

PCI Express® DirectAttached™ CEM Card Edge Connectors

32GT/S NRZ DIFFERENTIAL SIGNALING FOR NEXT-GENERATION SYSTEMS

Amphenol's 1.0mm pitch DirectAttached™ CEM (DA CEM) is a hybrid card edge solution with high-speed signal pins designed to directly attach to the cable to eliminate PCB trace loss and press-fit termination type power pins for better rework.

As compared to typical PCIe® riser card solutions, the DirectAttached™ CEM connectors provide SI loss improvement of 0.5db to 1.0db when used with a PCIe® riser cable.

Although the connector footprint differs from standard PCIe® CEM, the mating interface meets standard PCIe® AIC specifications and is backward compatible with Gen 4/3/2/1

Amphenol has tooled Gen 5 DA CEM with configurations available for X8 and X16, at 32GT/s data rate to meet PCIe® Gen 5.

- Backward mating compatible with Gen 4/3/2/1 and meets standard PCIe® interface.
- Wide range of positions available, X8 and X16 are tooled
- Flexible mounting ears to meet different customer requirements



TARGET MARKETS



FEATURES

- Support X8, X16 standard links as per PCI-SIG CEM specification
- Backward mating following PCIe® CEM standards
- High-speed pins designed to directly attach to cable
- RoHS compliant
- Low-halogen material

BENEFITS

- Provides excellent performance and additional options for extreme bandwidth application
- Outperform Gen 5 specification, but also backward mating compatible to Gen 1/2/3/4 specification
- Eliminate the PCB trace signal loss
- Meets environmental, health and safety requirements
- Meets next-generation requirements

TECHNICAL INFORMATION

MATERIAL

- Contact Base Metal: Copper Alloy
- Contact Area Finish: Gold over Nickel
- Solder Area Finish: Tin over Nickel
- Housing Material: High-temperature thermoplastic (UL94V-0) for reflow soldering or thermoplastic (UL94V-0) for wave soldering. Color: Black or off-white
- Metal Board Locks: Copper Alloy
- Board Locks Finish: Tin over Nickel

ELECTRICAL PERFORMANCE

- Contact Resistance: 30m max. initially with 10m max. change after environmental exposures
- Current Rating: 1.1A min. per pin for the 8 power pins and 8 nearest ground pins
- Signal Integrity Summary
- The part series shown on this datasheet support PCI Express® high speed electrical requirements for 2.5Gb/s (PCIe® Gen 1), 5.0Gb/s (PCIe® Gen 2), 8.0Gb/s (PCIe® Gen 3), 16.0Gb/s (PCIe® Gen 4) and 32.0Gb/s (PCIe® Gen 5) with the exception of those part series specifically noted as PCIe® Gen 1 in the part number tables

MECHANICAL PERFORMANCE

- Durability Rating: 50 cycles min.
- PCB Insertion Force: 1.15N max. per contact pair
- PCB Removal Force: 0.15N min. per contact pair

APPROVALS & CERTIFICATION

- CSA

PACKAGING

- Hard or Soft Tray

ENVIRONMENTAL

- EIA-364-1000.01. The test groups/sequences and durations are derived from the following requirements:
- Durability (mating/unmating) rating of 50 cycles
- Field Temperature: 65°C
- Field Life: Seven years
- Temperature Life (preconditioning): 92 hours at 105°C
- Temperature Life: 168 hours at 105°C
- Mixed Flowing Gas: 10 days

SPECIFICATIONS

- Industry
 - PCI Express® Card Electromechanical Specification
 - PCI Express® Module Electromechanical Specification
 - For more information on the applicable PCI-SIG specifications, visit www.pcisig.com
- Amphenol
 - GS-12-1406 PCI Express® group of connectors

TARGET MARKETS/APPLICATIONS



Desktop
PCs
Servers
Server Riser
Workstations



Desktop PCs
Industrial PCs
Notebook PCs
Solar Panel Inverter



Respirators

SI PERFORMANCE

DA CEM PCIe® Gen 5 SI simulation performance meet @ 32GT/s

PART NUMBERS

Description	Performance	Termination	Position	Part Numbers
PCIe® Gen 5	32GT/s	DA CEM x8	98 pos	CEMDA098003020X
PCIe® Gen 5	32GT/s	DA CEM x16	164 pos	CEMDA164003020X

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