

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

Canon et al.,
Petitioners,

v.

Papst Licensing GmbH & Co. KG.,
Patent Owner

IPR2016-01199

IPR2016-01200

U.S. Patent Nos. 8,966,144 and 8,504,746

Patent Owner Papst's Demonstratives

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The '144 and '746 Tasler Patents

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(12) United States Patent Tasler (10) Patent No.: **US 8,966,144 B2**
(45) Date of Patent: ***Feb. 24, 2015**

(54) **ANALOG DATA GENERATING AND PROCESSING DEVICE HAVING A MULTI-USE AUTOMATIC PROCESSOR** (58) **Field of Classification Search**
USPC 710/1, 15, 63
See application file for complete search history.

(75) Inventor: **Michael Tasler, Würzburg (DE)** (56) **References Cited**

(73) Assignor: **Papst Licensing GmbH & Co. KG, St. Georgen (DE)** U.S. PATENT DOCUMENTS
3,714,635 A 1/1973 Hamilton et al.
3,805,245 A 4/1974 Brooks et al.
(Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1333 days.
This patent is subject to a terminal disclaimer.

(21) Appl. No.: **11/467,073** FOREIGN PATENT DOCUMENTS
DE 3024773 A1 1/1987
DE 88 0 3359 3/1989
(Continued)

(22) Filed: **Aug. 24, 2006** OTHER PUBLICATIONS
"OpenHCI Specification for USB" by Compaq, Microsoft, National Semiconductor, Oct. 10, 1996, Release V1.0a, pp. 1-146.
(Continued)

(65) **Prior Publication Data**
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G06F 13/12 (2006.01)
G06F 13/38 (2006.01)
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87 Claims, 2 Drawing Sheets

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(12) United States Patent Tasler (10) Patent No.: **US 8,504,746 B2**
(45) Date of Patent: ***Aug. 6, 2013**

(54) **ANALOG DATA GENERATING AND PROCESSING DEVICE FOR USE WITH A PERSONAL COMPUTER** (58) **Field of Classification Search**
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See application file for complete search history.

(75) Inventor: **Michael L. Tasler, Würzburg (DE)** (56) **References Cited**

(73) Assignor: **Papst Licensing GmbH & Co. KG, St. Georgen (DE)** U.S. PATENT DOCUMENTS
3,714,635 A 1/1973 Hamilton et al.
3,805,245 A 4/1974 Brooks et al.
(Continued)

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

(21) Appl. No.: **12/891,443** FOREIGN PATENT DOCUMENTS
DE 3024773 A1 1/1987
DE 88 0 3359 3/1989
(Continued)

(22) Filed: **Sep. 27, 2010** OTHER PUBLICATIONS
Rathgeber: "Plug and play is almost here," May 1994, Electronic Business Bytes, v26, pp. 1-3.
(Continued)

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(30) **Foreign Application Priority Data**
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G06F 13/12 (2006.01)
G06F 13/38 (2006.01)

(52) U.S. Cl. (2013.01); **G06F 13/385** (2013.01); **G06F 3/00** (2013.01); **G06F 3/0605** (2013.01); **G06F 3/0667** (2013.01);
(Continued)

35 Claims, 2 Drawing Sheets

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The '144 and '746 Tasler Patents

“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”

(‘144 patent at 7:22-26, ‘144 Response at 21)

“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 the means of a program which is present in the BIOS system ...”

(‘144 patent at 4:23-27; ‘144 Response at 5)

“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 is automatically supported by all known host systems without any additional sophisticated driver software.”

(‘144 patent at 11:38-44; ‘144 Response at 6)

Automatic File Transfer Process

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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 analog data generating and processing device (ADGPD), comprising:
 an input/output (i/o) port;
 a program memory;
 a data storage memory;
 a sensor designed to transmit data;
 a processor operatively interfaced with the i/o port, the program memory, the data storage memory and the sensor;
 wherein the processor is adapted to be involved in a data generation process by which the sensor generates analog

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data, the analog data is processed, and the processed analog data is stored in the data storage memory as at least one file of digitized analog data;
 wherein the processor also is adapted to be involved in an automatic recognition process in which, when the i/o port is operatively interfaced with a multi-purpose interface of a computer, the processor executes at least one instruction set stored in the program memory and thereby causes at least one parameter which provides identification information regarding the ADGPD to be automatically sent through the i/o port and to the multi-purpose interface of the computer (a) without requiring any end user to load any software onto the computer at any time, (b) without requiring any end user to interact with the computer to set up a file system in the ADGPD at any time, (c) before a time when the computer is able to receive the at least one file of digitized analog data from the data storage memory and (d) regardless of the identity of a manufacturer of the computer, wherein the at least one parameter is consistent with the ADGPD being responsive to commands issued from a customary driver;
 wherein the processor is further adapted to be involved in an automatic file transfer process in which, when the i/o port is operatively interfaced with the multi-purpose interface of the computer, and after the at least one parameter has been received by the multi-purpose interface of the computer, the processor executes at least one other instruction set stored in the program memory and thereby causes the at least one file of digitized analog data to be transferred to the computer regardless of the identity of the manufacturer of the computer and without requiring any user-loaded file transfer enabling software to be loaded on or installed in the computer at any time.

2. The ADGPD of claim 1, wherein the i/o port, the program memory, the data storage memory, and the processor form an interface device that is designed to have the analog data transferred to it from the sensor.

3. The ADGPD of claim 2, wherein the interface device comprises a portable interface device.

4. The ADGPD of claim 2, wherein the interface device comprises a flexible interface device.

5. The ADGPD of claim 2, wherein the interface device comprises a universal interface device.

6. The ADGPD of claim 2, wherein the interface device comprises a stand alone interface device.

7. The ADGPD of claim 2, wherein the interface device includes a parallel logic circuit.

8. The ADGPD of claim 2, wherein the interface device includes a SCSI interface circuit.

9. The ADGPD of claim 2, wherein the interface device is designed so that the sensor is detachable from the interface device.

10. The ADGPD of claim 2, wherein the interface device allows for a plurality of different data transmit devices to be attached thereto and detached therefrom.

11. The ADGPD of claim 2, wherein the sensor is designed to be readily disconnected from the interface device.

12. The ADGPD of claim 2, wherein the interface device is designed so that a user can attach the sensor to or detach the sensor from the interface device.

13. The ADGPD of claim 1, wherein the i/o port comprises a parallel port.

14. The ADGPD of claim 1, wherein the i/o port comprises a SCSI connector.

“wherein the processor is further adapted to be involved in an automatic file transfer process in which, when the i/o port is operatively interfaced with the multi-purpose interface of the computer, and after the at least one parameter has been received by the multi-purpose interface of the computer, the processor executes at least one other instruction set stored in the program memory and thereby causes the at least one file of digitized analog data to be transferred to the computer regardless of the identity of the manufacturer of the computer and without requiring any user -loaded file transfer enabling software to be loaded on or installed in the computer at any time.”

Automatic File Transfer Process

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of the invention, multi-purpose interfaces can be, *but are not necessarily*, integrated into the BIOS system. *Id.* at 3:59–4:1. The Specification also makes clear that “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.*” *Id.* at 10:23–29 (emphases added). Interpreting the negative limitations to exclude the drivers for a multi-purpose interface would be unreasonable when the very same claim, claim 1, also requires a multi-purpose interface. *Id.* at 12:6–7. Claim 29, which depends from claim 1, also requires a SCSI driver to issue a SCSI INQUIRY command. *Id.* at 13:38–40. *Id.* at 13:38–40. Therefore, the parties’ proposed construction would be inconsistent with the Specification and those claims.

In view of the foregoing, we construe the claim phrases—“without requiring any end user to load software onto the computer at any time” and “without requiring any user-loaded file transfer enabling software to be loaded on or installed in the computer at any time”—as “without requiring the end user to install or load specific drivers or software for the ADGPD beyond that included in the operating system, BIOS, *or drivers for a multi-purpose interface or SCSI interface,*” adding “drivers for a multi-purpose interface or SCSI interface” to the parties’ proposed claim construction.

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Board Construction of “without requiring any user-loaded file transfer enabling software to be loaded”: “without requiring the end user to install or load specific drivers or software beyond that included in the operating system, BIOS, or drivers for a multi-purpose interface or SCSI interface.”

(‘144 Decision at 16; See also ‘746 Decision at 9)

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