

PCI Express® Gen 6 DirectAttached™ CEM Card Edge Connectors

64GT/S NRZ DIFFERENTIAL SIGNALING FOR NEXT-GENERATION SYSTEMS

The PCI Express® Gen 6 DirectAttached™ CEM Card Edge Connectors from Amphenol offer superior performance for next-generation systems. The 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, limiting PCB trace loss and features press-fit termination power pins for improved rework. These connectors provide signal integrity loss enhancement of 0.5db to 1.0db compared to conventional PCIe® riser card solutions when paired with a PCIe® riser cable.

While the connector footprint differs from standard PCIe® CEM, the mating interface fulfills standard PCIe® AIC specifications and assures backward compatibility with Gen 5/4/3/2/1. The product is tooled with available configurations for X8 and X16 at a 64GT/s data rate to fulfill PCIe® Gen 6 standards. It is suitable for a variety of markets, including Desktop PCs, Servers, Workstations, Industrial PCs, and Non-PC applications.

- Backward mating compatible with Gen 5/4/3/2/1 and meets standard PCIe® interface
- Wide range of positions available, X8 and X16 are tooled
- Flexible mounting ears to meet different customer requirements
- 3 options are available for various application requests: 1pcs solution, 2pcs solution and fully cable out

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



TARGET MARKETS



BENEFITS

- Provides excellent performance and additional options for extreme bandwidth application
- Outperform Gen 6 specification, but also backward mating compatible to Gen 1/2/3/4 /5 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

MECHANICAL PERFORMANCE-WTB CONNECTORS

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

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), and 64Gb/s (PCIe® Gen 6) with the exception of those part series specifically noted as PCIe® Gen 1 in the part number tables

PACKAGING

- Hard or Soft Tray

APPROVALS AND CERTIFICATIONS

- CSA

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

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

TARGET MARKETS/APPLICATIONS



Desktop
PCs
Servers
Server Riser
Workstations



Desktop PCs
Industrial PCs
Notebook PCs
Solar Panel Inverter



Respirators

TECHNICAL INFORMATION

SI PERFORMANCE

DA CEM PCIe® Gen 6 SI simulation performance meet @ 64GT/s

PART NUMBERS

Description	Performance	Termination	Position	Part Numbers	Solution Option
PCIe® Gen 6	64GT/s	DA CEM x8	98 pos	CEMDA098003020X	1pcs Solution
PCIe® Gen 6	64GT/s	DA CEM x16	164 pos	CEMDA164003020X	1pcs Solution
PCIe® Gen 6	64GT/s	DA CEM x8	98 pos	CEMDA098003020X	2pcs Solution
PCIe® Gen 6	64GT/s	DA CEM x16	164 pos	CEMDA164003020X	2pcs Solution
PCIe® Gen 6	64GT/s	DA CEM x8	98 pos	CEMDA098003020X	Fully Cable Out Solution
PCIe® Gen 6	64GT/s	DA CEM x16	164 pos	CEMDA164003020X	Full Cable Out Solution

Find part number details using the search box on www.amphenol-cs.com