

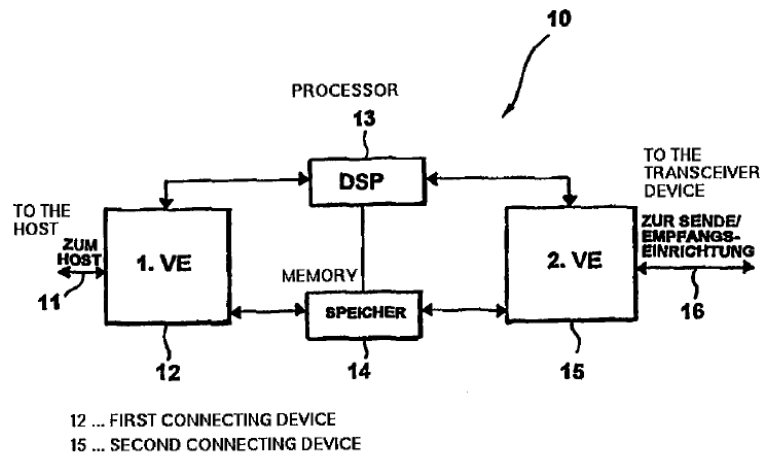
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(54) Title: FLEXIBLE INTERFACE

(57) Abstract

The invention relates to an interface device (10) which provides fast communication of data between a host device with input/output interface and a data transceiver device, wherein said interface device (10) comprises a processor (13), a memory (14), a first connection device (12) providing an interface connection between the host device and the interface device, and a second connection device (15) providing an interface connection between the interface device (10) and the transceiver device. The interface device (10) is configured by the processor (13) and the memory (14) in such a way that it sends out a signal via the first connection device (12) to the host device, irrespective of the type of data transceiver involved, when an enquiry is made by the host device via the first connection device relating to the type of device connected to the host device. This signal informs the host device that it is communicating with an input/output device.



[bilingual]

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## Flexible interface

### Description

The present device relates to the transmission of data and particularly to interface devices for the communication between a computer or host device and a data transceiver, from which data shall be obtained and/or with which a bilateral communication shall occur.

Data collection systems for computers are largely limited in their range of use. In general, they can be divided into two groups.

In the first group host devices or computer systems are connected via an interface to a device, whose data shall be gathered. The interfaces of this group are commonly standard interfaces which can be used via particular driver software for various host systems. One advantage of these interface devices is given in that they are largely independent from the host device. However, it is disadvantageous here that they generally require very expensive drivers, which are susceptible to malfunction and limit the data transmission rate between the device connected to the interface and the host device, and vice versa. Further implementations of these interfaces for mobile systems are possible with difficulty only in some cases and the options for adaptations are low, resulting in these systems showing little flexibility.

The devices from which data shall be gathered cover the entire bandwidth of electro-technology. For example, in one typical scenario it must be assumed that a customer who for example operates an X-Ray diagnostics device in the field of medical technology, reports an error. A service technician of the device manufacturer will then go to said customer and read the system protocol data prepared by the X-Ray diagnostics device, for example via a mobile computer or laptop.

If then the error cannot be localized, it will be necessary for the service technician not only to read an error protocol file but also data from ongoing operation. It is obvious that here rapid data transmission as well as quick data analysis are necessary.

Another case for using an interface can for example be the connection of an electronic measuring device, e.g., a multimeter, to a computer system, in order to transfer data measured by the multimeter to the computer. In particular in case of long-term measurements or when large data volumes develop it is necessary that the interface allows a high data transmission rate.

From these arbitrarily selected examples it is discernible that the potential applications of an interface can be entirely different from each other. It is therefore desirable that an interface is so flexible that via an interface very different electric or electronic systems can be connected to a host device. In order to avoid user errors, it is further desired that a service technician is not forced to operate different interfaces in a different fashion for each respective application, but that if possible a universal interface operation is generated for a large number of applications.

In order to increase the data transmission rate via an interface the path was chosen in the second group of interface devices to strongly adapt the interface to individual host systems or computer systems. The advantage of this solution comprises that high transfer rates are possible. However it is disadvantageous that the drivers for the interfaces of the second group are largely adapted to a single host system, so that in general they cannot be used for other host systems, or only in a very ineffective fashion.

Further, these types of interfaces show the disadvantage that they must be mounted in the computer housing because they access the internal host bus system in order to yield maximum data transmission rates. Therefore they are generally not suitable for mobile host systems in the form of laptops, which based on their size as small as possible show no available interior volume for plugging in an interface card.

A solution for this problem is offered in the form of interface devices of the company IOtech (business address: 25971 Cannon Road, Cleveland, Ohio 44146, U.S.A.), which are suitable for laptops such as the model WaveBook/512 (registered trademark). The interface devices are connected by plugging in a perhaps credit card-sized chip-card with the PCMCIA-interface, which in the meantime has become standard for laptops. The plug-in card leads to a transformation of the PCMCIA interface to an interface IEEE 1284 known from prior art. The above-mentioned plug-in card generates a special printer interface, expanded with regards to data rates, which yields a data transmission rate of approximately 2 MB/s, compared to a rate of approximately 1 MB/s of printer interfaces of prior art. The interface device of prior art generally comprises a driver component, a digital signal processor, a buffer, and a hardware assembly, which ends in a connector at which a device is connected whose data shall be gathered. The driver component is directly connected to the expanded printer interface, allowing the known interface device to generate a connection between a computer and the device whose data shall be gathered.

In order to work with the above-mentioned interface a driver, specific for said interface, must be installed in the host device so that the host device can communicate with the digital signal processor of the interface card. As already mentioned, the driver must be installed on the host device.

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