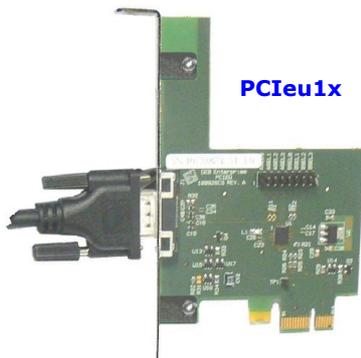




PCI Express on Cable UpStream Board: PCIEU-1X

The PCI Special Interest Group (PCI-SIG), developer of the PCI and PCI Express (PCIe) specifications, has recently announced the PCIe External Cabling 1.0 Specification, which extends PCIe bus connection outside the computer box. Cabled PCIe is a cabled serial bus used for high-performance interconnection of PCIe system components. Since "cabled PCIe" is based on PCIe standard, it provides a scalable, high-bandwidth, low-latency bus performances. The possibility of extending PCIe over a cable creates valuable design opportunities in those high-performance measurement and automation applications which would use a host PC for data processing and analysis.



PCIed-15-IO

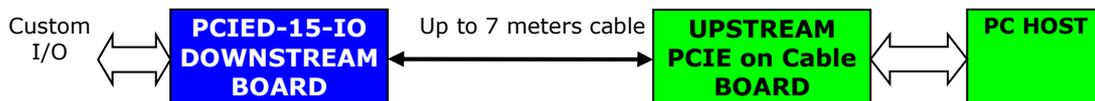
Features

- Upstream "PCIe on cable" interface
- Peripheral to host wake up support
- Host to peripheral remote power on support
- Remote down stream board hot insertion support
- 3 LED Indicators:
 - TX Link Active LED
 - RX Link Active LED
 - Remote Present LED

Description

This product embed one of the first architecture aiding the high-end embedded applications in implementing a PCIe compatible cable expansion/extension. PCI (Peripheral Component Interconnect) Express (name PCIe) is a scalable I/O serial bus technology set to replace parallel PCI bus. Using a PCIe cable is possible to extend the PCI Express bus to approximately six to seven meters from the host CPU module and without any circuitry usually implemented for signal equalization and to suppress the inherent signals noise.

Transmitting the host PCIe bus over copper cables opens a new world of applications, now available for the product's users. The PCI Express Cable allows the user to split the PCIe host, included in a high-end computing core, by the remote embedded I/O subsystems. This makes easier to fulfil the environmental and thermal requirements of both sub-systems. Moreover, the host and I/O system may have different form factors, better suited to the location or performance that each sub-system requires. For example, a high-end, dual Intel Xeon class host system could provide the user with computing power a high-speed data link to a high-end embedded I/O subsystem based on MicroTCA, PC/104, 3U CompactPCI Express, or proprietary form factor.



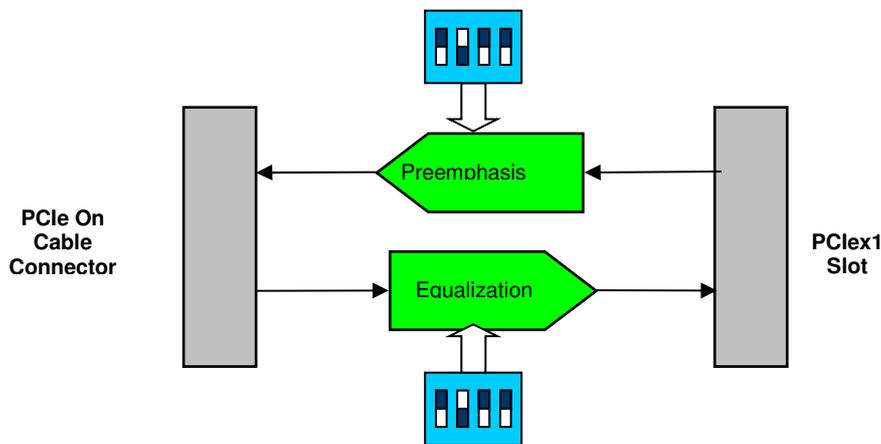
A compelling application of PCI Express Cable includes an expansion system and a set of products that extends the host bus of a system on an arbitrary distance from the host enclosure to an expansion enclosure. This approach enables designers to insert more add-in boards into the system than the host system was originally designed for. For example, consider an expansion system using an host interface board, cable, and 19-slot expansion chassis to extend a 4-slot ATX motherboard host system to a 20-slot system. Expanded systems in excess of 100 add-in boards are likely possible utilizing the PCIe expansion boards. Compared with the expansion systems currently on the market, the "PCIe cable" solution has a

unique competitive advantage: with PCI Express acting as both the host bus and the cabled expansion protocol, no software drivers or conversion from the host bus to the expansion protocol are required. This avoids one of the root causes of data throughput latency in the communication link. PCI Express offers a high level of software compatibility and performance scalability.

Lot of embedded applications for the PCIe cable are available on the system-embedded market. For example, a high-speed docking station link for a high-end handheld or portable device useful in medical services, inventory control applications, or commercial laptops could employ PCI Express Cable. Another PCIe architecture is represented by a cabled solution addressed in a noncontinuous backplane. This could involve several small backplanes in a non-conventional system configuration. In more traditional applications, an internal cable can replace the riser card of a 1U server where the add-in cards are mounted perpendicularly to the motherboard.

Board Description

PCIEux1 board GEB contains PCIe On Cable driver with user selectable preemphasis amplifier to send data to remote (downstream) board and PCIe On Cable receiver (amplifier) with user selectable equalization. The Dispswitch are factory setted to 3mt cable length, the PCIEux1 board is tested with it setting. The setting normally allow the use of cables from 1mt to 7mt without any change.



Specifications and Operating Conditions

Power supply voltage (current)	3.3 V +/- 5% (0.25A Typical, 0.4A Max.)
Operative temperature range.	0 / +55 °C
Storage temperature range.	-40 / +150 °C

Ordering Information

Product Name	GEB Code	Description
PCIEU-1X	100926A1	PCI Express Desk Top PC Upstream Board
PCIED-15-IO	100816A1	PCIe on cable downstream board, 53 I/O, No External Ram, interface to Samtec FFSD cable and QSH-030-01-L-D-A-RT1 connector



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