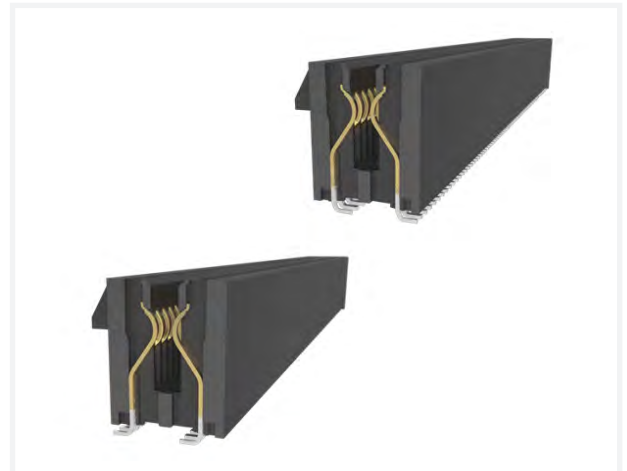


# PCI Express® Flip CEM Card Edge Connectors

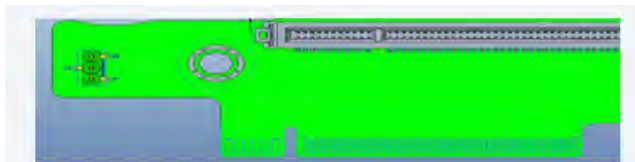
## EXTEND DIFFERENTIAL SIGNALING TO 32GT/S NRZ

The PCIe® Gen 5 Flip CEM is a new 1.0mm pitch vertical card edge connector that follows PCIe® standard mating interface. It is designed with a different footprint because the contacts are “JJ” type or “LL” contacts which provide maximum savings of up to 19.5% in keepout area. The current Flip CEM supports 32GT/s (Gen 5) and the mating side supports backward compatibility with PCIe® 4/3/2/1 card.

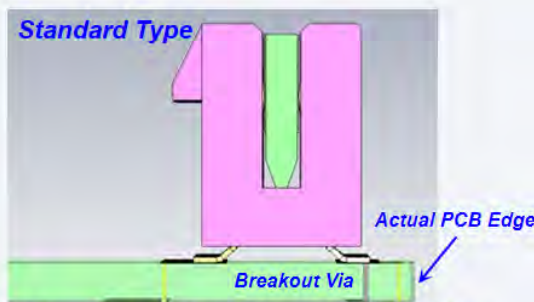
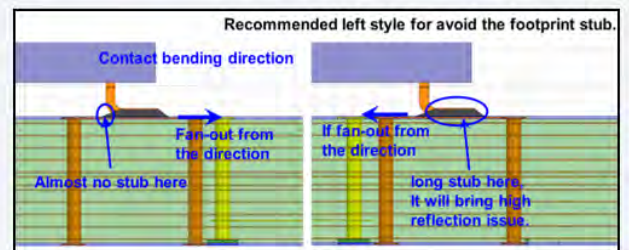
The Flip CEM is ideal for use when the PCIe® connector has to be placed close to the PCB board edge. The Flip CEM connector with “JJ” or “LL” contacts can avoid the trace from going inside the connector which causes stub.



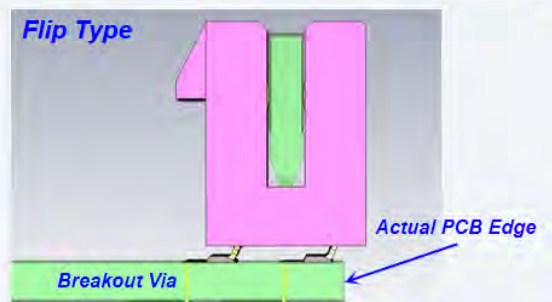
### TARGET MARKETS



When the PCB space is limited especially connector footprint close to PCB edge, the Flip connector offering benefit on both SI and breakout routing.



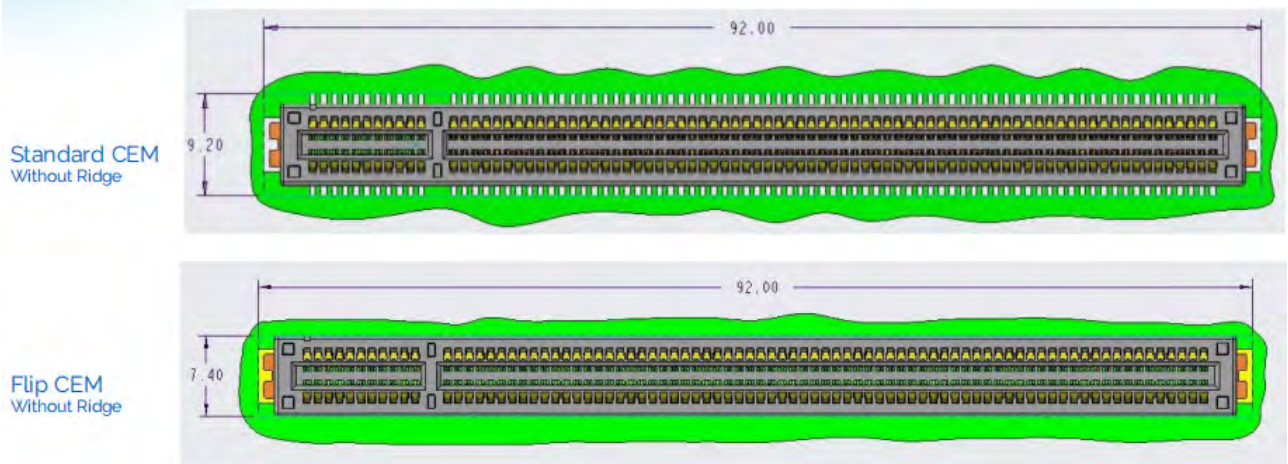
Standard type requires additional space for breakout outside the footprint, or use VIPP design, but it increases the cost.



Flip type breakout inside the footprint and don't require additional space.

## ▶ PCI Express® Flip CEM Card Edge Connectors

Achieve 19.5% savings on keep-out area with Flip CEM without ridge



### FEATURES

- Contact types of JJ and LL are available
- Supports X8, X16 standard links as per PCI-SIG CEM specification
- Backward mating
- RoHS compliant
- Low-halogen material

### BENEFITS

- Able to meet different customer soldering requirements
- Provides excellent performance and additional options for extreme bandwidth applications
- Backward mating compatible to Gen 1/2/3/4 specification
- 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), 64.0Gb/s (PCIe® Gen 6) 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

## 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

## APPROVALS & CERTIFICATION

- 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](http://www.pcisig.com)
- Amphenol
  - GS-12-1406 PCI Express® group of connectors

## TARGET MARKETS/APPLICATIONS



Entertainment



Routers



Desktop PCs  
Servers  
Server Riser  
Workstations



Desktop PCs  
Embedded Systems  
Industrial PCs  
Notebook PCs  
Solar Panel Inverter

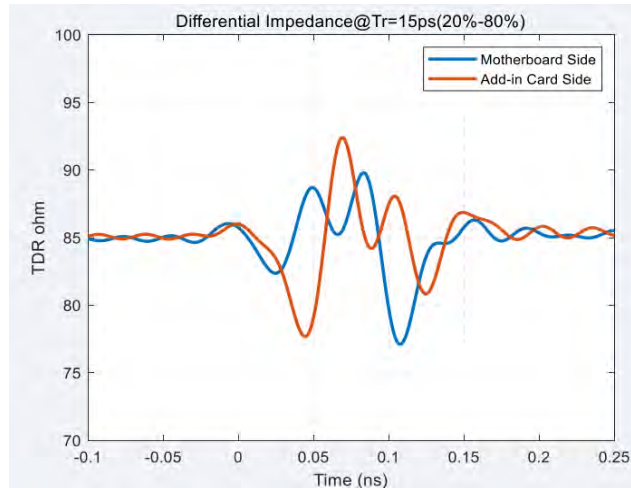
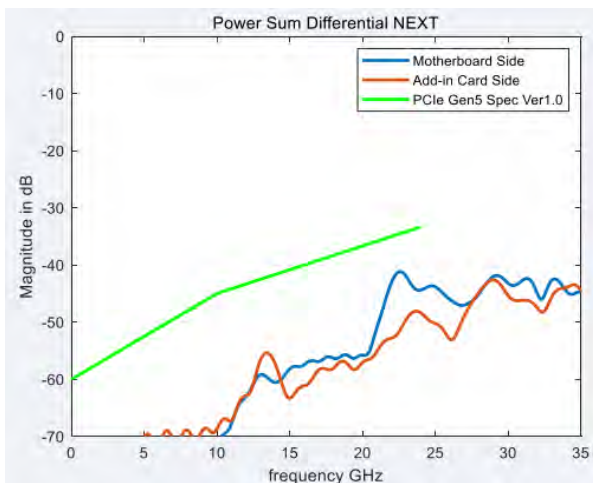
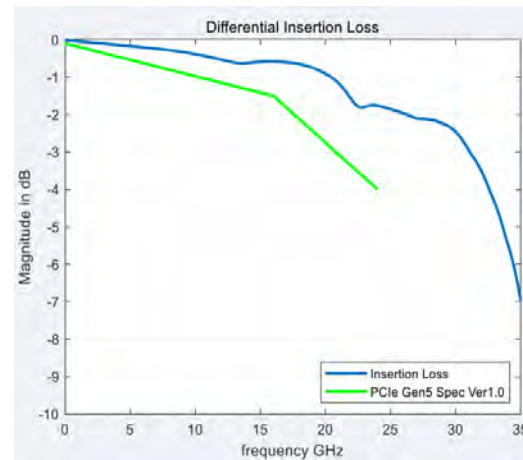
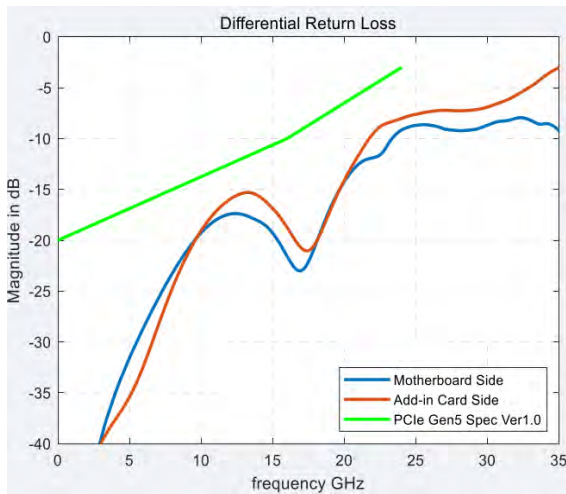


Respirators

# PCI Express® Gen 5 and Gen 6 Flip CEM Card Edge Connectors

## SI PERFORMANCE

### Vertical PCIe® Gen 5 SI simulation performance @ 32GT/s



## PART NUMBERS

Description	Performance	Termination	Position	Part Numbers
PCIe® Gen 5	32GT/s	Vertical SMT Flip CEM "JJ" type	98 pos	CEM00981001450*
PCIe® Gen 5	32GT/s	Vertical SMT Flip CEM "JJ" type	164 pos	CEM01641001450*
PCIe® Gen 5	32GT/s	Vertical SMT Flip CEM "ll" type	98 pos	CEM00981001460*
PCIe® Gen 5	32GT/s	Vertical SMT Flip CEM "ll" type	164 pos	CEM01641001460*

\* denotes base part number. Please contact Amphenol for complete part numbers.