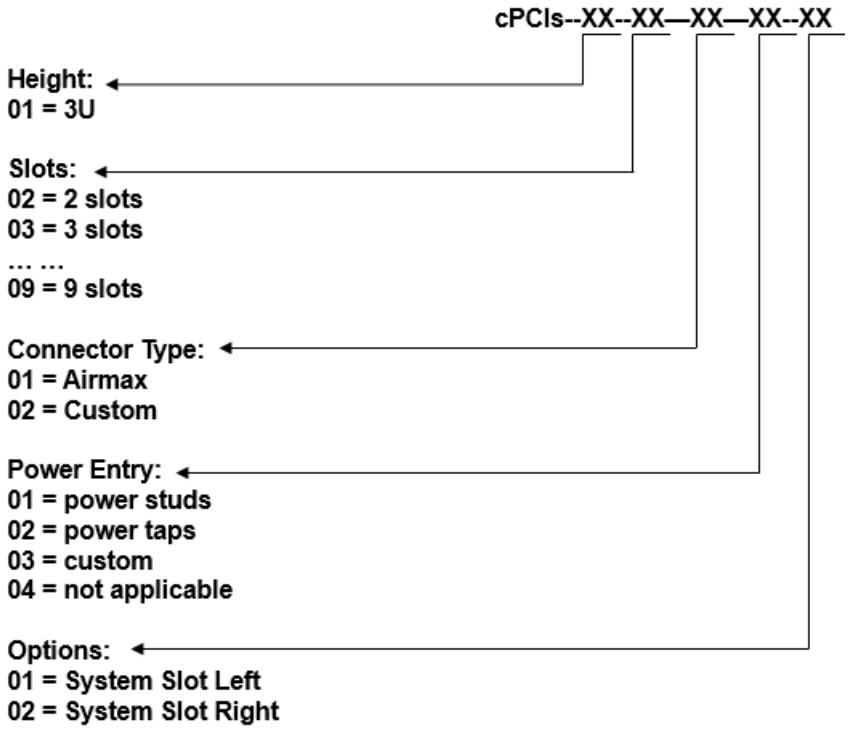
Amphenol-BSI CompactPCI Serial Datasheet

Amphenol-BSI cPCI SERIAL Backplanes
Amphenol-BSI's cPCI SERIAL high performance backplanes are available in a 3U form factor. All cPCI SERIAL backplanes are compliant to PCIMG cPCI SERIAL specifications. ABSI can customize the cPCI SERIAL backplane against our customer's specific requirements.

Amphenol-BSI cPCI SERIAL backplane order configuration part number table.
The following configuration table provides the part numbering structure applicable to the full range of cPCI SERIAL backplanes on offer from Amphenol-BSI. We can engage with you on any cPCI SERIAL backplane requirement that you may have. Please contact us for further details.



Configuration part number example
CPCI-01-04-01-02-01 specifies a 3U 4 slot cPCI SERIAL backplane, configured with Amphenol AICC Airmax connectors and power taps for power entry. The system slot of CPCI-02-04-01-02-01 is at left most slot.

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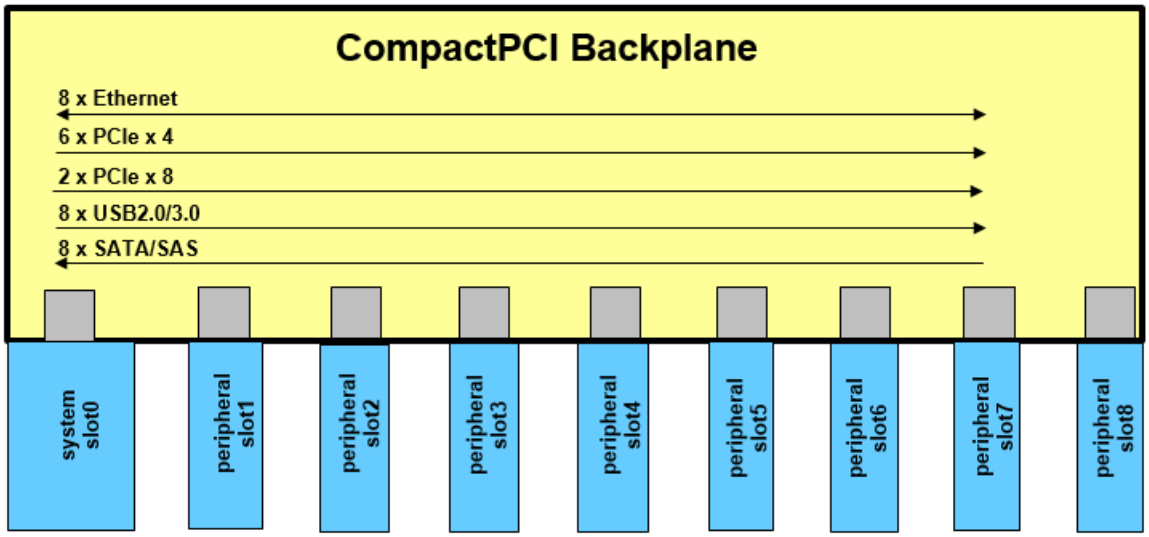
Description

As PCI bus technology has moved from a parallel interface to fast serial point-to-point interconnects, the popular and very successful parallel CompactPCI specification PICMG 2.0 was significantly extended and enhanced by the newer CompactPCI Serial standard, PICMG cPCI-S.0, in 2011.

CompactPCI serial backplane is based on the established PICMG 2.0 CompactPCI standard, which uses the parallel PCI bus for communication among a system's card components. In contrast to this, CompactPCI Serial uses only serial point to point connection. CompactPCI Serial (PICMG cPCI-S.0) supports high-speed serial data transmission of up to 12 GB/s. It uses the Euro card 3U format with high speed interconnect connectors.

With CompactPCI Serial, the CompactPCI architecture moves to serial high-speed interconnects, and more data can be transferred at higher speeds using PCI Express. Additional high speed interfaces, including Ethernet, SATA, and USB are supported. Star topology is used in USB,SATA,SAS, PCIE interface. Full Mesh topology is used in Ethernet Interface. Rear side RTM connector is an option for user who want to install rear side plug in card into chassis. Hot Swap of boards during operation is supported, as it was with original CompactPCI.

Each system is organized as follows: a System Slot, usually the CPU and often a complete single board computer, provides 8 PCI Express links, 8 SATA/SAS, 8 USB 2.0/3.0 and 8 Ethernet interfaces plus signals for general system management and up to eight peripheral slots.



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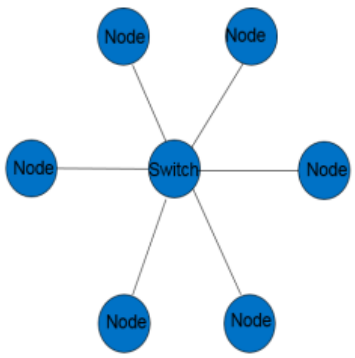
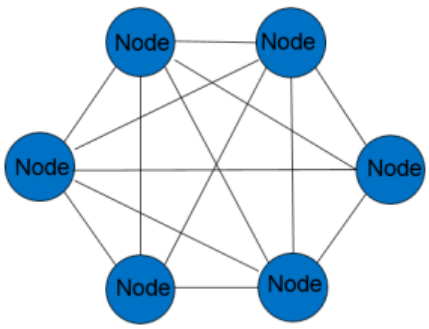
Routing Topology

Star Topology:

The structure of computers is slowly changing from bus-based interconnections between interface controllers to a star topology built up of serial point-to-point connections. CompactPCI Serial incorporates this star architecture: one system slot can control up to eight peripheral slots. Two of these connections can be PCI Express x8 fat pipes. At the same time, CompactPCI Serial does not need bridges, switched fabrics, or special backplanes. The star connection by standard includes PCI Express, SATA/SAS, and USB.



Full Mesh Topology:
In cPCI serial applications, Ethernet interface require full connections between each other. In this case each node makes connection with each node in the system.



System slot:
All Amphenol-BSI cPCI serial backplanes indicate which slot is the system slot and which is the peripheral slot by marks on the backplane. The system slot can be customized at the left most or right most of cPCI serial bus slot.

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Amphenol-BSI cPCI serial Features:

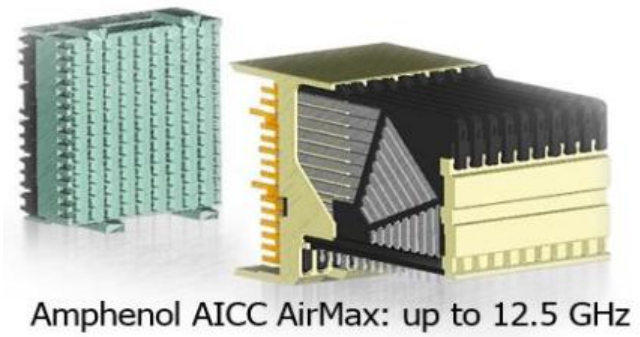
- Compliant to PICMG CompactPCI-S.0 specification
- 3U height Europe card form factor
- One system slots (left end or Right end)
- Up to Eight peripheral slots
- Single Star topology in USB,SATA,PCIE links
- Mesh topology in Ethernet links
- Data rate support: up to 12Gbps
- Optional to add Rear Side I/Os
- Amphenol AICC high speed Airmax VS connector
- System management interface
- Professional press-fit process
- RoHS compliant

PCB information:

- PCB size 132.8mm X 128.7mm X 4.5mm
- 18 layers board
- Slot pitch 0.8”
- Independent power and ground layers for power distribution
- PCB Material: Megtron 4 or better SI performance

Connector Type:

The PICMG subcommittee drafting the standard has proposed a new, denser backplane connector type with a 2 mm x 1.4 mm pitch that supports higher transfer rates of up to 12 Gbit/s without a need for bridges or switches. It offers up to 184 pin pairs on a 3U board. A major difference compared to CompactPCI is that with CompactPCI Serial the plug connector is on the board, while the receptacle is on the backplane. This approach is intended to make the standard more robust by avoiding twisted pins on the backplane: If a pin fails, only the plug-in board must be exchanged. The system slot of CompactPCI Serial has six connectors: P1 to P6. On peripheral boards only P1 is mandatory, while P2 to P6 are optional.
Amphenol AICC Airmax connector is the default connector in cPCI serial applications.



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Power entry solution
Amphenol-BSI cPCI SERIAL backplanes have a few power entry solutions to meet our customer's configuration requirements. Choose between power tags, screws or studs as the power input. We also offer industry standard power entry options on cPCI SERIAL backplanes to meet your power entry requirement.

Power tags example ERNI 214787:
Press-fit power tags is an option on the cPCI SERIAL backplane. Each power tap can carry 40A current.

Power Studs example PEM KFH-632-8-ET
Use of press-fit studs is also an option on cPCI SERIAL backplane. Each power tap can carry at least 30A current.

Custom
Our customers can also specify a custom power entry solution that they will use.

Amphenol-BSI cPCI SERIAL Backplane Sizes

3U Dimension Table on 0.8"slot pitch

Slot Numbers	Height in Inch	Height in mm	Length in Inch	Length in mm
3	5.067	128.7	2.360	59.96
4	5.067	128.7	3.160	80.28
5	5.067	128.7	3.960	100.60
6	5.067	128.7	4.760	120.92
7	5.067	128.7	5.560	141.24
8	5.067	128.7	6.360	161.56
9	5.067	128.7	7.160	181.88

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Amphenol-BSI
Amphenol-BSI is an industry leader of backplane and system solutions. Amphenol-BSI has been a leading designer and manufacture of backplanes for more than 30 years.

Amphenol-BSI deliver:
- Industry leading interconnect technology
- Advanced printed circuit capabilities and partnerships
- Innovative backplane system design and manufacturing
- Integrated design / applications engineering services
- Flexible, global support and supply chain management
- Most extensively tooled Backplane Supplier in the industry
- Industry leading Mechanical and SI test solutions
- Lowest cost solution on highest performance backplane

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