ill. 1996) (same). Alternatively, the second-filed action may be transferred under 28 U.S.C. § 1404(a). *See, e.g., Bowe, Bell & Howell Co. v. MidSouth Technologies, LLC*, 2005 WL 1651167 (N.D. Ill. 2005) (electing to transfer rather than dismiss). The "first-to file" rule thus strongly favors dismissal or transfer of the Complaint filed by Papst Licensing in this Court, because the previously-filed Casio Action involves identical issues and was filed nine months ago.[1/]

This Court's decision in *Coleman Co. v. Black & Decker Corp.*, 1996 WL 41484 (N.D. Ill. 1996) is directly on point. In September and October of 1995, Black & Decker sued several defendants for patent infringement in the Eastern District of Virginia. Subsequently, in December 1995, Coleman – which was not a party to the Virginia action – brought a declaratory judgment action against Black & Decker in Illinois. Under those facts, this Court granted Black & Decker's motion to transfer the Illinois action to Virginia, even though Coleman was not a party to the first-filed Virginia action. Although the Illinois action was the first action filed between Coleman and Black & Decker, "the first case filed concerning the validity of the patents-in-suit was in Virginia." *Id.* Accordingly, this Court held that "the pre-existing Virginia litigation weighs heavily against maintaining this case in this district." *See also Abbott Laboratories v. Selfcare, Inc.*, 1999 WL 162805 (N.D. Ill. 1999) (granting transfer to Massachusetts, venue of first-filed action, where "the two actions, even though directed to different patents, involve the same parties and substantially similar technology").

1/ Although Fujifilm has yet to answer or file counterclaims in this Court, it has asserted invalidity in the Fujifilm DJ Action and will do so in this action as well if it is not dismissed.

As in *Coleman*, the Casio Action was filed first, and even though it involves different accused infringers (Casio rather than Fujifilm), it seeks adjudication of the same issues of law and fact. The invalidity of the Papst '399 and '449 patents is at issue in both cases. Allowing both cases to proceed simultaneously would give rise to the "possibility of inconsistent judgments and patent interpretations." *Coleman,* 1996 WL 41484. Accordingly, given that the Casio Action involves the same issues of patent invalidity, the "first-to-file" rule weighs heavily in favor of dismissal of this action or, alternatively, transfer to the District of Columbia.

B. The Declaratory Judgment Action Filed By Fujifilm In The District Of Columbia Should Also Be Considered A "First-Filed" Action

As set forth below in Section II, the Complaint filed by Papst Licensing in this action is fatally defective and dismissible under Fed. R. Civ. P. 12(b)(2) and 12(b)(6). The Complaint does not adequately allege that Fujifilm has infringed the patents-in-suit, it does not identify any specific accused products, and it fails to allege facts establishing personal jurisdiction over Fujifilm Japan. Thus, the declaratory judgment Complaint filed by Fujifilm in the District of Columbia is the first-filed, *non-defective* action between Fujifilm and Papst Licensing, and as such it should be given priority over the instant action. It is well-established that the first-filed action should be preferred regardless of whether it is a declaratory judgment action. *Vanguard,* at *2; *accord, e.g., Bowe, Bell & Howell Co. v. MidSouth Technologies, LLC,* 2005 WL 1651167 (N.D. Ill. 2005). Thus, the Fujifilm DJ Action also is a first-filed action that supports dismissal of this action or transfer to the District of Columbia.

C. Equitable Considerations Further Support Dismissal Of This Action Or Transfer To The District Of Columbia

The strong presumption that the instant case should be dismissed or transferred to the District of Columbia, in favor of the first-filed Casio Action and Fujifilm DJ Action, is reinforced by the following equitable considerations: "(1) jurisdiction over the parties, (2)

judicial efficiencies and economies, (3) conveniences to the parties, (4) availability and convenience of witnesses, and (5) the extent to which the declaratory judgment action filed in another forum is anticipatory and motivated by forum shopping." *Vanguard,* 2006 WL 695700 at *4. Those same considerations also support transfer of this action under 28 U.S.C. § 1404(a). *Holley Performance Products, Inc. v. Barry Grant, Inc.* 2004 WL 3119017 at * 5 (N.D. Ill. 2004) ("The factors the court considers when deciding whether to dismiss an ... action in favor of litigation pending in a different district are the same as the factors considered when deciding to transfer venue to another district."). *Accord, e.g., Abbott,* 1999 WL 162805 at * 1; *Law Bulletin Publ'g, Co. v. LRP Publications, Inc.,* 992 F.Supp. 1014, 1017 (N.D.Ill.1998).

The relevant equitable considerations thus provide further support for relief requested in the motion. Moreover, even if this Court were to deem the Papst Complaint to be the "first-filed" action – which it should not – the aforementioned equitable considerations would still support transfer of this case to the District of Columbia. *Abbott,* 1999 WL 162805 at * 3, *citing Serco Servs. Co., L.P. v. Kelley Co., Inc.,* 51 F.3d 1037, 1039 (Fed.Cir.1995).

1. The Interests Of Justice Support Transfer

The most important factor that governs whether to dismiss or transfer a duplicative action is "the interests of justice." The interests of justice "may be determinative in a particular case, even if the convenience of the parties and witnesses might call for a different result." *Abbott,* 1999 WL 162805 at * 1. "The interest of justice analysis focuses on efficient functioning of the courts, rather than the private interests of the litigants." *Holley,* 2004 WL 3119017 at * 7 (*citing TIG Ins. Co. v. Brightly Galvanized Products, Inc.,* 911 F.Supp. 344, 346 (N.D.Ill.1996)). "In determining the interests of justice, the court considers the possibility of consolidation with related litigation." *Holley,* 2004 WL 3119017 at * 7. "Public interest factors or interests of

justice 'relate to the court's familiarity with the applicable law, the speed at which the case will proceed to trial, and the desirability of resolving controversies in their locale.'" *Technical Concepts L.P. v. Zurn Indus., Inc.*, 2002 WL 31433408 at * 2 (N.D. Ill. 2002) (*citing, VonHoldt v. Husky Injecting Molding System Ltd.*, 887 F.Supp. 185, 188 (N.D.Ill.1995)).

In *Coleman,* this Court found the "interests of justice" persuasive in its determination to transfer an infringement action to Virginia, even though the previously-filed action involved different accused infringers. The Court reasoned:

> The interests of justice clearly favor Virginia over this forum. The '206 patent's validity and scope has been at issue in the Eastern District of Virginia since September 1995. Common questions of fact and law are involved. ... Thus, it is readily apparent that there is a possibility of inconsistent judgments and patent interpretations if this case is not transferred to the Eastern District of Virginia. With or without Coleman, the Virginia litigation will continue ... Thus, the feasibility of consolidating the cases in Virginia strongly favors transferring venue. [citations omitted] Because scarce judicial resources may only be conserved by transferring this case to the Eastern District of Virginia, the interests of justice clearly weigh [in favor of] Virginia."

Coleman Co. v. Black & Decker Corp., 1996 WL 41484 (N.D. Ill. 1996).

Similarly, transfer was ordered by this Court in *Abbott Laboratories v. Selfcare, Inc.*, 1999 WL 162805 (N.D. Ill. 1999), even though the previously-filed action did not involve the same patents, because the two cases were sufficiently related that it would be judicially efficient to consolidate them. The *Abbott* Court's reasoning supports dismissal or transfer of this case:

> "When a case is transferred to a district in which a related case is pending, the expectation is that the two cases will be consolidated pursuant to Rule 42(a) of the Federal Rules of Civil Procedure, if practicable. *Waller v. Burlington N. R.R. Co.*, 650 F.Supp. 988, 991 (N.D.Ill.1987). Consolidation not only conserves scarce judicial resources, but also reduces the resources ultimately expended by the litigants. *Keppen v. Burlington N. R.R. Co.*, 749 F.Supp. 181, 183-84 (N.D.Ill.1990). By preventing duplicative efforts on the part of both the courts and the parties, transfer and subsequent consolidation serve the interests of justice within the meaning of the venue transfer statute. As the Supreme Court has acknowledged, "[t]o permit a situation in which two cases involving precisely the same issues are simultaneously pending in different District Courts leads to the

> wastefulness of time, energy and money that § 1404(a) was designed to prevent." *Continental Grain Co. v. Barge FBL-585,* 364 U.S. 19, 26 (1960). Transfer of venue also curbs the risk of inconsistent judgments. *Countryman v. Stein Roe & Farnham,* 681 F.Supp. 479, 484 (N.D.Ill.1987). These concerns have led this district to adopt "a strong policy in favor of transferring a case to the district where a related action is pending." *Keppen,* 749 F.Supp. at 184.

The same factors found persuasive by this Court in *Coleman* and *Abbott* are equally persuasive here. The Casio Action has been pending for nine months longer than the present case. Accordingly, the Court in the Casio Action is likely to consider and issue Markman rulings construing the '399 and '449 patents prior to a Markman hearing in this case. Proceeding with both cases simultaneously also presents the possibility of inconsistent discovery rulings and inconsistent determinations on the merits on common issues such as invalidity. Moreover, there is an enormous duplication of judicial time and effort involved in adjudicating identical issues of patent validity, claim construction, and possibly infringement, in two different Courts. Such a duplication of effort, combined with the potential for inconsistent results, weighs strongly in favor of transferring this case to the District of Columbia.

2. The Convenience Of Parties And Witnesses Supports Transfer

It is well-settled that a "plaintiff's choice of forum ha[s] reduced value where the forum lacks any significant contact with the underlying cause of action." *Hotel Constructors, Inc. v. Seagrave Corp.,* 543 F.Supp. 1048, 1050 (N.D. Ill. 1982) (citing *Cunningham v. Cunningham,* 477 F.Supp. 632, 634 (N.D. Ill. 1979)). Patent infringement cases are centered around the activities of the accused infringer, not the patent holder. *See Gen 17, Inc. v. Sun Microsystems, Inc.,* 953 F.Supp. 240, 243 (N.D. Ill. 1997). "[W]here the plaintiff's choice is not its resident forum, the chosen forum is entitled to less deference" and becomes "only one of many factors the court considers." *Holley,* 2004 WL 3119017 at * 6; *Bryant v. ITT Corp.,* 48 F.Supp.2d 829, 832 (N.D.Ill.1999); *Hotel Constructors,* 543 F.Supp. at 1050.

According to its Complaint, "Papst Licensing is a company existing under the laws of the Federal Republic of Germany with its principal place of business [in] Germany." Complaint ¶ 3 2/. It apparently chose the Northern District of Illinois for the convenience of its counsel, rather than for that of any party or witness. Convenience of counsel, however, is entitled to *no weight*. *See, e.g., Wolford v. Amer. Home Prods. Corp.,* 948 F. Supp. 47, 50 (N.D. Ill. 1996).

The only connection with Illinois alleged by Papst Licensing is that some, unidentified Fujifilm products are allegedly sold here. None of the manufacturing or design work is alleged to occur in Illinois. Moreover, as Papst admits, there is nothing unique about Fujifilm having a sales presence in Illinois, because Fujifilm has an "on-going business *throughout* the United States." Complaint ¶ 4 (emphasis added). When a product is distributed across the United States, the fact that some entities sell the product in Illinois is insufficient to establish a substantial connection to this forum when considering a motion to transfer. "[S]ales alone are insufficient to establish a substantial connection to the forum if the defendant's goods are sold in many states." *Technical Concepts,* 2002 WL 31433408 at * 3, *quoting, Energaire Corp. v. E.S. Originals, Inc.,* 1999 U.S. Dist. LEXIS 17304, at * 7 (N.D.Ill. Oct. 27, 1999), and *Anchor Wall Systems, Inc. v. R & D Concrete Prods., Inc.,* 55 F.Supp.2d 871, 874 (N.D.Ill.1999).

The convenience of witnesses and parties weighs in favor of the District of Columbia. Among other things, Fujfilm U.S.A. is a New York corporation and its principal place of business is in Valhalla, New York, which is closer and more easily accessible to the District of Columbia than Chicago.

2/ It is beyond question that Papst Licensing is subject to the jurisdiction of the District Court for the District of Columbia. *See* 35 U.S.C. § 293. In contrast, as discussed in Section II.C., *infra.*, the Complaint in this action fails to allege facts sufficient to establish personal jurisdiction over Fujifilm Japan and thus should be dismissed as to that defendant. That fact also weighs in favor of dismissing or transferring this action in favor of the declaratory judgment action now pending in the District of Columbia. *Abbott,* 1999 WL 162805 at * 3

Again, the facts of this case are highly analogous to *Coleman*. In *Coleman*, this Court transferred an action to Virginia even though the defendant had sales offices in the Chicago area and solicited customers in Chicago. The parties were not Illinois corporations, they did not conduct any manufacturing or design activities in Illinois, there were no significant witnesses within the Court's subpoena power, and Illinois lacked any "significant" connection with the case. "Limited sales activities," without more, did not warrant keeping the case in Chicago. Moreover, the defendant's facilities in Connecticut and North Carolina were closer to the transferee forum (Virginia) that to Illinois. *Coleman*, 1996 WL 41484.

Accordingly, on balance, the convenience of the parties and witnesses supports dismissal of this action or transfer to the District of Columbia.

3. Papst Licensing's Apparent Forum Shopping Also Supports Transfer

In the Casio Action, Magistrate Judge Robinson recently granted Casio's motion for sanctions against Papst for failing to provide discovery. Although Papst Licensing's request for a clarification of that sanctions order remains pending, it appears that the sanctions imposed on Papst Licensing may include waiver of certain privileges and protections over documents requested by Casio in discovery as well as attorneys' fees and costs associated with Casio's motion. With that recent set-back in the Casio Action, due to Papst Licensing's own misconduct, it appears that Papst Licensing has decided to look for other district courts in which to seek resolution of disputes relating to the patents-in-suit. Particularly in light of the lack of any meaningful connection between the Northern District of Illinois and Papst Licensing, Fujifilm, and/or the subject matter of the instant action, it is apparent that Papst Licensing is shopping for a more favorable forum than the District of Columbia in which to press its claims. Such forum shopping should not be condoned.

II. THE COMPLAINT ALSO SHOULD BE DISMISSED UNDER FED. R. CIV P. 12(b)(2) and 12(b)(6)

A. The Complaint Should Be Dismissed For Failure To State A Claim

In ruling on a Rule 12(b)(6) motion, a Court should consider only well-pleaded facts. *Chisholm v. Foothill Capital Corp.*, 940 F. Supp. 1273, 1280 (N.D. Ill. 1996). The Court is "not obliged to accept mere conclusory allegations, without any supporting facts, as true." *Id.* (*citing Tamari v. Backe & Co. (Lebanon) S.A.L.*, 565 F.2d 1194, 1199 (7th Cir. 1977)). Indeed, the Supreme Court recently recognized that "a plaintiff's obligation to provide the 'grounds' of his 'entitle[ment] to relief' requires more than labels and conclusions, and a formulaic recitation of the elements of a cause of action will not do." *Bell Atlantic Corp. v. Twombly*, 127 S. Ct. 1955, 1964-65 (May 21, 2007). Accordingly, a plaintiff cannot avoid dismissal "simply by attaching bare legal conclusions to narrated facts which fail to outline the bases of their claims." *Perkins v. Silverstein*, 939 F.2d 463, 466 (7th Cir. 1991).

The Complaint filed by Papst Licensing in this Court fails to satisfy even notice pleading standards. Indeed, it does not allege any act of patent infringement. Instead, it alleges only that "[a] reasonable opportunity for further investigation or discovery is likely to provide evidentiary support [sic] the Fujifilm defendants have made, used, sold or offered to sell to numerous customers in the United States or have imported into the United States digital cameras which infringe the Patents in Suit." Complaint ¶ 9. It contains similarly vague allegations with respect to contributory, induced and willful infringement. *See id.* ¶¶ 10-11. Thus, the allegations do not even support a conclusion that Papst Licensing has conducted an investigation of available facts sufficient to support a good faith belief that Fujifilm has infringed the patents-in-suit.

Indeed, if any reasonable inference can be drawn from the highly conclusory allegations of the Complaint, it is that Papst Licensing has not conducted a reasonable investigation or

analysis of its claims, because it has alleged merely that "further investigation or discovery" might lead to evidence to support a claim of infringement. If any such "evidence" had been identified to date, or Papst Licensing undoubtedly would have alleged at least some fact relating to infringement of the patents-in-suit. Because the Complaint does nothing more than state a "suspicion [of] a legally cognizable right of action," it must be dismissed under Rule 12(b)(6). *See Bell Atlantic*, 127 S. Ct. at 1965 (quoting 5 C. Wright & A. Miller, FEDERAL PRACTICE AND PROCEDURE § 1216, pp. 235-236 (3d ed. 2004)).

B. The Complaint Should Be Dismissed For Failure To Identify Accused Products

It is well-established that "[f]or fair notice to be given, a complaint must at least include the operative facts upon which plaintiff bases his claim." *Kyle v. Morton High Sch.*, 144 F.3d 448, 455 (7th Cir. 1998) (internal quotation marks omitted)). In the context of a patent infringement complaint, a plaintiff must either identify the specific products it is accusing of infringement or provide a "limiting parameter" that would allow defendant to determine which of its products are accused products. *See, e.g., Bay Industries v. Tru-Arx Mfg., L.L.C.*, 2006 WL 3469599 (E.D. Wis. 2006); *Agilent Tech., Inc. v. Micromuse, Inc.*, 2004 WL 2346152 (S.D.N.Y. 2004); *In re Papst Licensing GmbH Patent Litigation*, 2001 WL 179926 (E.D. La. 2001). The reason for this rule is that a defendant "should not have to guess which of its products infringe nor guess how its products might fall within plaintiff's interpretation of the claims of the patent". *Bay Industries,* 2006 WL 3469599 at *2. *See also eSoft, Inc. v. Astaro Corp.*, 2006 U.S. Dist. LEXIS 52336, *4 (D. Colo. 2006) ("Defendant cannot realistically be expected to frame a responsive pleading without risk of prejudice in the absence of any indication as to which of its products are accused.").

The Complaint before this Court does not identify any specific accused products; instead, it broadly asserts a potential claim against certain unnamed Fujifilm "digital cameras." Fujifilm has manufactured and sold dozens of different digital camera models with different types of operating systems, features, and components. The Complaint does not identify even a single Fujifilm digital camera model that is accused of infringement. Nor does it provide any "limiting parameter" that would enable Fujifilm to determine which products Papst Licensing is accusing. For that reason as well, the Complaint is defective and should be dismissed.

C. The Complaint Fails to Plead Facts Establishing That This Court Has Personal Jurisdiction Over Fujifilm

Under Rule 12(b)(2), a Complaint must be dismissed if it fails to allege facts sufficient to establish that the Court has jurisdiction over a defendant. This Court conducts a two-step inquiry to evaluate whether a complaint adequately pleads personal jurisdiction: (1) it determines whether plaintiff has pled facts demonstrating that defendants are subject to jurisdiction under Illinois' long-arm statute; and (2) it considers whether plaintiff has pled facts demonstrating that the exercise of jurisdiction comports with due process requirements. *See Brooks v. Bekins Van Lines, LLC*, 2006 WL 3524426 (N.D. Ill. 2006). Plaintiff bears the burden of making a prima facie showing that the complaint satisfies the statutory and constitutional requirements for personal jurisdiction. *See Vandeveld v. Christoph*, 877 F. Supp. 1160, 1163 (N.D. Ill. 1995).

The Complaint fails to establish personal jurisdiction over defendants in this case. With respect to Fujifilm U.S.A., plaintiff has alleged only that it has a sales office in Hanover Park, Illinois. Complaint ¶ 4. The Complaint contains no allegations regarding the involvement of this sales office in the conduct that is alleged to be infringing. Likewise, there are no allegations that would demonstrate that this office engages in the type of continuous and systematic contacts with this forum that would support the exercise of general jurisdiction over Fujifilm U.S.A.

The Complaint even more clearly fails to allege facts sufficient to support this Court's exercise of personal jurisdiction over Fujifilm Japan. Plaintiff alleges only that Fujifilm is a "multinational corporation having an established and on-going business throughout the United States." Complaint ¶ 4. That allegation sets forth no facts relating to Fujifilm Japan's contacts with this forum. Moreover, courts in Seventh Circuit have repeatedly held that this type of conclusory allegation is insufficient to support the exercise of personal jurisdiction over a non-resident defendant. *See, e.g., Gentry v. Environmental Recycling, Inc.*, No. 1:05-CV-0507-SEB-VSS, 2006 WL 3198025 (S.D. Ind. March 6, 2006); *Wasendorf v. DBH Brokerhaus AG*, No. 04-C-1904, 2004 WL 2872763 (N.D.Ill. Dec. 13, 2004); *Sanderson v. Spectrum Labs, Inc.*, 227, F.Supp.2d 1001, 1013 (N.D. Ind. 2000); *Search Force, Inc. v. Dataforce Intern., Inc.*, 112 F.Supp.2d 771, 774 (S.D.Ind.2000); *Meltzer v. McGeorge School of Law*, No. 87 C 2542 1997 WL 28263 (N.D. Ill. Nov. 16, 1987); *see also Massachusetts School of Law at Andover, Inc. v. American Bar Ass'n*, 107 F.3d 1026, 1042 (3d Cir.1997) ("mere unsupported allegation that the defendant 'transacts business' in an area is 'clearly frivolous' ").

To the extent the Complaint alleges the existence of a "Fujifilm" sales office in Hanover Park, Illinois, Complaint ¶ 4, that allegation also is insufficient to establish personal jurisdiction over Fujifilm Japan. As the Complaint itself acknowledges, Fujifilm U.S.A. and Fujifilm Japan are separate corporations. The sales and distribution center located in Hanover Park, Illinois is an office of Fujifilm U.S.A., not Fujifilm Japan. *See* Exhibit D, Declaration of Jonathan E. File ¶¶ 5-6 (submitted solely in support of Fujifilm's motion under Rule 12(b)(2)). The law is clear that personal jurisdiction over a parent corporation cannot be premised merely on the conduct of a subsidiary. *See IDS Life Ins. Co. v. SunAmerica Life Ins. Co.*, 136 F.3d 537, 540 (7th Cir.1998)). *Accord, e.g., Purdue Research Found. v. Sanofi-Synthelabo, S.A.*, 338 F.3d 773,

788 n.17 (7th Cir. 2003); *Joseph P. Caulfield & Associates, Inc. v. Litho Productions, Inc.*, 155 F.3d 883, 887 (7th Cir. 1998); *A.M Mfg. Co., Inc. v. J.C. Ford Co.*, 2006 WL 1987825 (N.D. Ill. 2006); *Faust Printing, Inc. v. Man Capital Corp.*, 2006 WL 1719532 (N.D. Ill. 2006).

Because the Complaint contains no factual allegations regarding the contacts of Fujifilm Japan with this forum, and because the contacts of Fujifilm U.S.A. cannot, as a matter of law, be attributed to Fujifilm Japan, the Complaint is deficient and should be dismissed because it does not adequately plead personal jurisdiction over Fuji Japan.[3/]

Conclusion

For the foregoing reasons, the Court should dismiss the Complaint for improper venue under Rule 12(b)(3), for failure to state a claim as required by Rule 12(b)(6), and for failure to allege facts establishing personal jurisdiction under Rule 12(b)(2). In the alternative, the Court should transfer this case to the United States District Court for the District of Columbia where there are actions already pending that involve the same patents asserted in this action.

Dated: June 22, 2007

Respectfully submitted,

By: s/ Matthew J. Gryzlo

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3/ The Complaint is defective for the additional reason that it does not allege that either of the Fujifilm defendants has committed any acts of infringement in this judicial district under 28 U.S.C. § 1400(b).

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on June 22, 2007, the Memorandum Of Points And Authorities In Support Of Defendants' Motion To Dismiss Or, In The Alternative, To Transfer This Action To The United States District Court For The District Of Columbia was electronically filed with the Clerk of Court using the CM/ECF system, and notification of such filing was sent via the CM/ECF system, upon:

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CHI99 4844442-1.080246.0011

EXHIBIT D

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

FUJIFILM CORPORATION,
Midtown West, 7-3, Akasaka 9-chome
Minato-ku, Tokyo 107-0052
Japan,

FUJIFILM U.S.A., INC.
200 Summit Lake Drive, Floor 2
Valhalla, NY 10595,

Plaintiffs,

v.

PAPST LICENSING GmbH & Co., KG
Bahnhofstrasse 33
78112 St. Georgen, Germany,

Defendant.

C

Case: 1:07-cv-01118
Assigned To : Kessler, Gladys
Assign. Date : 6/21/2007
Description: General Civil

COMPLAINT FOR DECLARATORY JUDGMENT OF NON-INFRINGEMENT AND INVALIDITY OF PATENTS

Plaintiffs Fujifilm Corporation ("Fujifilm Japan") and Fujifilm U.S.A., Inc. ("Fujifilm U.S.A.") (collectively, "Fujifilm") bring this action against Papst Licensing GmbH & Co, KG ("Papst Licensing") for a declaration of non-infringement by Fujifilm digital camera products and invalidity with respect to two patents purportedly owned by Papst Licensing.

Parties

1. Plaintiff Fujifilm U.S.A. is a New York corporation with its principal place of business at 200 Summit Lake Drive, Floor 2, Valhalla, New York 10595.

2. Plaintiff Fujifilm Japan is a Japanese corporation with its principal place of business at Midtown West, 7-3, Akasaka 9-chome, Minato-ku, Tokyo 107-0052, Japan.

EXHIBIT D

3. Fujifilm U.S.A. and Fujifilm Japan are in the business of manufacturing and selling a wide range of consumer electronics products, including digital cameras.

4. Upon information and belief, Papst Licensing is a company existing under the laws of The Federal Republic of Germany with its principal place of business at Bahnhofstrasse 33, 78112 St. Georgen, Germany.

5. Upon information and belief, Papst Licensing does not manufacture or sell any consumer products. Its sole business is to acquire and enforce intellectual property rights.

Patents in Suit

6. Papst Licensing has held itself out as the owner of United States Patent No. 6,470,399 B1 ("the '399 patent") entitled "Flexible Interface for Communication Between a Host and an Analog I/O Device Connected to the Interface Regardless of the Type of the I/O Device," which issued on October 22, 2002.

7. Papst Licensing has also held itself out as the owner of United States Patent No. 6,895,449 B2 ("the '449 patent") entitled "Flexible Interface for Communication Between a Host and an Analog I/O Device Connected to the Interface Regardless the Type of the I/O Device," which issued on May 17, 2005.

8. Papst Licensing has been active in prosecuting continuations and divisional applications of the patents in suit, including pending application No. 11/078,778.

9. Papst Licensing has represented that Fujifilm, along with dozens of other companies, must either license the patents in suit or be faced with costly litigation and massive injury to business and reputation. Papst Licensing has made these threats without conducting an appropriate analysis of the Fujifilm digital camera products it accuses of infringement and with knowledge that those products clearly and objectively do not infringe the patents in suit.

10. Papst Licensing has specifically accused Fujifilm products of infringing the '399 patent and the '449 patent. For example, in a letter dated March 31, 2006 Papst Licensing accused the Fujifilm FinePix E550 and other unnamed digital cameras of infringing both of the patents-in-suit. Papst Licensing has repeated its accusations of infringement on numerous occasions since that time.

11. Fujifilm has presented Papst Licensing with a detailed analysis of why Fujifilm products do not infringe the '399 patent or the '449 patent. Fujifilm has explained why its products do not infringe the patents-in-suit to Papst Licensing on multiple occasions, including in meetings in July and November 2006, and by letter in September 2006.

12. Notwithstanding the clear evidence that Fujifilm products to do infringe the patents-in-suit, Papst Licensing has continued to demand that Fujifilm pay Papst Licensing royalties for use of the '399 and '449 patents.

13. Fujifilm has refused to take a license to these patents on the ground that no such license is needed because Fujifilm's digital camera products clearly and objectively do not infringe the '399 and '449 patents.

Jurisdiction and Venue

14. This action arises under the Declaratory Judgment Act and the patent laws of the United States. See 28 U.S.C. §§ 2201 and 2202; Title 35 U.S.C. §§ 100 *et seq.*

15. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338.

16. This Court has personal jurisdiction over Papst Licensing pursuant to 35 U.S.C. § 293.

17. Venue in this judicial district is proper under at least 28 U.S.C. § 1391(c) and (d) and 35 U.S.C. § 293.

18. The patents in suit are already being litigated in this forum. Specifically, Casio, Inc. filed an action against Papst Licensing seeking a declaratory judgment that the '399 and '449 patents are not infringed by Casio products and are invalid. That action is styled *Casio v. Papst Licensing*, Case No. 1:06-cv-01751-GK.

19. An actual and justiciable controversy exists between Fujifilm, on the one hand, and Papst Licensing on the other, as to the infringement and validity of the patents in suit.

Count I
(Declaratory Judgment of non-infringement and invalidity of the '399 patent)

20. Fujifilm re-alleges and incorporates by reference its allegations in paragraphs 1 through 19 above as if fully set forth herein.

21. Fujifilm has not directly infringed, contributed to infringement of, or induced infringement of any valid claim of the '399 patent, nor is Fujifilm, either literally or under the doctrine of equivalents, directly infringing, contributing to direct infringement of, or inducing infringement of any valid claim of the '399 patent.

22. The '399 patent is invalid for failing to comply with one or more of the requirements for patentability set forth in Title 35 U.S.C. § 101, *et seq.*, including but not limited to 35 U.S.C. §§ 101, 102, 103 and/or 112.

23. An actual and justiciable controversy exists between Fujifilm and Papst Licensing regarding the alleged infringement and validity of the '399 patent by virtue of the allegations made by Papst Licensing that Fujifilm and/or its customers are or have been infringing the '399 patent.

24. This case is an exceptional case pursuant to 35 U.S.C. § 285 entitling Fujifilm to an award of its attorneys' fees.

Count II

(Declaratory Judgment of non-infringement and invalidity of the '449 patent)

25. Fujifilm re-alleges and incorporates by reference its allegations in paragraphs 1 through 24 above as if fully set forth herein.

26. Fujifilm has not directly infringed, contributed to infringement of, or induced infringement of any valid claim of the '449 patent, nor is Fujifilm, either literally or under the doctrine of equivalents, directly infringing, contributing to direct infringement of, or inducing infringement of any valid claim of the '449 patent.

27. The '449 patent is invalid for failing to comply with one or more of the requirements for patentability set forth in Title 35 U.S.C. § 101, *et seq.*, including but not limited to 35 U.S.C. §§ 101, 102, 103 and/or 112.

28. An actual and justiciable controversy exists between Fujifilm and Papst Licensing regarding the alleged infringement and validity of the '449 patent by virtue of the allegations made by Papst Licensing that Fujifilm and/or its customers are or have been infringing the '399 patent.

29. This case is an exceptional case pursuant to 35 U.S.C. § 285 entitling Fujifilm to an award of its attorneys' fees.

30. Fujifilm expressly reserves the right to amend this Complaint to add declaratory judgment counts with respect to any continuation or divisional applications relating to the patents in suit that may issue after the date this complaint is filed.

Prayer for relief

WHEREFORE, plaintiffs Fujifilm U.S.A. and Fujifilm Japan pray this Court for the following relief:

1. A declaration that Fujifilm has not infringed, and is not infringing, the '399 or '449 patents;

2. A declaration that Fujifilm has not infringed, and is not infringing, any of the claims of any continuation or divisional application relating to the patents in suit that may hereafter issue;

3. A declaration that each of the claims of the '399 and '449 patents are invalid;

4. An injunction prohibiting Papst Licensing from alleging infringement of the '399 and '449 patents by Fujifilm;

5. An award of damages that Fujifilm has sustained;

6. A declaration that this case is exceptional under 35 U.S.C. § 285, and that plaintiffs be awarded their reasonable attorney fees and costs incurred in connection with this action; and

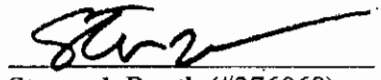
7. Such other further relief as the Court deems just and proper.

Jury Demand

Plaintiffs Fujifilm U.S.A. and Fujifilm Japan demand a jury trial on all issues so triable.

Dated: June 21, 2007

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FUJIFILM U.S.A., INC.

EXHIBIT E

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

PAPST LICENSING GMBH & CO. KG, Plaintiff, v. OLYMPUS CORPORATION, OLYMPUS IMAGING AMERICA, INC., Defendants.	)	C. A. No. 07-415

FILED
CLERK U.S. DISTRICT COURT
DISTRICT OF DELAWARE
2007 JUN 28 PM 3:45

COMPLAINT FOR PATENT INFRINGEMENT, AND DEMAND FOR JURY TRIAL

Plaintiff, Papst Licensing GmbH & Co. KG ("Papst Licensing"), by and through counsel, for its Complaint against defendants Olympus Corporation ("Olympus"), and Olympus Imaging America, Inc. ("Olympus Imaging") (collectively "the Olympus Defendants"), states as follows:

JURISDICTION AND VENUE

1. This Court has subject matter (federal question) jurisdiction over Papst Licensing's patent infringement claims pursuant to 28 U.S.C. §1331 and 1338(a) because this action arises under the patent laws of the United States. 35 U.S.C. §§ 1, *et seq.*

2. Venue is proper in the District of Delaware pursuant to 28 U.S.C. §§ 1391(c), 1391(d) and 1400(b).

3. Papst Licensing is a company existing under the laws of The Federal Republic of Germany with its principal place of business headquartered at Bahnofstrasse 33, 78112 St. Georgen, Germany.

EXHIBIT E

4. Upon information and belief, Olympus is located at Shinjuku Monolith, 2-3-1 Nishi-Shinjuku, Shinjuku-ku, Tokyo 163-0914, Japan.

5. Upon information and belief, Olympus is a multinational corporation having an established and on-going business throughout the United States, and particularly, transacts business in this judicial district through Olympus Imaging. Olympus Imaging is a corporation organized and existing under the laws of the State of Delaware and is located at 3500 Corporate Parkway, Center Valley, PA 18034.

6. Upon information and belief, Olympus is the ultimate parent company of Olympus Imaging.

FACTS GIVING RISE TO THIS ACTION

7. The patents listed in Paragraph Nos. 8 and 9 below cover, *inter alia*, various aspects of digital cameras. Unless otherwise specified, the said patents are collectively referred to hereinafter as the "Patents in Suit." Papst Licensing is the lawful owner, by assignment, of the entire right, title, and interest in and to the Patents in Suit.

8. United States Patent No. 6,470,399 B1 (the " '399 Patent") duly and legally issued on October 22, 2002. A copy of the '399 Patent is attached hereto as Exhibit A.

9. United States Patent No. 6,895,449 B2 (the " '449 Patent") duly and legally issued on May 17, 2005. A copy of the '449 Patent is attached hereto as Exhibit B.

10. Upon information and belief the Olympus Defendants have made, used, sold or offered to sell to numerous customers in the United States, or have imported into the United States, digital cameras which infringe the Patents in Suit.

11. A reasonable opportunity for further investigation or discovery is likely to provide evidentiary support that the Olympus Defendants have actively induced others and/or contributed to the infringement of the Patents in Suit.

12. A reasonable opportunity for further investigation or discovery is likely to provide evidentiary support that the Olympus Defendants committed the acts of infringement described herein willfully.

13. Papst Licensing has given written notice of infringement to the Olympus Defendants.

14. Upon information and belief, the Olympus Defendants have been and still are committing the acts of infringement described herein and will continue to do so unless enjoined by this Court.

DEMAND FOR JURY TRIAL

Plaintiff respectfully requests a trial by jury of all issues so triable.

REQUESTED RELIEF

WHEREFORE, Papst Licensing respectfully requests the following relief:

1. the entry of judgment in favor of Pabst Licensing, and against the Olympus Defendants, finding that the Olympus Defendants have infringed the Patents in Suit;

2. the entry of judgment in favor of Pabst Licensing, and against the Olympus Defendants, awarding Pabst Licensing damages adequate to compensate it for the Olympus Defendants' acts of infringement;

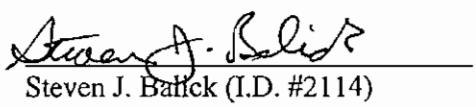
3. the entry of judgment in favor of Pabst Licensing, and against the Olympus Defendants, awarding Pabst Licensing all applicable interest (including pre-judgment and post-

judgment interest), costs, an increase of damages to three times the amount of damages found or assessed, and attorneys' fees;

4. the entry of a permanent injunction enjoining the Olympus Defendants, and all those acting in concert or participation with them, from further acts of infringement; and

5. such other and further relief as the Court deems just and proper.

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Dated: June 28, 2007

181891.1

Exhibit A

US006470399B1

(12) **United States Patent**
Tasler

(10) **Patent No.: US 6,470,399 B1**
(45) **Date of Patent: Oct. 22, 2002**

(54) **FLEXIBLE INTERFACE FOR COMMUNICATION BETWEEN A HOST AND AN ANALOG I/O DEVICE CONNECTED TO THE INTERFACE REGARDLESS THE TYPE OF THE I/O DEVICE**

(75) Inventor: **Michael Tasler**, Würzburg (DE)

(73) Assignee: **Labortechnik Tasler GmbH**, Wuerzburg (DE)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/331,002**

(22) PCT Filed: **Mar. 3, 1998**

(86) PCT No.: **PCT/EP98/01187**

§ 371 (c)(1),
(2), (4) Date: **Jun. 14, 1999**

(87) PCT Pub. No.: **WO98/39710**

PCT Pub. Date: **Sep. 11, 1998**

(30) **Foreign Application Priority Data**

Mar. 4, 1997 (DE) 197 08 755

(51) **Int. Cl.**[7] **G06F 13/14**
(52) **U.S. Cl.** **710/16**; 710/62; 710/63
(58) **Field of Search** 710/15, 16, 11, 710/12, 62, 63, 64; 703/23, 24, 25

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,291,611	A		3/1994	Davis et al.
5,297,124	A	*	3/1994	Plotkin et al. 703/25
5,430,855	A	*	7/1995	Walsh et al. 703/23
5,444,644	A		8/1995	Divjak
5,487,154	A		1/1996	Guuji
5,499,378	A	*	3/1996	McNeill et al. 703/24
5,506,692	A		4/1996	Murata
5,510,774	A		4/1996	Loncle
5,548,783	A	*	8/1996	Jones et al. 710/15
6,012,113	A	*	1/2000	Tuckner 710/64

FOREIGN PATENT DOCUMENTS

DE	195 28 889	A1	2/1997
EP	0 436 458	A2	7/1991
EP	0 685 799	A1	12/1995
JP	06301607	A	10/1994
JP	08110883	A	4/1996
WO	WO94/19746		9/1994

OTHER PUBLICATIONS

Steve Martin, "PC–based Data Acquisition in an Industrial Environment," pp. 1–3 (1990).
Payne et al., "High Speed PC–based Data Acquisition Systems," IEEE, pp. 2140–2145 (1995).
National Instruments Corporation, "Dyoamic Signal Acquisition and DSP Board for the PC AT," IEEE 488 and VXIbus Control, Data Acquisition, and Analysis, pp. 3–118–3–123, (1994).
IBM Corporation, "Communication Method between Devices through FDD Interface," IBM Technical Disclosure Bulletin, vol. 38 (No. 05), p. 245 (May, 1995).

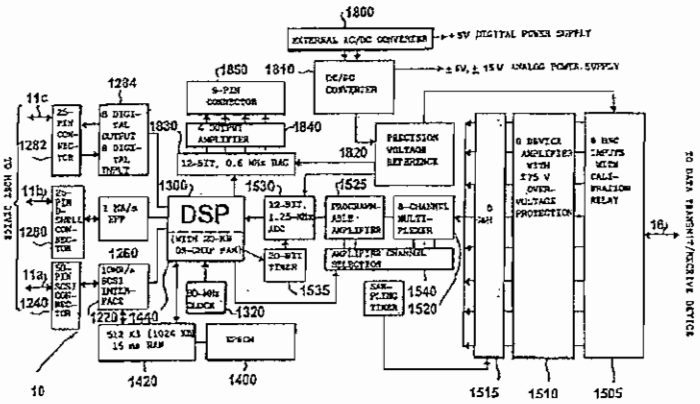
* cited by examiner

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(57) **ABSTRACT**

An interface device (**10**) provides fast data communication between a host device with input/output interfaces and a data transmit/receive device, wherein the interface device (**10**) comprises a processor means (**13**), a memory means (**14**), a first connecting device (**12**) for interfacing the host device with the interface device, and a second connecting device (**15**) for interfacing the interface device (**10**) with the data transmit/receive device. The interface device (**10**) is configured by the processor means (**13**) and the memory means (**14**) in such a way that, when receiving an inquiry from the host device via the first connecting device (**12**) as to the type of a device attached to the host device, regardless of the type of the data transmit/receive device, the interface device sends a signal to the host device via the first connecting device (**12**) which signals to the host device that it is communicating with an input/output device.

15 Claims, 2 Drawing Sheets



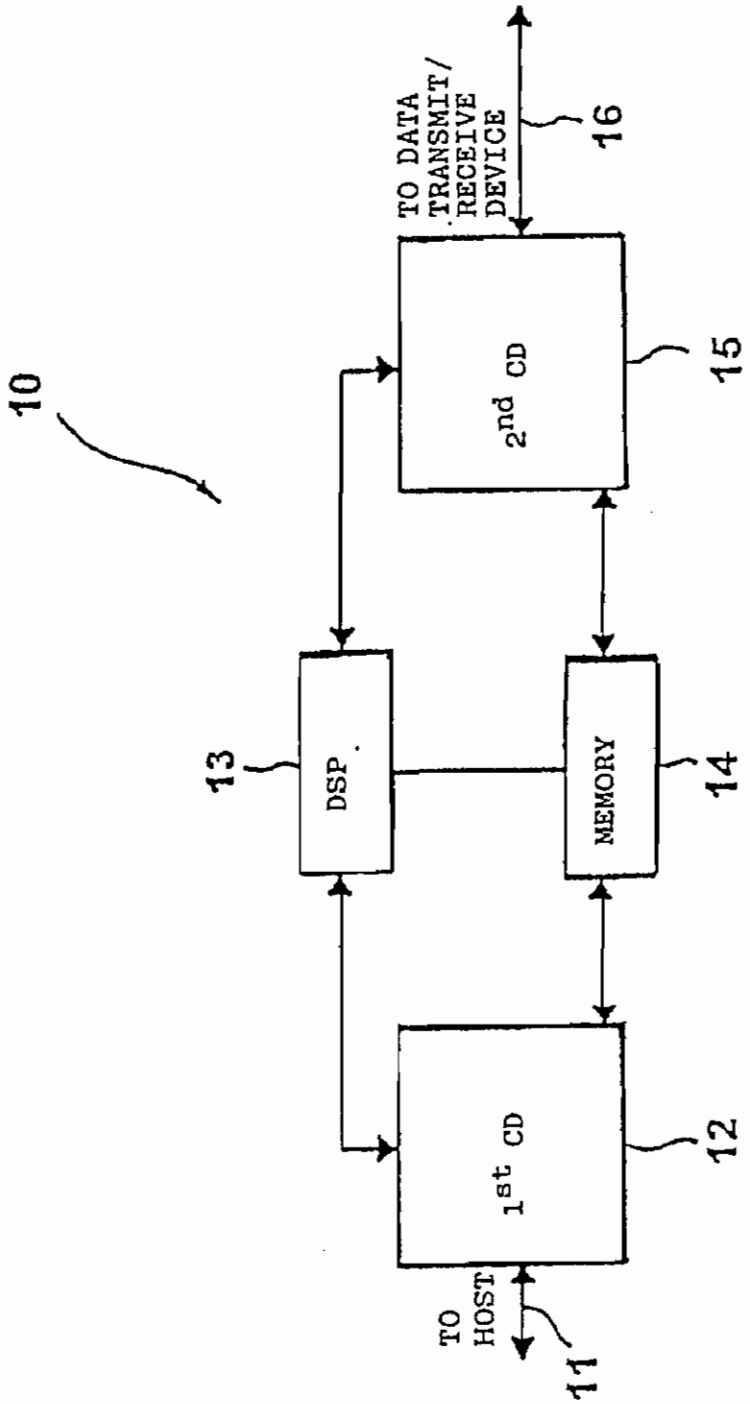

10
TO DATA TRANSMIT/ RECEIVE DEVICE
16
2nd CD
15
13
DSP
MEMORY
14
1st CD
12
TO HOST
11

FIG. 1

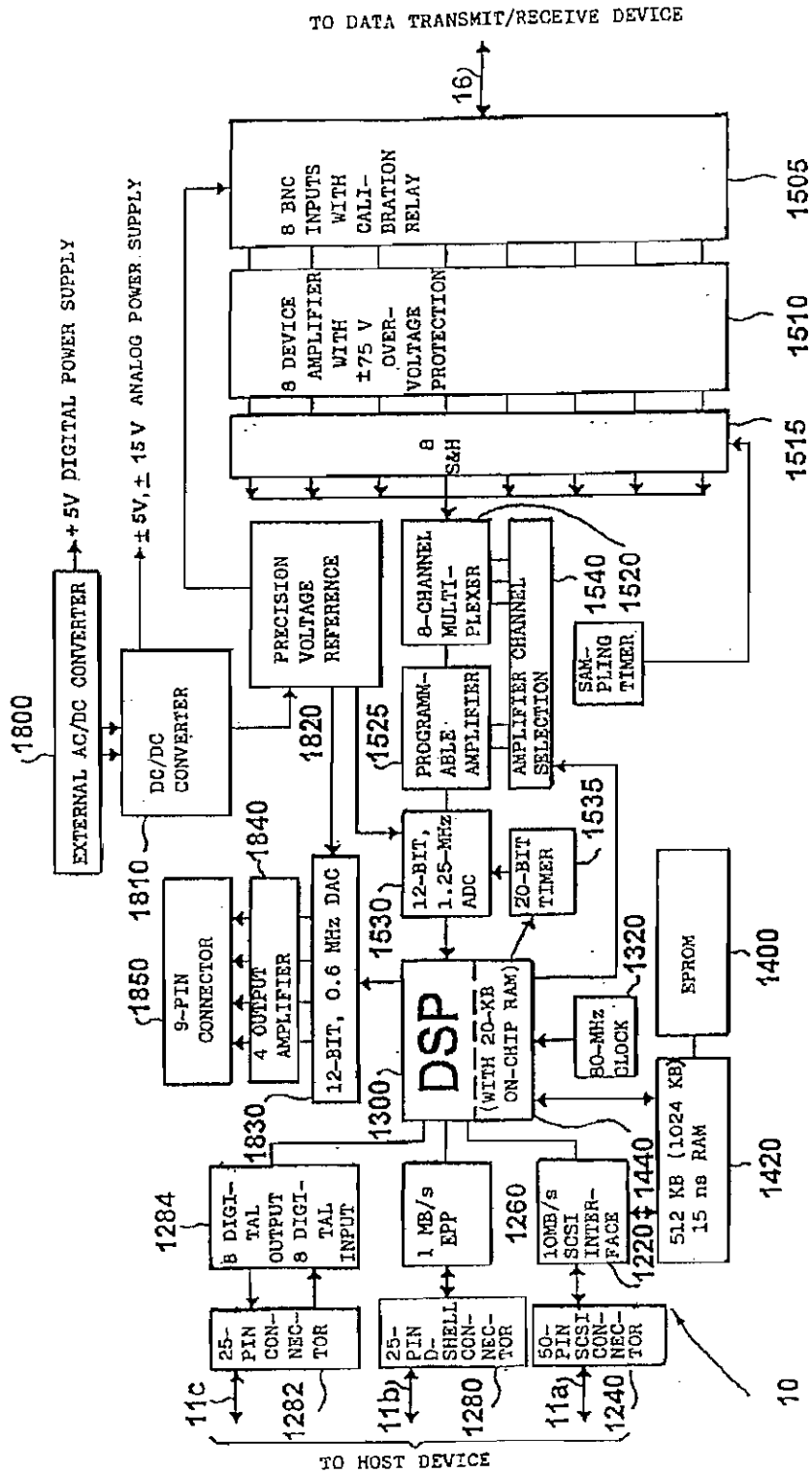

TO DATA TRANSMIT/RECEIVE DEVICE
16
8 BNC INPUTS WITH CALI-BRATION RELAY
1505
8 DEVICE AMPLIFIER WITH ±75 V OVER-VOLTAGE PROTECTION
1510
8 S&H
1515
+5V DIGITAL POWER SUPPLY
±5V, ±15 V ANALOG POWER SUPPLY
EXTERNAL AC/DC CONVERTER
1800
DC/DC CONVERTER
1810
PRECISION VOLTAGE REFERENCE
1820
8-CHANNEL MULTI-PLEXER
1520
PROGRAMM-ABLE AMPLIFIER
1525
AMPLIFIER CHANNEL SELECTION
1540
SAM-PLING TIMER
12-BIT, 1.25-MHz ADC
1530
20-BIT TIMER
1535
12-BIT, 0.6 MHz DAC
1840
4 OUTPUT AMPLIFIER
9-PIN CONNECTOR
1850
DSP
(WITH 20-KB ON-CHIP RAM)
1300
80-MHz CLOCK
1320
EPROM
1400
512 KB (1024 KB) 15 ns RAM
1420
1440
1220
8 DIGI-TAL OUTPUT 8 DIGI-TAL INPUT
1284
1830
1 MB/s EPP
1260
10MB/s SCSI INTER-FACE
25-PIN CON-NEC-TOR
1282
25-PIN D-SHELL CON-NEC-TOR
1280
50-PIN SCSI CON-NEC-TOR
1240
11c
11b
11a
10
TO HOST DEVICE

FIG.2

FLEXIBLE INTERFACE FOR COMMUNICATION BETWEEN A HOST AND AN ANALOG I/O DEVICE CONNECTED TO THE INTERFACE REGARDLESS THE TYPE OF THE I/O DEVICE

FIELD OF THE INVENTION

The present invention relates to the transfer of data and in particular to interface devices for communication between a computer or host device and a data transmit/receive device from which data is to be acquired or with which two-way communication is to take place.

BACKGROUND OF THE INVENTION

Existing data acquisition systems for computers are very limited in their areas of application. Generally such systems can be classified into two groups.

In the first group host devices or computer systems are attached by means of an interface to a device whose data is to be acquired. The interfaces of this group are normally standard interfaces which, with specific driver software, can be used with a variety of host systems. An advantage of such interfaces is that they are largely independent of the host device. However, a disadvantage is that they generally require very sophisticated drivers which are prone to malfunction and which limit data transfer rates between the device connected to the interface and the host device and vice versa. Further, it is often very difficult to implement such interfaces for portable systems and they offer few possibilities for adaptation with the result that such systems offer little flexibility.

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. A field service technician of the system manufacturer visits the customer and reads system log files generated by the diagnostic radiology system by means a portable computer or laptop for example. If the fault cannot be localized or if the fault is intermittent, it will be necessary for the service technician to read not only an error log file but also data from current operation. It is apparent that in this case fast data transfer and rapid data analysis are necessary.

Another case requiring the use of an interface could be, for example, when an electronic measuring device, e.g. a multimeter, is attached to a computer system to transfer the data measured by the multimeter to the computer. Particularly when long-term measurements or large volumes of data are involved is it necessary for the interface to support a high data transfer rate.

From these randomly chosen examples it can be seen that an interface may be put to totally different uses. It is therefore desirable that an interface be sufficiently flexible to permit attachment of very different electrical or electronic systems to a host device by means of the interface. To prevent operator error, it is also desirable that a service technician is not required to operate different interfaces in different ways for different applications but that, if possible, a universal method of operating the interface be provided for a large number of applications.

To increase the data transfer rates across an interface, the route chosen in the second group of data acquisition systems for the interface devices was to specifically match the

interface very closely to individual host systems or computer systems. The advantage of this solution is that high data transfer rates are possible. However, a disadvantage is that the drivers for the interfaces of the second group are very closely matched to a single host system with the result that they generally cannot be used with other host systems or their use is very ineffective. Further, such types of interface have the disadvantage that they must be installed inside the computer casing to achieve maximum data transfer rates as they access the internal host bus system. They are therefore generally not suitable for portable host systems in the form of laptops whose minimum possible size leaves little internal space to plug in an interface card.

DESCRIPTION OF PRIOR ART

A solution to this problem is offered by the interface devices of IOtech (business address: 25971 Cannon Road, Cleveland, Ohio 44146, USA) which are suitable for laptops such as the WaveBook/512 (registered trademark). The interface devices are connected by means of a plug-in card, approximately the size of a credit card, to the PCMCIA interface which is now a standard feature in laptops. The plug-in card converts the PCMCIA interface into an interface known in the art as IEEE 1284. The said plug-in card provides a special printer interface which is enhanced as regards the data transfer rate and delivers a data transfer rate of approximately 2 MBps as compared with a rate of approx. 1 MBps for known printer interfaces. The known interface device generally consists of a driver component, a digital signal processor, a buffer and a hardware module which terminates in a connector to which the device whose data is to be acquired is attached. The driver component is attached directly to the enhanced printer interface thus permitting the known interface device to establish a connection between a computer and the device whose data is to be acquired.

In order to work with the said interface, an interface-specific driver must be installed on the host device so that the host device can communicate with the digital signal processor of the interface card. As described above, the driver must be installed on the host device. If the driver is a driver developed specifically for the host device, a high data transfer rate is achieved but the driver cannot be easily installed on a different host system. However, if the driver is a general driver which is as flexible as possible and which can be used on many host devices, compromises must be accepted with regard to the data transfer rate.

Particularly in an application for multi-tasking systems in which several different tasks such as data acquisition, data display and editing are to be performed quasi-simultaneously, each task is normally assigned a certain priority by the host system. A driver supporting a special task requests the central processing system of the host device for processor resources in order to perform its task. Depending on the particular priority assignment method and on the driver implementation, a particular share of processor resources is assigned to a special task in particular time slots. Conflicts arise if one or more drivers are implemented in such a way that they have the highest priority by default, i.e. they are incompatible, as happens in practice in many applications. It may occur that both drivers are set to highest priority which, in the worst case, can result in a system crash.

EP 0685799 A1 discloses an interface by means of which several peripheral devices can be attached to a bus. An interface is connected between the bus of a host device and various peripheral devices. The interface comprises a finite

state machine and several branches each of which is assigned to a peripheral device. Each branch comprises a data manager, cycle control, user logic and a buffer. This known interface device provides optimal matching between a host device and a specific peripheral device.

The specialist publication IBM Technical Disclosure Bulletin, Vol. 38, No. 05, page 245; "Communication Method between Devices through FDD Interface" discloses an interface which connects a host device to a peripheral device via a floppy disk drive interface. The interface consists in particular of an address generator, an MFM encoder/decoder, a serial/parallel adapter and a format signal generator. The interface makes it possible to attach not only a floppy disk drive but also a further peripheral device to the FDD host controller of a host device. The host device assumes that a floppy disk drive is always attached to its floppy disk drive controller and communication is initiated if the address is correct. However, this document contains no information as to how communication should be possible if the interface is connected to a multi-purpose interface instead of to a floppy disk drive controller.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an interface device for communication between a host device and a data transmit/receive device whose use is host device-independent and which delivers a high data transfer rate.

In accordance with a first aspect of the present invention, this object is met by 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: 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, 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 an input/output device customary in a host 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.

In accordance with a second aspect of the present invention, this object is met by 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: 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, wherein 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, 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 specific driver for the multi-purpose interface.

In accordance with a third aspect of the present invention, this object is met by 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 steps of interfacing of the host device with a first connecting device of the interface device via the multi-purpose interface nf 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 an input/output device customary in a host device, whereupon the host device communicates with the interface device by means of the usual driver for the input/output device.

The present invention is based on the finding that both a high data transfer rate and host device-independent use can be achieved if a driver for an input/output device customary in a host device, normally present in most commercially available host devices, is utilized. 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. As however the hard disk interfaces in common host devices which can be, for example, IBM PCs, IBM-compatible PCs, Commodore PCs, Apple computers or even workstations, are the interfaces with the highest data transfer rate, the hard disk driver is utilized in the preferred embodiment of the interface device of the present invention. Drivers for other storage devices such as floppy disk drives, CD-ROM drives or tape drives could also be utilized in order to implement the interface device according to the present invention.

As described in the following, the interface device according to the present invention is to be attached to a host device by means of a multi-purpose interface of the host device which can be implemented, for example, as an SCSI interface or as an enhanced printer interface. Multi-purpose interfaces comprise both an interface card and specific driver software for the interface card. The driver software can be designed so that it can replace the BIOS driver routines. Communication between the host device and the devices attached to the multi-purpose interface then essentially takes place by means of the specific driver software for the multi-purpose interface and no longer primarily by means of BIOS routines of the host device. Recently however drivers for multi-purpose interfaces can also already be integrated in the BIOS system of the host device as, alongside classical input/output interfaces, multi-purpose interfaces are becoming increasingly common in host devices. It is of course also possible to use BIOS routines in parallel with the specific driver software for the multi-purpose interface, if this is desired.

The interface device according to the present invention comprises a processor means, a memory means, a first connecting device for interfacing the host device with the interface device, and a second connecting device for interfacing the interface device with the data transmit/receive device. The interface device is configured by the processor means and the memory means in such a way that the interface device, when receiving an inquiry from the host

device via the first connecting device as to the type of a device attached to the host device, sends a signal, regardless of the type of the data transmit/receive device, to the host device via the first connecting device which signals to the host device that it is communicating with an input/output device. The interface device according to the present invention therefore simulates, both in terms of hardware and software, the way in which a conventional input/output device functions, preferably that of a hard disk drive. As support for hard disks is implemented as standard in all commercially available host systems, the simulation of a hard disk, for example, can provide host device-independent use. The interface device according to the present invention therefore no longer communicates with the host device or computer by means of a specially designed driver but by means of a program which is present in the BIOS system (Basic Input/Output System) and is normally precisely matched to the specific computer system on which it is installed, or by means of a specific program for the multi-purpose interface. Consequently, the interface device according to the present invention combines the advantages of both groups. On the one hand, communication between the computer and the interface takes place by means of a host device-specific BIOS program or by means of a driver program which is matched to the multi-purpose interface and which could be regarded as a "device-specific driver". On the other hand, the BIOS program or a corresponding multi-purpose interface program which operates one of the common input/output interfaces in host systems is therefore present in all host systems so that the interface device according to the present invention is host device-independent.

BRIEF DESCRIPTION OF THE DRAWINGS

In the following, preferred embodiments of the present invention will be explained in more detail with reference to the drawings enclosed, in which:

FIG. 1 shows a general block diagram of the interface device according to the present invention; and

FIG. 2 shows detailed block diagram of an interface device according to a preferred embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

FIG. 1 shows a general block diagram of an interface device **10** according to the present invention. A first connecting device **12** of the interface device **10** can be attached to a host device (not shown) via a host line **11**. The first connecting device is attached both to a digital signal processor **13** and to a memory means **14**. The digital signal processor **13** and the memory means **14** are also attached to a second connecting device **15** by means of bidirectional communication lines (shown for all lines by means of two directional arrows). The second connecting device can be attached by means of an output line **16** to a data transmit/receive device which is to receive data from the host device or from which data is to be read, i.e. acquired, and transferred to the host device. The data transmit/receive device itself can also communicate actively with the host device via the first and second connecting device, as described in more detail in the following.

Communication between the host system or host device and the interface device is based on known standard access commands as supported by all known operating systems (e.g. DOS, Windows, Unix). Preferably, the interface device according to the present invention simulates a hard disk with a root directory whose entries are "virtual" files which can be created for the most varied functions. 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. Optionally, the host device can send an instruction, known by those skilled in the art as "Test Unit Ready", to the interface device to request more precise details regarding the queried device.

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 drive. If the host device receives the response that a drive is present, it then sends a request to the interface device **10** to read the boot sequence which, on actual hard disks, normally resides on the first sectors of the disk. The digital signal processor **13**, whose operating system in stored in the memory means **14**, responds to this instruction by sending to the host device a virtual boot sequence which, in the case of actual drives, includes the drive type, the starting position and the length of the file allocation table (FAT), the number of sectors, etc., known to those skilled in the art. Once the host device has received this data, it assumes that the interface device **10** according to a preferred embodiment of the present invention is a hard disk drive. In reply to an instruction from the host device to display the directory of the "virtual" hard disk drive simulated by the interface device **10** with respect to the host device, the digital signal processor can respond to the host device in exactly the same way as a conventional hard disk would, namely by reading on request the file allocation table or FAT on a sector specified in the boot sequence, normally the first writable sector, and transferring it to the host device, and subsequently by transferring the directory structure of the virtual hard disk. Further, it is possible that the FAT is not read until immediately prior to reading or storing the data of the "virtual" hard disk and not already at initialization.

In a preferred embodiment of the present invention, the digital signal processor **13**, which need not necessarily be implemented as a digital signal processor but may be any other kind of microprocessor, comprises a first and a second command interpreter. The first command interpreter carries out the steps described above whilst the second command interpreter carries out the read/write assignment to specific functions. If the user now wishes to read data from the data transmit/receive device via the line **16**, the host device sends a command, for example "read file xy", to the interface device. As described above, the interface device appears to the host device as a hard disk. The second command interpreter of the digital signal processor now interprets the read command of the host processor as a data transfer command, by decoding whether "xy" denotes, for example, a "real-time input" file, a "configuration" file or an executable file, whereby the same begins to transfer data from the data transmit/receive device via the second connecting device to the first connecting device and via the line **11** to the host device.

Preferably, the volume of data to be acquired by a data transmit/receive device is specified in a configuration file described in the following by the user specifying in the said configuration file that a measurement is to last, for example, five minutes. To the host device the "real-time input" file then appears as a file whose length corresponds to the anticipated volume of data in those five minutes. Those skilled in the art know that communication between a processor and a hard disk consists of the processor transferring to the hard disk the numbers of the blocks or clusters or sectors whose contents it wishes to read. By reference to the FAT the processor knows which information is contained in which block. In this case, communication between the host device and the interface device according to the present invention therefore consists of the very fast transfer of block numbers and preferably of block number ranges because a virtual "real-time input" file will not be fragmented. If the host device now wants to read the "real-time input" file, it transfers a range of block numbers to the interface device, whereupon data commences to be received via the second connecting device and data commences to be sent to the host device via the first connecting device.

In addition to the digital signal processor instruction memory, which comprises the operating system of the digital signal processor and can be implemented as an EPROM or EEPROM, the memory means **14** can have an additional buffer for purposes of synchronizing data transfer from the data transmit/receive device to the interface device **10** and data transfer from the interface device **10** to the host device.

Preferably, the buffer is implemented as a fast random access memory or RAM buffer.

Further, from the host device the user can also create a configuration file, whose entries automatically set and control various functions of the interface device **10**, on the interface device **10** which appears to the host device as a hard disk. These settings can be, for example, gain, multiplex or sampling rate settings. By creating and editing a configuration file, normally a text file which is simple to understand with little prior knowledge, users of the interface device **10** are able to perform essentially identical operator actions for almost any data transmit/receive devices which can be attached to the second connecting device via the line **16**, thus eliminating a source of error arising from users having to know many different command codes for different applications. In the case of the interface device **10** according to the present invention it is necessary for users to note the conventions of the configuration file once only in order to be able to use the interface device **10** as an interface between a host device and almost any data transmit/receive device.

As a result of the option of storing any files in agreed formats in the memory means **14** of the interface device **10**, taking into account the maximum capacity of the memory means, any enhancements or even completely new functions of the interface device **10** can be quickly implemented. Even files executable by the host device, such as batch files or executable files (BAT or EXE files), and also help files can be implemented in the interface device, thus achieving independence of the interface device **10** from any additional software (with the exception of the BIOS routines) of the host device. On the one hand, this avoids licensing and/or registration problems and, on the other hand, installation of certain routines which can be frequently used, for example an FFT routine to examine acquired time-domain data in the frequency domain, is rendered unnecessary as the EXE files are already installed on the interface device **10** and appear in the virtual root directory, by means of which the host device can access all programs stored on the interface device **10**.

In a preferred embodiment of the present invention in which the interface device **10** simulates a hard disk to the host device, the interface device is automatically detected and readied for operation when the host system is powered up or booted. This corresponds to the plug-and-play standard which is currently finding increasingly widespread use. The user is no longer responsible for installing the interface device **10** on the host device by means of specific drivers which must also be loaded; instead the interface device **10** is automatically readied for operation when the host system is booted.

For persons skilled in the art it is however obvious that the interface device **10** is not necessarily signed on when the computer system is powered up but that a special BIOS routine or a driver for a multi-purpose interface can also be started on the host device during current operation of the computer system in order to sign on or mount the interface device **10** as an additional hard disk. This embodiment is suitable for larger workstation systems which are essentially never powered down as they perform, e.g. mail functions or monitor processes which run continuously, for example, in multi-tasking environments.

In the interface device according to the present invention an enormous advantage is to be gained, as apparent in the embodiment described in the following, in separating the actual hardware required to attach the interface device **10** to the data transmit/receive device from the communication unit, which is implemented by the digital signal processor **13**, the memory means **14** and the first connecting device **12**, as this allows a plurality of dissimilar device types to be operated in parallel in identical manner. Accordingly, many interface devices **10** can be connected to a host device which then sees many different "virtual" hard disks. In addition, any modification of the specific hardware symbolized by the second connecting device **15** can be implemented essentially without changing the operation of the interface device according to the present invention. Further, an experienced user can intervene at any time on any level of the existing second connecting device by making use of the above mentioned option of creating a configuration file or adding or storing new program sections for the second connecting device.

An important advantage of the interface device **10** of the present invention is that it also permits extremely high data transfer rates by using, for data interchange, the host device-own BIOS routines which are optimized for each host device by the host device manufacturer or BIOS system manufacturer, or by using driver programs which are normally optimized and included by the manufacturers of multi-purpose interfaces. Furthermore, due to the simulation of a virtual mass storage device, the data is managed and made available in such a way that it can be transferred directly to other storage media, e.g. to an actual hard disk of the host device without, as it were, intervention of the host device processor. The only limitation to long-term data transfer at high speed is therefore imposed exclusively by the speed and the size of the mass storage device of the host device. This is the case as the digital signal processor **13** already formats the data read by the data transmit/receive device via the second connecting device **15** into block sizes suitable for a hard disk of the host device, whereby the data transfer speed is limited only by the mechanical latency of the hard disk system of the host device. At this point, it should be noted that normally data flow from a host device must be formatted in blocks to permit writing to a hard disk and subsequent reading from a hard disk, as known by those skilled in the art.

The said data transfer rate can be increased further by setting up a direct memory access (DMA) or RAM drive in the host system. As those skilled in the art know, the setting up of a RAM drive requires processor resources of the host device, with the result that the advantage of writing the data to a hard disk drive of the host device essentially without the need for processor resources is lost.

As described above, a data buffer can be implemented in the memory means **14** to permit independence in terms of time of the data transmit/receive device attached to the second connecting device from the host device attached to the first connecting device. This guarantees error-free operation of the interface device **10** even for time-critical applications in multi-tasking host systems.

FIG. **2** shows a detailed block diagram of an interface device **10** according to the present invention.

A digital signal processor (DSP) **1300** is, in a manner of speaking, the heart of the interface device **10**. The DSP can be any DSP but preferably has a 20-MB on-chip random access memory (RAM). Certain instruction sets, for example, can be stored in the RAM already integrated in the DSP. An 80-MHz clock generator is attached to the DSP **1300** in order to synchronize the DSP. The DSP implements a fast Fourier transformation (FFT) in real time and also optional data compression of the data to be transferred from the data transmit/receive device to the host device in order to achieve greater efficiency and to permit interoperation with host devices which have a smaller memory.

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: an SCSI interface **1220** and a 50-pin SCSI connector **1240** for attachment to an SCSI interface present on most host devices or laptops. The SCSI (small computer system interface) interface **1220** translates the data received via the SCSI connector **1240** into data understood by the DSP **1300**, as known by those skilled in the art. Further, the first connecting device **12** comprises an EPP (enhanced parallel port) with a data transfer rate of approx. 1 MBps which delivers a more moderate data transfer rate of 1 MBps by comparison to the data transfer rate of 10 MBps of the SCSI interface. The EPP **1260** is connected to a 25-pin D-shell connector **1280** to permit attachment to a printer interface of a host device for example. Optionally, the first connecting device **12** also comprises a 25-pin connector **1282** which permits the attachment of 8 digital outputs and 8 digital inputs **1284** at a host device.

Preferably, the second connecting device comprises 8 BNC inputs with the calibration relay **1505**, a block **1510** with 8 device amplifiers with an overvoltage protection of ±75 V, this block being connected in turn to 8 sample/hold (S&H) circuits **1515**. The calibration relays are relays which permit controlled changeover between a test voltage and a calibration reference voltage. Each sample/hold circuit is connected to a corresponding input of an 8-channel multiplexer **1520** which feeds its output signals via a programmable amplifier **1525** into an analog/digital converter (ADC) with 12 bit and 1.25 MHz **1530** and to the DSP **1300**. The ADC **1530** is controlled by means of a 20-bit timer **1535**, as known by persons skilled in the art. The programmable amplifier **1525** and the 8-channel multiplexer **1520** are controlled via an amplifier channel selection circuit **1540** which is in turn controlled by the DSP **1300**.

The complete interface device **10** is supplied with power by an external AC/DC converter **1800** which delivers a digital supply voltage of ±5 V and is attached to a DC/DC converter **1810** which can deliver analog supply voltages of ±5 V and ±15 V as required for the interface device **10**. Further, the DC/DC converter controls a precision voltage reference **1820** which controls the 8 BNC inputs **1505** and the ADC **1530** as well as a digital/analog converter (DAC) **1830** which permits, via an output amplifier block with 4 output amplifiers **1840** and a 9-pin connector **1850**, analog output direct from the DSP **1300** to an output device, e.g. printer device or monitor device, which can be attached via the 9-pin connector **1850**, thus providing the option of monitoring the data transferred to the host device or also, for example, of viewing an FFT to obtain rapid and comprehensive data analysis without using processor time of the host device.

In FIG. **2** the memory means **14** of FIG. **1** is implemented by an EPROM **1400** which, in a preferred embodiment of the present invention, contains the operating system of the digital signal processor **1300**. A random access memory with an access time of 15 ns and a size of 512 KB or optionally 1024 KB **1420** serves as a data buffer to achieve independence in terms of time of the output line **16** from the output lines **11***a*, **11***b* and **11***c* to the data transmit/receive device and to the host device respectively. As described above, in a preferred embodiment of the present invention the digital signal processor **1300** already contains a 20-KB on-chip RAM **1440** which can store certain instruction sets, functions and also smaller application software units.

The connection, symbolized by the line **16**, of the interface device **10** to any data transmit/receive device implements, by means of the blocks 1505–1535, an analog input with a sampling rate of 1.25 MHz and quantization of 12 bits. There are 8 channels with an overvoltage protection of ±75 V. By means of the programmable amplifier **1525** the channels can be programmed independently of each other in voltage ranges up to a maximum of ±10 V. Unused channels can be grounded internally to reduce channel intermodulation. The block **1515** is implemented as a monolithic high-precision, high-speed sample/hold amplifier for simultaneous sampling of all channels. The precision voltage reference **1820** provides a high-precision, temperature-compensated monolithic energy gap voltage reference for auto-calibration of each channel and each gain. Further, offset fine adjustment for each channel is implemented by the same.

The blocks **1830**, **1840** and **1850** implement a direct analog output for the digital signal processor **1300**, and the DAC **1830** provides a data transfer rate of 625 kHz and a quantization of 12 bits. The block **1840** comprises 4 channels with a common output latch.

Further, the interface device **10** comprises a digital input/output device implemented by the blocks **1284** and **1282**. Here there are 8 digital inputs, 8 digital outputs with a common latch, and the digital port can be attached preferably to a side panel of the interface device **10** so that the port itself can easily be accessed.

The digital signal processor **1300** provides on-board digital data processing. In particular, it is a high-performance DSP with a clock speed of 80 MHz and a 20-bit timer **1535**.

As described above, the first connecting device **12** comprises the SCSI interface **1220** with a peak transfer rate of 10 MBps. An optional PCMCIA-to-SCSI adapter permits high-speed communication with laptop computers which are desirable and in widespread use, particularly by mobile service technicians. The EPP **1260** with its associated connector **1280** permits data transfer at a more moderate rate.

As described above, the interface device **10** is supplied with power by means of an external AC/DC adapter which

has a universal power input (85–264 VAC, 47–63 Hz). Interference suppression complies with the standards EN 55022, curve B and FFC, Class B). Further, it is also in accordance with international safety regulations (TÜV, UL, CSA). The interface device **10** is externally shielded and achieves a value of 55 dB at 30–60 MHz and a value of approximately 40 dB at 1 GHz, and therefore complies with the MILSTD 285-1 standard.

As described above, communication between the host device and the multi-purpose 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. Generally speaking, this multi-purpose interface driver has the task of moving precisely specified SCSI commands from the host system program to the host system SCSI adapter. For this reason, the command set is almost identical to that of the SCSI interface itself. Essentially, only status and reset commands for the host adapter have been added.

The ASPI driver can be used if the hard disk was not already addressable at boot time or if the SCSI-related BIOS routines of the host computer were still disabled. Here too, the steps needed to initialize the interface device, preferably as a virtual hard disk, are similar to the steps taken when initializing at boot time.

In general terms, the ASPI manager comprises two sides. One side is the proprietary, hardware-oriented side. It is responsible for converting all commands into a form required by the corresponding multi-purpose interface. The hardware-oriented side of the ASPI driver is therefore matched to a very specific type of multi-purpose interface or SCSI interface. The other side is known as the user software side. This side is totally independent of the proprietary operating characteristics of the SCSI adapter and is therefore identical for all SCSI interfaces. This permits SCSI programming which is however independent of the individual SCSI adapter types.

In contrast to communication between the host device and the interface device according to the present invention on the basis of a BIOS driver, the use of such an ASPI driver for communication between the host device and the interface device according to the present invention allows various further possibilities of the SCSI multi-purpose interface to be exploited. In the case described above, the interface device which preferably signs on and behaves as a virtual hard disk is detected by the BIOS driver of the host computer at boot time and is configured as a hard disk. This step does not however support active requests sent by the interface device to the host computer. If however the virtual hard disk wishes to write data actively to, for example, a hard disk of the host computer or wishes to initiate communication with the processor of the host computer, the host computer must recognize the request of the virtual hard disk and tolerate a further issuer of instructions on its bus. If the interface device behaves solely like a virtual hard disk, it would always receive and never issue commands. The BIOS has no objections to an additional issuer of commands that actively wishes to place data on the bus of the host device but the BIOS does not support the host device in recognizing corresponding requests of the interface device or in granting the interface device permission to access the bus.

Using the ASPI manager the interface device according to the present invention can now obtain active access to an SCSI hard disk of the host device connected to the same SCSI bus which, in contrast to the interface device, cannot be a virtual but a real SCSI mass storage device or also a further interface device according to the present invention. Thereupon, the interface device according to the present invention can write the desired data to the SCSI hard disk of the host computer totally independently of the host computer or can communicate with the same in some other manner. The interface device according to the present invention therefore initially behaves passively as a virtual hard disk and then, as required and using the driver software for the multi-purpose interface, actively on the same SCSI bus. This means however that the interface device according to the present invention, using a driver software for the multi-purpose interface which comprises the BIOS routines customary in host devices and simultaneously provides the option of active participation, can, regardless of the type of the data transmit/receive device attached to the second connecting device, behave initially as a virtual and at the same time passive hard disk but can, as required, participate actively on the bus so as to be able to initiate communication directly with other SCSI hard disks of the host device by bypassing the processor of the host device.

Using a standard interface of a host device, the interface device according to the present invention permits communication with any host device. By simulating an input/output device to the host device and, in a preferred embodiment, by simulating a virtual mass storage device, the interface device **10** is automatically supported by all known host systems without any additional sophisticated driver software. The simulation of a freely definable file structure on the "virtual" hard disk provides simple operation and expansion options and, through the implementation of any programs, independence from special software implemented on the host device. Help files included on the interface device **10** and plug-and-play support ensure ease of use even in portable, flexible host devices. Despite the very simple user interface, experienced users are free at any time to intervene in the functions of the interface device **10** on system level. The interface device **10** thus provides a universal solution which can cover the entire spectrum of possible data transmit/receive devices.

What is claimed is:

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, 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,

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, 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

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.

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.

3. An interface device according to claim 1,

wherein the memory means comprises a buffer to buffer data to be transferred between the data transmit/receive device and the host device.

4. An interface device according to claim 1,

wherein the multi-purpose interface of the host device is an SCSI interface and the first connecting device also comprises an SCSI interface.

5. An interface device according to claim 1,

wherein the processor is a digital signal processor.

6. An interface device according to claim 2,

wherein the data to be transferred from the data transmit/receive device to the host device in the interface device is formatted in a suitable format for a hard disk present in the host device.

7. An interface device according to claim 2,

which further comprises a root directory and virtual files which are present on the signaled hard disk drive and which can be accessed from the host device.

8. An interface device according to claim 7,

wherein the virtual files comprise a configuration file in text format which are stored in the memory means and using which the user can configure the interface device for a specific data transmit/receive device.

9. An interface device according to claim 7,

wherein the virtual files comprise batch files or executable files for the microprocessor means which are stored in the interface device in order to perform data processing, independently of the host device, of data received via the second connecting device.

10. An interface device according to claim 7,

wherein the virtual files comprise batch files or executable files for the host device which are stored in the interface device.

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,

where the interface device is configured using 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 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 specific driver for the multi-purpose interface, and

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.

12. An interface device according to claim 11, wherein in addition to the first connecting device of the interface device, there is a further input/output device at the multi-purpose interface of the host device, and wherein the interface device can communicate directly with said further input/output device via the specific driver for the multi-purpose interface.

13. An interface device according to claim 11,

wherein the multi-purpose interface is an SCSI interface, and wherein the specific driver for the multi-purpose interface is an ASPI manager.

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;

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 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 usual driver for the input/output device, 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.

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.

* * * * *

Exhibit B

US006895449B2

(12) **United States Patent**
Tasler

(10) **Patent No.: US 6,895,449 B2**
(45) **Date of Patent: May 17, 2005**

(54) **FLEXIBLE INTERFACE FOR COMMUNICATION BETWEEN A HOST AND AN ANALOG I/O DEVICE CONNECTED TO THE INTERFACE REGARDLESS THE TYPE OF THE I/O DEVICE**

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(73) Assignee: **Labortechnik Tasler GmbH**, Wuerzburg (DE)

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(21) Appl. No.: **10/219,105**

(22) Filed: **Aug. 15, 2002**

(65) **Prior Publication Data**

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Related U.S. Application Data

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(30) **Foreign Application Priority Data**

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Mar. 3, 1998 (EP) PCT/EP98/01187

(51) **Int. Cl.**[7] **G06F 13/14**
(52) **U.S. Cl.** **710/16**; 710/8; 710/64; 709/220
(58) **Field of Search** 710/8, 16, 64, 710/11, 12, 15, 62, 63; 703/23, 24, 25; 709/220, 222

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,548,783	A *	8/1996	Jones et al.	710/16
5,596,628	A *	1/1997	Klein	379/93.11
5,628,030	A *	5/1997	Tuckner	710/64
6,012,113	A *	1/2000	Tuckner	710/64
6,266,711	B1 *	7/2001	Ishikawa et al.	710/8
6,363,081	B1 *	3/2002	Gase	370/466
6,725,293	B1 *	4/2004	Nakayama et al.	710/36
6,728,844	B2 *	4/2004	Sanada et al.	711/152

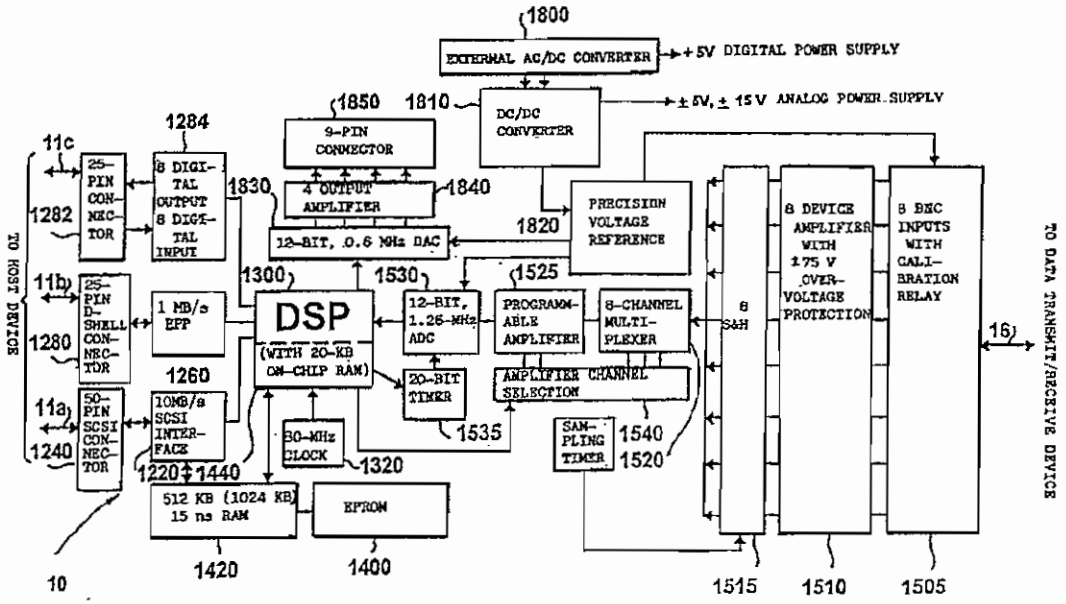
* cited by examiner

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Assistant Examiner—Harold Kim
(74) *Attorney, Agent, or Firm*—Glenn Patent Group; Michael A. Glenn

(57) **ABSTRACT**

An interface device (**10**) provides fast data communication between a host device with input/output interfaces and a data transmit/receive device, wherein the interface device (**10**) comprises a processor means (**13**), a memory means (**14**), a first connecting device (**12**) for interfacing the host device with the interface device, and a second connecting device (**15**) for interfacing the interface device (**10**) with the data transmit/receive device. The interface device (**10**) is configured by the processor means (**13**) and the memory means (**14**) in such a way that, when receiving an inquiry from the host device via the first connecting device (**12**) as to the type of a device attached to the host device, regardless of the type of the data transmit/receive device, the interface device sends a signal to the host device via the first connecting device (**12**) which signals to the host device that it is communicating with an input/output device.

18 Claims, 2 Drawing Sheets



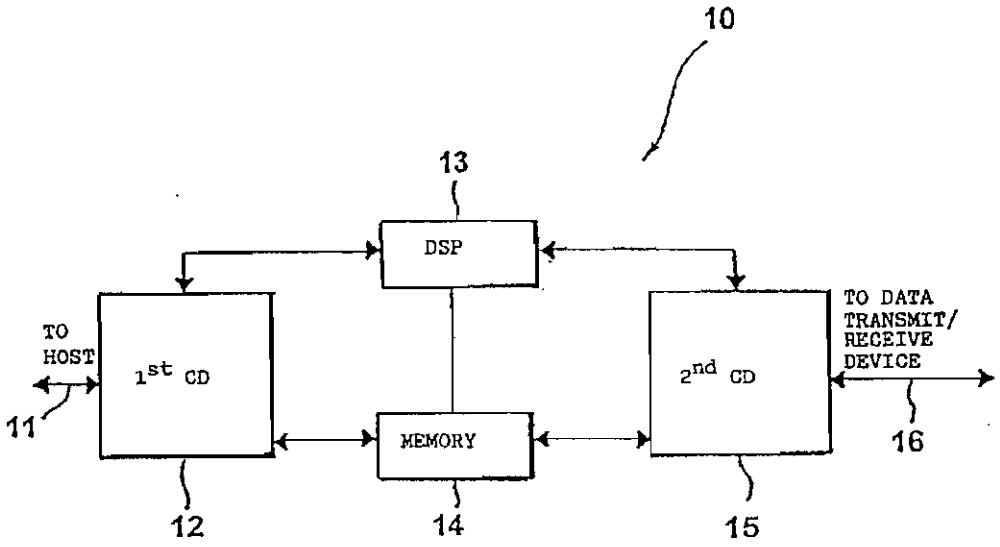

10
13
DSP
TO HOST
1st CD
2nd CD
TO DATA TRANSMIT/ RECEIVE DEVICE
MEMORY
11
12
14
15
16

FIG.1

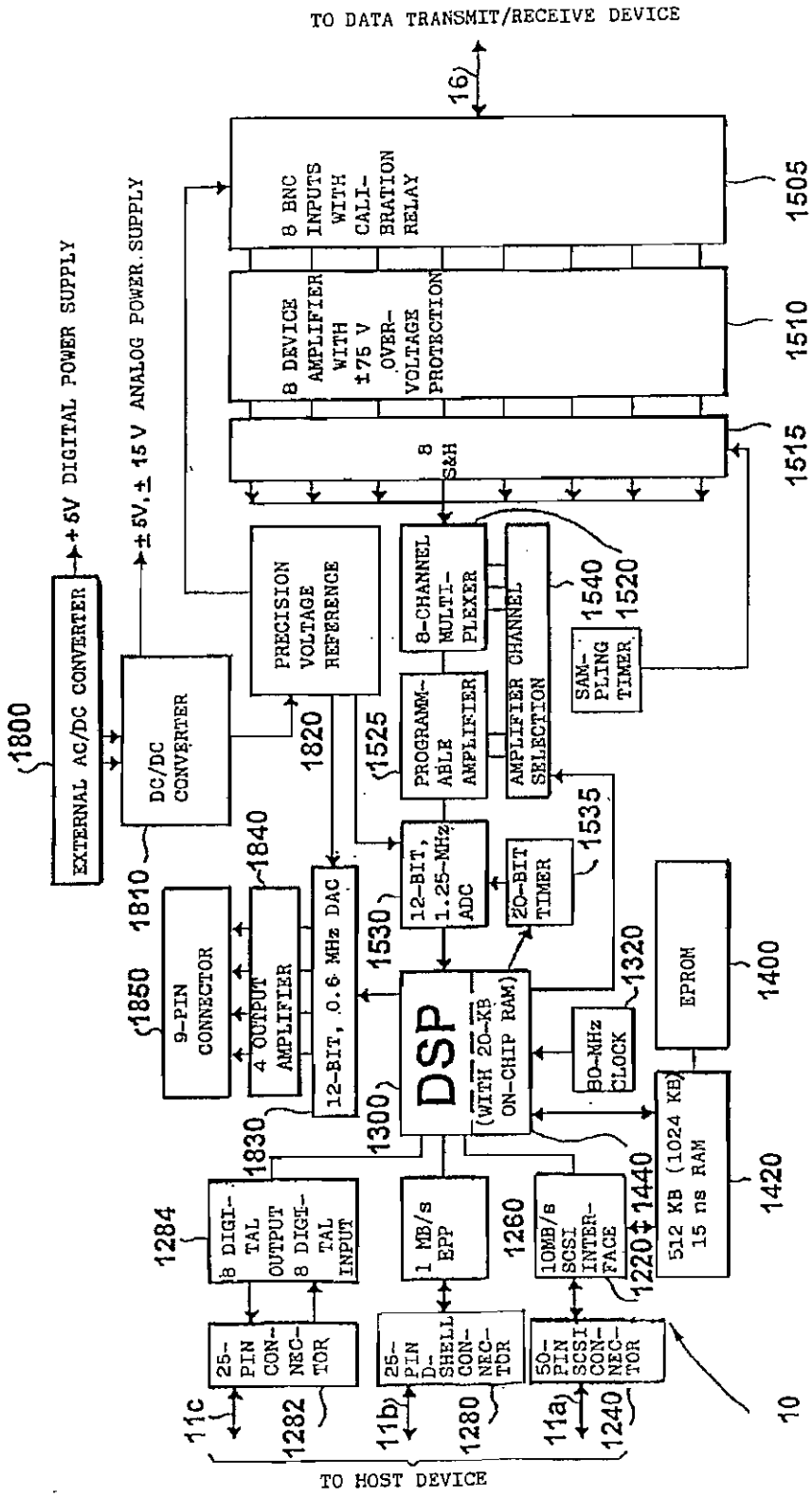

TO DATA TRANSMIT/RECEIVE DEVICE
16
8 BNC INPUTS WITH CALI-BRATION RELAY
1505
8 DEVICE AMPLIFIER WITH ±75 V OVER-VOLTAGE PROTECTION
1510
8 S&H
1515
+5V DIGITAL POWER SUPPLY
±5V, ± 15 V ANALOG POWER SUPPLY
EXTERNAL AC/DC CONVERTER
1800
DC/DC CONVERTER
1810
PRECISION VOLTAGE REFERENCE
1820
8-CHANNEL MULTI-PLEXER
1540
PROGRAMM-ABLE AMPLIFIER
1525
AMPLIFIER CHANNEL SELECTION
1520
SAM-PLING TIMER
12-BIT, 1.25-MHz ADC
1530
20-BIT TIMER
1535
12-BIT, 0.6 MHz DAC
1840
4 OUTPUT AMPLIFIER
9-PIN CONNECTOR
1850
DSP
(WITH 20-KB ON-CHIP RAM)
1300
80-MHz CLOCK
1320
EPROM
1400
512 KB (1024 KB) 15 ns RAM
1420
1440
1830
8 DIGI-TAL OUTPUT
8 DIGI-TAL INPUT
1284
1 MB/s EPP
1260
10MB/s SCSI INTER-FACE
1220
25-PIN CON-NEC-TOR
1282
25-PIN D-SHELL CON-NEC-TOR
1280
50-PIN SCSI CON-NEC-TOR
1240
11c
11b
11a
10
TO HOST DEVICE

FIG.2

FLEXIBLE INTERFACE FOR COMMUNICATION BETWEEN A HOST AND AN ANALOG I/O DEVICE CONNECTED TO THE INTERFACE REGARDLESS THE TYPE OF THE I/O DEVICE

RELATED APPLICATIONS

This application is a divisional application of copending application Ser. No. 09/331,002 filed Jun. 14, 1999.

DESCRIPTION

The present invention relates to the transfer of data and in particular to interface devices for communication between a computer or host device and a data transmit/receive device from which data is to be acquired or with which two-way communication is to take place.

Existing data acquisition systems for computers are very limited in their areas of application. Generally such systems can be classified into two groups.

In the first group host devices or computer systems are attached by means of an interface to a device whose data is to be acquired. The interfaces of this group are normally standard interfaces which, with specific driver software, can be used with a variety of host systems. An advantage of such interfaces is that they are largely independent of the host device. However, a disadvantage is that they generally require very sophisticated drivers which are prone to malfunction and which limit data transfer rates between the device connected to the interface and the host device and vice versa. Further, it is often very difficult to implement such interfaces for portable systems and they offer few possibilities for adaptation with the result that such systems offer little flexibility.

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. A field service technician of the system manufacturer visits the customer and reads system log files generated by the diagnostic radiology system by means a portable computer or laptop for example. If the fault cannot be localized or if the fault is intermittent, it will be necessary for the service technician to read not only an error log file but also data from correct operation. It is apparent that in this case fast data transfer and rapid data analysis are necessary.

Another case requiring the use of an interface could be, for example, when an electronic measuring device, e.g. a multimeter, is attached to a computer system to transfer the data measured by the multimeter to the computer. Particularly when long-term measurements or large volumes of data are involved is it necessary for the interface to support a high data transfer rate.

From these randomly chosen examples it can be seen that an interface may be put to totally different uses. It is therefore desirable that an interface be sufficiently flexible to permit attachment of very different electrical or electronic systems to a host device by means of the interface. To prevent operator error, it is also desirable that a service technician is not required to operate different interfaces in different ways for different applications but that, if possible, a universal method of operating the interface be provided for a large number of applications.

To increase the data transfer rates across an interface, the route chosen in the second group of data acquisition systems

for the interface devices was to specifically match the interface very closely to individual host systems or computer systems. The advantage of this solution is that high data transfer rates are possible. However, a disadvantage is that the drivers for the interfaces of the second group are very closely matched to a single host system with the result that they generally cannot be used with other host systems or their use is very ineffective. Further, such types of interface have the disadvantage that they must be installed inside the computer casing to achieve maximum data transfer rates as they access the internal host bus system. They are therefore generally not suitable for portable host systems in the form of laptops whose minimum possible size leaves little internal space to plug in an interface card.

A solution to this problem is offered by the interface devices of IOtech (business address: 25971 Cannon Road, Cleveland, Ohio 44146, USA) which are suitable for laptops such as the WaveBook/512 (registered trademark). The interface devices are connected by means of a plug-in card, approximately the size of a credit card, to the PCMCIA interface which is now a standard feature in laptops. The plug-in card converts the PCMCIA interface into an interface known in the art as IEEE 1284. The said plug-in card provides a special printer interface which is enhanced as regards the data transfer rate and delivers a data transfer rate of approximately 2 MBps as compared with a rate of approx. 1 MBps for known printer interfaces. The known interface device generally consists of a driver component, a digital signal processor, a buffer and a hardware module which terminates in a connector to which the device whose data is to be acquired is attached. The driver component is attached directly to the enhanced printer interface thus permitting the known interface device to establish a connection between a computer and the device whose data is to be acquired.

In order to work with the said interface, an interface-specific driver must be installed on the host device so that the host device can communicate with the digital signal processor of the interface card. As described above, the driver must be installed on the host device. If the driver is a driver developed specifically for the host device, a high data transfer rate is achieved but the driver cannot be easily installed on a different host system. However, if the driver is a general driver which is as flexible as possible and which can be used on many host devices, compromises must be accepted with regard to the data transfer rate.

Particularly in an applicatinn for multi-tasking systems in which several different tasks such as data acquisition, data display and editing are to be performed quasi-simultaneously, each task is normally assigned a certain priority by the host system. A driver supporting a special task requests the central processing system of the host device for processor resources in order to perform its task. Depending on the particular priority assignment method and on the driver implementation, a particular share of processor resources is assigned to a special task in particular time slots. Conflicts arise if one or more drivers are implemented in such a way that they have the highest priority by default, i.e. they are incompatible, as happens in practice in many applications. It may occur that both drivers are set to highest priority which, in the worst case, can result in a system crash.

EP 0685799 A1 discloses an interface by means of which several peripheral devices can be attached to a bus. An interface is connected between the bus of a host device and various peripheral devices. The interface comprises a finite state machine and several branches each of which is assigned to a peripheral device. Each branch comprises a

data manager, cycle control, user logic and a buffer. This known interface device provides optimal matching between a host device and a specific peripheral device.

The specialist publication IBM Technical Disclosure Bulletin, Vol. 38, No. 05, page 245; "Communication Method between Devices through FDD Interface" discloses an interface which connects a host device to a peripheral device via a floppy disk drive interface. The interface consists in particular of an address generator, an MFM encoder/decoder, a serial/parallel adapter and a format signal generator. The interface makes it possible to attach not only a floppy disk drive but also a further peripheral device to the FDD host controller of a host device. The host device assumes that a floppy disk drive is always attached to its floppy disk drive controller and communication is initiated if the address is correct. However, this document contains no information as to how communication should be possible if the interface is connected to a multi-purpose interface instead of to a floppy disk drive controller.

It is the object of the present invention to provide an interface device for communication between a host device and a data transmit/receive device whose use is host device-independent and which delivers a high data transfer rate.

This object is achieved by an interface device according to claim **1** or **12** and by a method according to claim **15**.

The present invention is based on the finding that both a high data transfer rate and host device-independent use can be achieved if a driver for an input/output device customary in a host device, normally present in most commercially available host devices, is utilized. 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. As however the hard disk interfaces in common host devices which can be, for example, IBM PCs, IBM-compatible PCs, Commodore PCs, Apple computers or even workstations, are the interfaces with the highest data transfer rate, the hard disk driver is utilized in the preferred embodiment of the interface device of the present invention. Drivers for other storage devices such as floppy disk drives, CD-ROM drives or tape drives could also be utilized in order to implement the interface device according to the present invention.

As described in the following, the interface device according to the present invention is to be attached to a host device by means of a multi-purpose interface of the host device which can be implemented, for example, as an SCSI interface or as an enhanced printer interface. Multi-purpose interfaces comprise both an interface card and specific driver software for the interface card. The driver software can be designed so that it can replace the BIOS driver routines. Communication between the host device and the devices attached to the multi-purpose interface then essentially takes place by means of the specific driver software for the multi-purpose interface and no longer primarily by means of BIOS routines of the host device. Recently however drivers for multi-purpose interfaces can also already be integrated in the BIOS system of the host device as, alongside classical input/output interfaces, multi-purpose interfaces are becoming increasingly common in host devices. It is of course also possible to use BIOS routines in parallel with the specific driver software for the multi-purpose interface, if this is desired.

The interface device according to the present invention comprises a processor means, a memory means, a first connecting device for interfacing the host device with the interface device, and a second connecting device for interfacing the interface device with the data transmit/receive device. The interface device is configured by the processor means and the memory means in such a way that the interface device, when receiving an inquiry from the host device via the first connecting device as to the type of a device attached to the host device, sends a signal, regardless of the type of the data transmit/receive device, to the host device via the first connecting device which signals to the host device that it is communicating with an input/output device. The interface device according to the present invention therefore simulates, both in terms of hardware and software, the way in which a conventional input/output device functions, preferably that of a hard disk drive. As support for hard disks is implemented as standard in all commercially available host systems, the simulation of a hard disk, for example, can provide host device-independent use. The interface device according to the present invention therefore no longer communicates with the host device or computer by means of a specially designed driver but by means of a program which is present in the BIOS system (Basic Input/Output System) and is normally precisely matched to the specific computer system on which it is installed, or by means of a specific program for the multi-purpose interface. Consequently, the interface device according to the present invention combines the advantages of both groups. On the one hand, communication between the computer and the interface takes place by means of a host device-specific BIOS program or by means of a driver program which is matched to the multi-purpose interface and which could be regarded as a "device-specific driver". On the other hand, the BIOS program or a corresponding multi-purpose interface program which operates one of the common input/output interfaces in host systems is therefore present in all host systems so that the interface device according to the present invention is host device-independent.

In the following, preferred embodiments of the present invention will be explained in more detail with reference to the drawings enclosed, in which:

FIG. **1** shows a general block diagram of the interface device according to the present invention; and

FIG. **2** shows a detailed block diagram of an interface device according to a preferred embodiment of the present invention.

FIG. **1** shows a general block diagram of an interface device **10** according to the present invention. A first connecting device **12** of the interface device **10** can be attached to a host device (not shown) via a host line **11**. The first connecting device is attached both to a digital signal processor **13** and to a memory means **14**. The digital signal processor **13** and the memory means **14** are also attached to a second connecting device **15** by means of bi-directional communication lines (shown for all lines by means of two directional arrows). The second connecting device can be attached by means of an output line **16** to a data transmit/receive device which is to receive data from the host device or from which data is to be read, i.e. acquired, and transferred to the host device. The data transmit/receive device itself can also communicate actively with the host device via the first and second connecting device, as described in more detail in the following.

Communication between the host system or host device and the interface device is based on known standard access commands as supported by all known operating systems (e.g. DOS, Windows, Unix). Preferably, the interface device according to the present invention simulates a hard disk with

a root directory whose entries are "virtual" files which can be created for the most varied functions. 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. Optionally, the host device can send an instruction, known by those skilled in the art as "Test Unit Ready", to the interface device to request more precise details regarding the queried device.

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 drive. If the host device receives the response that a drive is present, it then sends a request to the interface device **10** to read the boot sequence which, on actual hard disks, normally resides on the first sectors of the disk. The digital signal processor **13**, whose operating system in stored in the memory means **14**, responds to this instruction by sending to the host device a virtual boot sequence which, in the case of actual drives, includes the drive type, the starting position and the length of the file allocation table (FAT), the number of sectors, etc., known to those skilled in the art. Once the host device has received this data, it assumes that the interface device **10** according to a preferred embodiment of the present invention is a hard disk drive. In reply to an instruction from the host device to display the directory of the "virtual" hard disk drive simulated by the interface device **10** with respect to the host device, the digital signal processor can respond to the host device in exactly the same way as a conventional hard disk would, namely by reading on request the file allocation table or FAT on a sector specified in the boot sequence, normally the first writable sector, and transferring it to the host device, and subsequently by transferring the directory structure of the virtual hard disk. Further, it is possible that the FAT is not read until immediately prior to reading or storing the data of the "virtual" hard disk and not already at initialization.

In a preferred embodiment of the present invention, the digital signal processor **13**, which need not necessarily be implemented as a digital signal processor but may be any other kind of microprocessor, comprises a first and a second command interpreter. The first command interpreter carries out the steps described above whilst the second command interpreter carries out the read/write assignment to specific functions. If the user now wishes to read data from the data transmit/receive device via the line **16**, the host device sends a command, for example "read file xy", to the interface device. As described above, the interface device appears to the host device as a hard disk. The second command interpreter of the digital signal processor now interprets the read command of the host processor as a data transfer command, by decoding whether "xy" denotes, for example, a "real-time input" file, a "configuration" file or an executable file, whereby the same begins to transfer data from the data transmit/receive device via the second connecting device to the first connecting device and via the line **11** to the host device.

Preferably, the volume of data to be acquired by a data transmit/receive device is specified in a configuration file described in the following by the user specifying in the said configuration file that a measurement is to last, for example, five minutes. To the host device the "real-time input" file then appears as a file whose length corresponds to the anticipated volume of data in those five minutes. Those skilled in the art know that communication between a processor and a hard disk consists of the processor transferring to the hard disk the numbers of the blocks or clusters or sectors whose contents it wishes to read. By reference to the FAT the processor knows which information is contained in which block. In this case, communication between the host device and the interface device according to the present invention therefore consists of the very fast transfer of block numbers and preferably of block number ranges because a virtual "real-time input" file will not be fragmented. If the host device now wants to read the "real-time input" file, it transfers a range of block numbers to the interface device, whereupon data commences to be received via the second connecting device and data commences to be sent to the host device via the first connecting device.

In addition to the digital signal processor instruction memory, which comprises the operating system of the digital signal processor and can be implemented as an EPROM or EEPROM, the memory means **14** can have an additional buffer for purposes of synchronizing data transfer from the data transmit/receive device to the interface device **10** and data transfer from the interface device **10** to the host device.

Preferably, the buffer is implemented as a fast random access memory or RAM buffer.

Further, from the host device the user can also create a configuration file, whose entries automatically set and control various functions of the interface device **10**, on the interface device **10** which appears to the host device as a hard disk. These settings can be, for example, gain, multiplex or sampling rate settings. By creating and editing a configuration file, normally a text file which is simple to understand with little prior knowledge, users of the interface device **10** are able to perform essentially identical operator actions for almost any data transmit/receive devices which can be attached to the second connecting device via the line **16**, thus eliminating a source of error arising from users having to know many different command codes for different applications. In the case of the interface device **10** according to the present invention it is necessary for users to note the conventions of the configuration file once only in order to be able to use the interface device **10** as an interface between a host device and almost any data transmit/receive device.

As a result of the option of storing any files in agreed formats in the memory means **14** of the interface device **10**, taking into account the maximum capacity of the memory means, any enhancements or even completely new functions of the interface device **10** can be quickly implemented. Even files executable by the host device, such as batch files or executable files (BAT or EXE files), and also help files can be implemented in the interface device, thus achieving independence of the interface device **10** from any additional software (with the exception of the BIOS routines) of the host device. On the one hand, this avoids licensing and/or registration problems and, on the other hand, installation of certain routines which can be frequently used, for example an FFT routine to examine acquired time-domain data in the frequency domain, is rendered unnecessary as the EXE files are already installed on the interface device **10** and appear in the virtual root directory, by means of which the host device can access all programs stored on the interface device **10**.

In a preferred embodiment of the present invention in which the interface device **10** simulates a hard disk to the host device, the interface device is automatically detected and readied for operation when the host system is powered up or booted. This corresponds to the plug-and-play standard which is currently finding increasingly widespread use. The user is no longer responsible for installing the interface device **10** on the host device by means of specific drivers which must also be loaded; instead the interface device **10** is automatically readied for operation when the host system is booted.

For persons skilled in the art it is however obvious that the interface device **10** is not necessarily signed on when the computer system is powered up but that a special BIOS routine or a driver for a multi-purpose interface can also be started on the host device during current operation of the computer system in order to sign on or mount the interface device **10** as an additional hard disk. This embodiment is suitable for larger workstation systems which are essentially never powered down as they perform, e.g. mail functions or monitor processes which run continuously, for example, in multi-tasking environments.

In the interface device according to the present invention an enormous advantage is to be gained, as apparent in the embodiment described in the following, in separating the actual hardware required to attach the interface device **10** to the data transmit/receive device from the communication unit, which is implemented by the digital signal processor **13**, the memory means **14** and the first connecting device **12**, as this allows a plurality of dissimilar device types to be operated in parallel in identical manner. Accordingly, many interface devices **10** can be connected to a host device which then sees many different "virtual" hard disks. In addition, any modification of the specific hardware symbolized by the second connecting device **15** can be implemented essentially without changing the operation of the interface device according to the present invention. Further, an experienced user can intervene at any time on any level of the existing second connecting device by making use of the above mentioned option of creating a configuration file or adding or storing new program sections for the second connecting device.

An important advantage of the interface device **10** of the present invention is that it also permits extremely high data transfer rates by using, for data interchange, the host device-own BIOS routines which are optimized for each host device by the host device manufacturer or BIOS system manufacturer, or by using driver programs which are normally optimized and included by the manufacturers of multi-purpose interfaces. Furthermore, due to the simulation of a virtual mass storage device, the data is managed and made available in such a way that it can be transferred directly to other storage media, e.g. to an actual hard disk of the host device without, as it were, intervention of the host device processor. The only limitation to long-term data transfer at high speed is therefore imposed exclusively by the speed and the size of the mass storage device of the host device. This is the case as the digital signal processor **13** already formats the data read by the data transmit/receive device via the second connecting device **15** into block sizes suitable for a hard disk of the host device, whereby the data transfer speed is limited only by the mechanical latency of the hard disk system of the host device. At this point, it should be noted that normally data flow from a host device must be formatted in blocks to permit writing to a hard disk and subsequent reading from a hard disk, as known by those skilled in the art.

The said data transfer rate can be increased further by setting up a direct memory access (DMA) or RAM drive in the host system. As those skilled in the art know, the setting up of a RAM drive requires processor resources of the host device, with the result that the advantage of writing the data to a hard disk drive of the host device essentially without the need for processor resources is lost.

As described above, a data buffer can be implemented in the memory means **14** to permit independence in terms of time of the data transmit/receive device attached to the second connecting device from the host device attached to the first connecting device. This guarantees error-free operation of the interface device **10** even for time-critical applications in multi-tasking host systems.

FIG. **2** shows a detailed block diagram of an interface device **10** according to the present invention.

A digital signal processor (DSP) **1300** is, in a manner of speaking, the heart of the interface device **10**. The DSP can be any DSP but preferably has a 20-MB on-chip random access memory (RAM). Certain instruction sets, for example, can be stored in the RAM already integrated in the DSP. An 80-MHz clock generator is attached to the DSP **1300** in order to synchronize the DSP. The DSP implements a fast Fourier transformation (FFT) in real time and also optional data compression of the data to be transferred from the data transmit/receive device to the host device in order to achieve greater efficiency and to permit interoperation with host devices which have a smaller memory.

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: an SCSI interface **1220** and a 50-pin SCSI connector **1240** for attachment to an SCSI interface present on most host devices or laptops. The SCSI (small computer system interface) interface **1220** translates the data received via the SCSI connector **1240** into data understood by the DSP **1300**, as known by those skilled in the art. Further, the first connecting device **12** comprises an EPP (enhanced parallel port) with a data transfer rate of approx. 1 MBps which delivers a more moderate data transfer rate of 1 MBps by comparison to the data transfer rate of 10 MBps of the SCSI interface. The EPP **1260** is connected to a 25-pin D-shell connector **1280** to permit attachment to a printer interface of a host device for example. Optionally, the first connecting device **12** also comprises a 25-pin connector **1282** which permits the attachment of 8 digital outputs and 8 digital inputs **1284** at a host device.

Preferably, the second connecting device comprises 8 BNC inputs with the calibration relay **1505**, a block **1510** with 8 device amplifiers with an overvoltage protection of ±75 V, this block being connected in turn to 8 sample/hold (S&H) circuits **1515**. The calibration relays are relays which permit controlled changeover between a test voltage and a calibration reference voltage. Each sample/hold circuit is connected to a corresponding input of an 8-channel multiplexer **1520** which feeds its output signals via a programmable amplifier **1525** into an analog/digital converter (ADC) with 12 bit and 1.25 MHz **1530** and to the DSP **1300**. The ADC **1530** is controlled by means of a 20-bit timer **1535**, as known by persons skilled in the art. The programmable amplifier **1525** and the 8-channel multiplexer **1520** are controlled via an amplifier channel selection circuit **1540** which is in turn controlled by the DSP **1300**.

The complete interface device **10** is supplied with power by an external AC/DC converter **1800** which delivers a digital supply voltage of ±5 V and is attached to a DC/DC

converter **1810** which can deliver analog supply voltages of ±5 V and ±15 V as required for the interface device **10**. Further, the DC/DC converter controls a precision voltage reference **1820** which controls the 8 BNC inputs **1505** and the ADC **1530** as well as a digital/analog converter (DAC) **1830** which permits, via an output amplifier block with 4 output amplifiers **1840** and a 9-pin connector **1850**, analog output direct from the DSP **1300** to an output device, e.g. printer device or monitor device, which can be attached via the 9-pin connector **1850**, thus providing the option of monitoring the data transferred to the host device or also, for example, of viewing an FFT to obtain rapid and comprehensive data analysis without using processor time of the host device.

In FIG. **2** the memory means **14** of FIG. **1** is implemented by an EPROM **1400** which, in a preferred embodiment of the present invention, contains the operating system of the digital signal processor **1300**. A random access memory with an access time of 15 ns and a size of 512 KB or optionally 1024 KB **1420** serves as a data buffer to achieve independence in terms of time of the output line **16** from the output lines **11***a*, **11***b* and **11***c* to the data transmit/receive device and to the host device respectively. As described above, in a preferred embodiment of the present invention the digital signal processor **1300** already contains a 20-KB on-chip RAM **1440** which can store certain instruction sets, functions and also smaller application software units.

The connection, symbolized by the line **16**, of the interface device **10** to any data transmit/receive device implements, by means of the blocks **1505–1535**, an analog input with a sampling rate of 1.25 MHz and quantization of 12 bits. There are 8 channels with an overvoltage protection of ±75 V. By means of the programmable amplifier **1525** the channels can be programmed independently of each other in voltage ranges up to a maximum of ±10 V. Unused channels can be grounded internally to reduce channel intermodulation. The block **1515** is implemented as a monolithic high-precision, high-speed sample/hold amplifier for simultaneous sampling of all channels. The precision voltage reference **1820** provides a high-precision, temperature-compensated monolithic energy gap voltage reference for auto-calibration of each channel and each gain. Further, offset fine adjustment for each channel is implemented by the same.

The blocks **1830**, **1840** and **1850** implement a direct analog output for the digital signal processor **1300**, and the DAC **1830** provides a data transfer rate of 625 kHz and a quantization of 12 bits. The block **1840** comprises 4 channels with a common output latch.

Further, the interface device **10** comprises a digital input/output device implemented by the blocks **1284** and **1282**. Here there are 8 digital inputs, 8 digital outputs with a common latch, and the digital port can be attached preferably to a side panel of the interface device **10** so that the port itself can easily be accessed.

The digital signal processor **1300** provides on-board digital data processing. In particular, it is a high-performance DSP with a clock speed of 80 MHz and a 20-bit timer **1535**.

As described above, the first connecting device **12** comprises the SCSI interface **1220** with a peak transfer rate of 10 MBps. An optional PCMCIA-to-SCSI adapter permits high-speed communication with laptop computers which are desirable and in widespread use, particularly by mobile service technicians. The EPP **1260** with its associated connector **1280** permits data transfer at a more moderate rate.

As described above, the interface device **10** is supplied with power by means of an external AC/DC adapter which has a universal power input (85–264 VAC, 47–63 Hz). Interference suppression complies with the standards EN 55022, curve B and FFC, Class B). Further, it is also in accordance with international safety regulations (TÜV, UL, CSA). The interface device **10** is externally shielded and achieves a value of 55 dB at 30–60 MHz and a value of approximately 40 dB at 1 GHz, and therefore complies with the MILSTD 285-1 standard.

As described above, communication between the host device and the multi-purpose 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. Generally speaking, this multi-purpose interface driver has the task of moving precisely specified SCSI commands from the host system program to the host system SCSI adapter. For this reason, the command set is almost identical to that of the SCSI interface itself. Essentially, only status and reset commands for the host adapter have been added.

The ASPI driver can be used if the hard disk was not already addressable at boot time or if the SCSI-related BIOS routines of the host computer were still disabled. Here too, the steps needed to initialize the interface device, preferably as a virtual hard disk, are similar to the steps taken when initializing at boot time.

In general terms, the ASPI manager comprises two sides. One side is the proprietary, hardware-oriented side. It is responsible for converting all commands into a form required by the corresponding multi-purpose interface. The hardware-oriented side of the ASPI driver is therefore matched to a very specific type of multi-purpose interface or SCSI interface. The other side is known as the user software side. This side is totally independent of the proprietary operating characteristics of the SCSI adapter and is therefore identical for all SCSI interfaces. This permits SCSI programming which is however independent of the individual SCSI adapter types.

In contrast to communication between the host device and the interface device according to the present invention on the basis of a BIOS driver, the use of such an ASPI driver for communication between the host device and the interface device according to the present invention allows various further possibilities of the SCSI multi-purpose interface to be exploited. In the case described above, the interface device which preferably signs on and behaves as a virtual hard disk is detected by the BIOS driver of the host computer at boot time and is configured as a hard disk. This step does not however support active requests sent by the interface device to the host computer. If however the virtual hard disk wishes to write data actively to, for example, a hard disk of the host computer or wishes to initiate communication with the processor of the host computer, the host computer must recognize the request of the virtual hard disk and tolerate a further issuer of instructions on its bus. If the interface device behaves solely like a virtual hard disk, it would always receive and never issue commands. The BIOS has no objections to an additional issuer of commands that actively wishes to place data on the bus of the host device but the BIOS does not support the host device in recognizing corresponding requests of the interface device or in granting the interface device permission to access the bus.

Using the ASPI manager the interface device according to the present invention can now obtain active access to an SCSI hard disk of the host device connected to the same SCSI bus which, in contrast to the interface device, cannot be a virtual but a real SCSI mass storage device or also a further interface device according to the present invention. Thereupon, the interface device according to the present invention can write the desired data to the SCSI hard disk of the host computer totally independently of the host computer or can communicate with the same in some other manner. The interface device according to the present invention therefore initially behaves passively as a virtual hard disk and then, as required and using the driver software for the multi-purpose interface, actively on the same SCSI bus. This means however that the interface device according to the present invention, using a driver software for the multi-purpose interface which comprises the BIOS routines customary in host devices and simultaneously provides the option of active participation, can, regardless of the type of the data transmit/receive device attached to the second connecting device, behave initially as a virtual and at the same time passive hard disk but can, as required, participate actively on the bus so as to be able to initiate communication directly with other SCSI hard disks of the host device by bypassing the processor of the host device.

Using a standard interface of a host device, the interface device according to the present invention permits communication with any host device. By simulating an input/output device to the host device and, in a preferred embodiment, by simulating a virtual mass storage device, the interface device **10** is automatically supported by all known host systems without any additional sophisticated driver software. The simulation of a freely definable file structure on the "virtual" hard disk provides simple operation and expansion options and, through the implementation of any programs, independence from special software implemented on the host device. Help files included on the interface device **10** and plug-and-play support ensure ease of use even in portable, flexible host devices. Despite the very simple user interface, experienced users are free at any time to intervene in the functions of the interface device **10** on system level. The interface device **10** thus provides a universal solution which can cover the entire spectrum of possible data transmit/receive devices.

What is claimed is:

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:

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,

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 storage device customary in a host 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

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

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.

3. An interface device in accordance with claim **2** wherein the configuration file is a text file.

4. An interface device in accordance with claim **2** wherein the executable file includes a Fast Fourier Transform routine for transforming data acquired by the second connecting device into the frequency domain and for examining frequency domain data.

5. An interface device in accordance with claim **2** wherein the executable file includes a data compression routine for compressing data to be transmitted from the data transmit/receive device to the host device.

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.

7. An interface device in accordance with claim **6** wherein the virtual boot sequence includes a starting position and a leugth of a file allocation table, an indication of a type of the storage device or a number of sectors of the storage device.

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.

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.

10. An interface device in accordance with claim **1** wherein the directory structure includes a data file for transferring data from the data transmit/receive device to the host device wherein the processor is arranged to interpret a request from the host to read the data file as a request for a data transfer from the data transmit/receive device to the host, so that data is transmitted from the second connecting device to the first connecting device and to the host.

11. An interface device in accordance with claim **10** wherein the directory structure further includes a configuration file for specifying a time period for a measurement by the data transmit/receive device, wherein the interface device is arranged for simulating a length of the data file to the host that corresponds to an anticipated volume of data produced by the data transmit/receive device in the specified time period.

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.

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.

14. An interface device in accordance with claim 1 wherein the functions are gain, multiplex or synchronization settings of the second connecting device.

15. An interface device in accordance with claim 1 wherein the storage device is a hard disk.

16. An interface device in accordance with claim 1 wherein the memory has 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.

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, 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.

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, 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.

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EXHIBIT F

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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

PAPST LICENSING GmbH & Co. KG Plaintiffs, v. SAMSUNG TECHWIN CO., AND SAMSUNG OPTO-ELECTRONICS AMERICA, INC., Defendants.	CASE NO. PA (JCx) *, CV 07 4249 **COMPLAINT FOR PATENT INFRINGEMENT** **JURY TRIAL DEMANDED**

Plaintiff, Papst Licensing GmbH & Co. KG, by and through its attorneys, for its Complaint, alleges as follows:

Jurisdiction and Venue

1. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code. Jurisdiction is proper pursuant to 28 U.S.C. §§ 1331 and 1338.

2. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391 and 1400.

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EXHIBIT F

The Parties

3. Papst Licensing GmbH & Co. KG ("Papst Licensing") is a company duly organized and existing under the laws of The Federal Republic of Germany with its principal place of business headquartered at Bahnofstrasse 33, 78112 St. Georgen, Germany.

4. Upon information and belief, Samsung Techwin Co. ("Samsung Techwin") is a foreign for-profit corporation organized and existing under the laws of Korea, and is located at 647-9, Yeoksam-Dong, Kangnam-gu, Seoul, 135, 080, Korea. Upon information and belief, Samsung Techwin is the parent corporation of and carries out its business in the United States through its subsidiary, Samsung Opto-Electronics America, Inc. ("Samsung America"), a corporation duly organized under the laws of New Jersey, having a principal place of business located at 18600 Broadwick St., Rancho Dominguez, California 90220. Hereinafter Samsung Techwin and Samsung America will be referred to collectively as "the Samsung Defendants."

5. The Samsung Defendants are in the business of designing, marketing and selling digital cameras, including the products at issue in this litigation.

Count 1—Patent Infringement (U.S. Patent No. 6,470,399)

6. The allegations contained in paragraphs 1 through 5 are incorporated by this reference as though fully set forth herein.

7. On October 22, 2002, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 6,470,399 ("the '399 patent") with Michael Tasler as the inventor.

8. Papst Licensing owns all right, title and interest in and to the '399 patent and has not assigned or transferred these rights to anyone at any time.

9. Upon information and belief, the Samsung Defendants have directly infringed and continue to infringe the '399 patent by making, using, offering to sell or selling within the United States and/or importing into the United States, including in this judicial district, digital cameras covered by the claims of the '399 patent.

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10. Upon information and belief, the Samsung Defendants have actively induced others and/or contributed to the infringement of the '399 patent.

11. Papst Licensing has notified the Samsung Defendants of Papst Licensing's ownership of the '399 patent and the potential claim of infringement against the Samsung Defendants. Despite this notice, the Samsung Defendants have continued to infringe and, upon information and belief, will continue to infringe the '399 patent until enjoined by this Court.

12. The Samsung Defendants' infringement of the '399 patent is willful, intentional and constitutes an exceptional case under 35 U.S.C. § 285.

13. As a result of the Samsung Defendants' infringement of the '399 patent, Papst Licensing has suffered and continues to suffer damages in an amount to be proven at trial and other injuries not capable of compensation through the payment of money damages.

Count 2—Patent Infringement (U.S. Patent No. 6,470,449)

14. The allegations contained in paragraphs 1 through 13 are incorporated by this reference as though fully set forth herein.

15. On May 17, 2005, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 6,895,449 ("the '449 patent") with Michael Tasler as the inventor.

16. Papst Licensing owns all right, title and interest in and to the '449 patent and has not assigned or transferred these rights to anyone at any time.

17. Upon information and belief, the Samsung Defendants have directly infringed and continue to infringe the '449 patent by making, using, offering to sell or selling within the United States and/or importing into the United States, including in this judicial district, digital cameras covered by the claims of the '449 patent.

18. Upon information and belief, the Samsung Defendants have actively induced others and/or contributed to the infringement of the '449 patent.

19. Papst Licensing has notified the Samsung Defendants of Papst Licensing's

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ownership of the '449 patent and the potential claim of infringement against the Samsung Defendants. Despite this notice, the Samsung Defendants have continued to infringe and, upon information and belief, will continue to infringe the '449 patent until enjoined by this Court.

20. The Samsung Defendants' infringement of the '449 patent is willful, intentional and constitutes an exceptional case under 35 U.S.C. § 285.

21. As a result of the Samsung Defendants' infringement of the '449 patent, Papst Licensing has suffered and continues to suffer damages in an amount to be proven at trial and other injuries not capable of compensation through the payment of money damages.

WHEREFORE, Papst Licensing respectfully requests that this Court enter judgment in its favor and against the Samsung Defendants on all counts of the complaint and award Papst Licensing the following relief:

a. compensatory damages in an amount to be determined at trial;

b. increased damages in an amount equal to three times the amount of compensatory damages found or assessed;

c. reimbursement for reasonable attorney's fees and costs;

d. pre-judgment and post-judgment interest on the damages and costs awarded, including pre-judgment and post-judgment interest on any enhanced damages, attorneys' fees and costs awarded;

e. preliminary and permanent injunctive relief prohibiting any further infringement by the Samsung Defendants and all of their officers, agents, servants, employees and attorneys and all those persons in active concert or participation with them who receive actual notice of the order by personal service or otherwise; and

f. such other relief, award or remedy, legal or equitable, as this Court deems proper.

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Jury Demand

Papst Licensing demands a trial by jury for all claims and issues so triable.

DATED: June 28, 2007

VENABLE LLP
Doug C. Emhoff
Jeffrey M. Tanzer

By: _____
Attorneys for Plaintiff
PAPST LICENSING GmbH & Co. KG

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Civ. No. 07-415 ***

UNITED STATES OF AMERICA
JUDICIAL PANEL ON MULTIDISTRICT LITIGATION

In Re Papst Licensing, GmbH,
PATENT LITIGATION

This document relates to Civil Action Nos. 06 CV 1751 (Casio), 07 CV 1118 (Fuji DC), 07 CV 3401 (Fuji NDIL), 07 CV 415 (Olympus), 07 CV 4249 (Samsung)

MDL No. _____

CORPORATE DISCLOSURE STATEMENT OF
PAPST LICENSING GmbH & CO. KG

Pursuant to Rule 5.3 of the Rules of Procedure of the Judicial Panel on Multidistrict Litigation, Papst Licensing GmbH & Co. KG discloses that it has no parent corporations and that there are no publicly held companies that own 10% of more of Papst Licensing GmbH & Co. KG's stock.

Dated: July 9, 2007

PAPST LICENSING GmbH & CO. KG

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FILED
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U.S. DISTRICT COURT
DISTRICT OF DELAWARE

CERTIFICATION OF SERVICE

The undersigned hereby certified that a true and correct copy of the CORPORATE DISCLOSURE STATEMENT OF PAPST LICENSING GmbH & CO. KG was served via First Class U.S. Mail, on this 9th day of July, 2007, in accordance with the attached Service List.

Campbell Killefer