

16G/32G/64G PCIe CEM-TO-ANY INTERCONNECT SOLUTIONS



- RISER Cable Series* (PCIe Riser Cable & Connector for Gen4/Gen5/Gen6)
- PCIe eCable for Networking**
- PCIe CEM Gen5/Gen6*** connector series

* **Patent Pending Solutions

PCIe GEN4/GEN5/GEN6 SERIES CABLE INTERCONNECTS

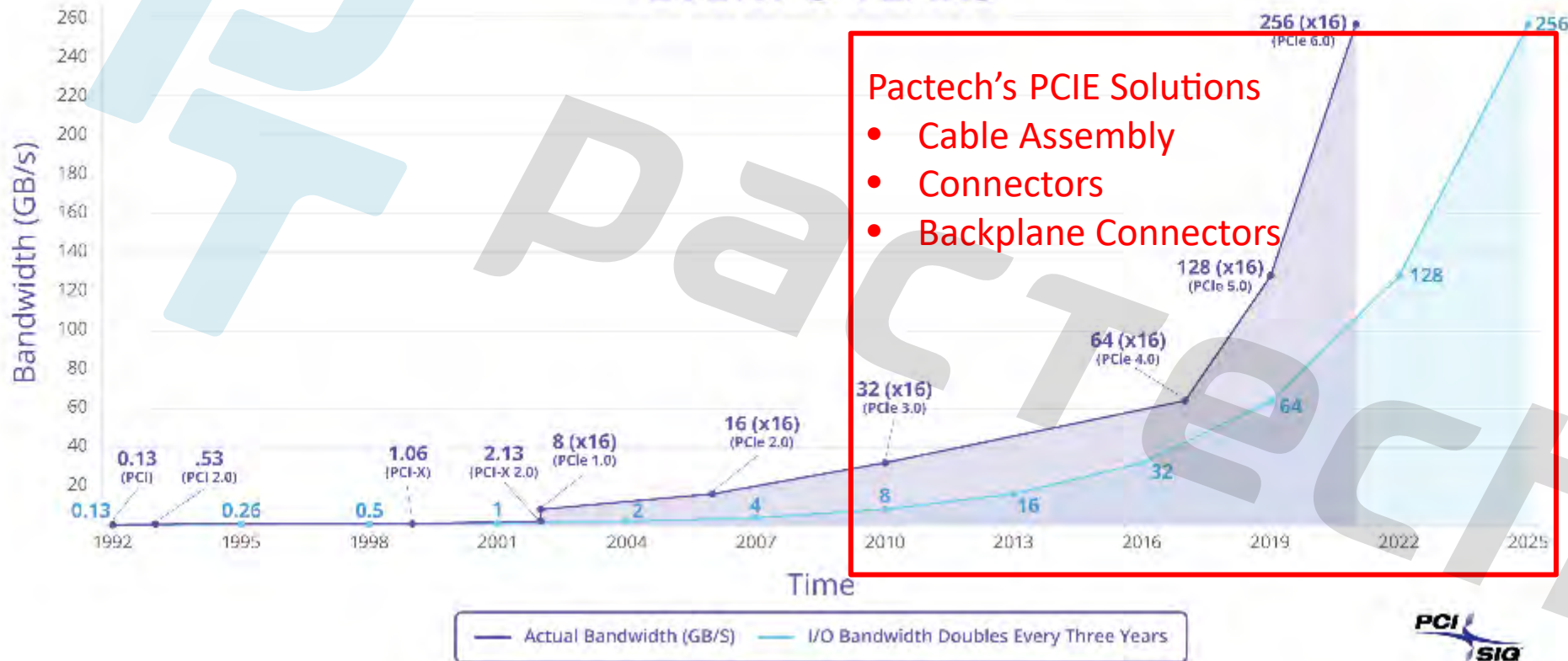
PCIe Gen4/Gen5/Gen6
CEM-to-Any Riser Interconnects

PCIe Under-Board/Over-Board
Cable Solutions

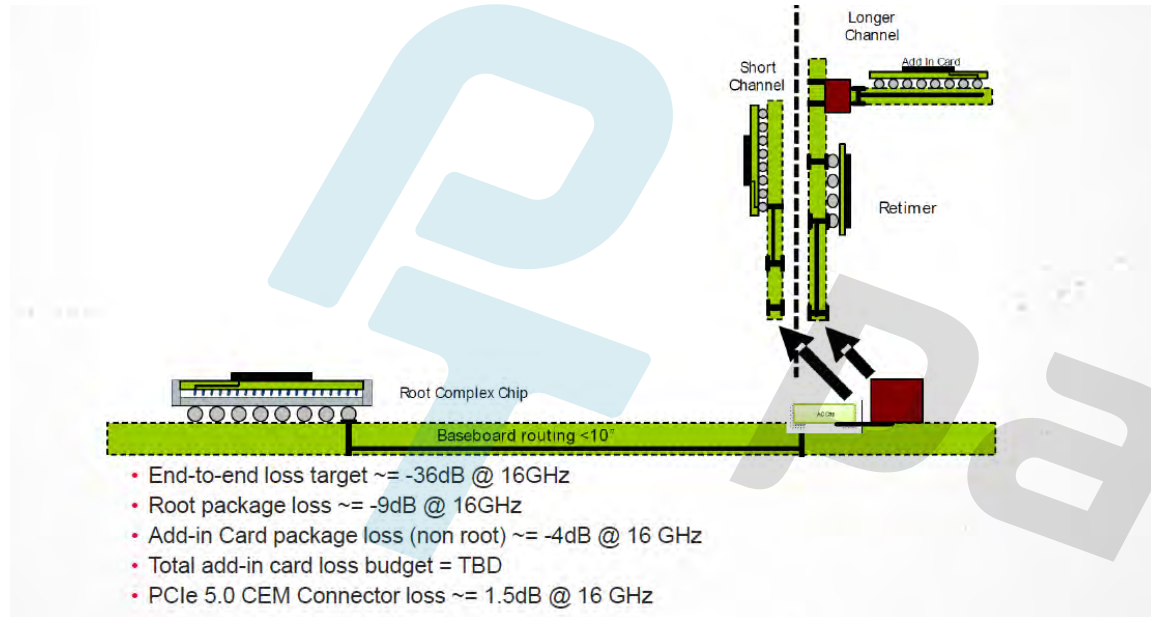
PCIe eCable: Networking Devices

PCIe TECHNOLOGY ROADMAP

 I/O BANDWIDTH DOUBLES EVERY 3 YEARS



PCIe 32GT/S CHALLENGE & RISER CABLE ADVANTAGE

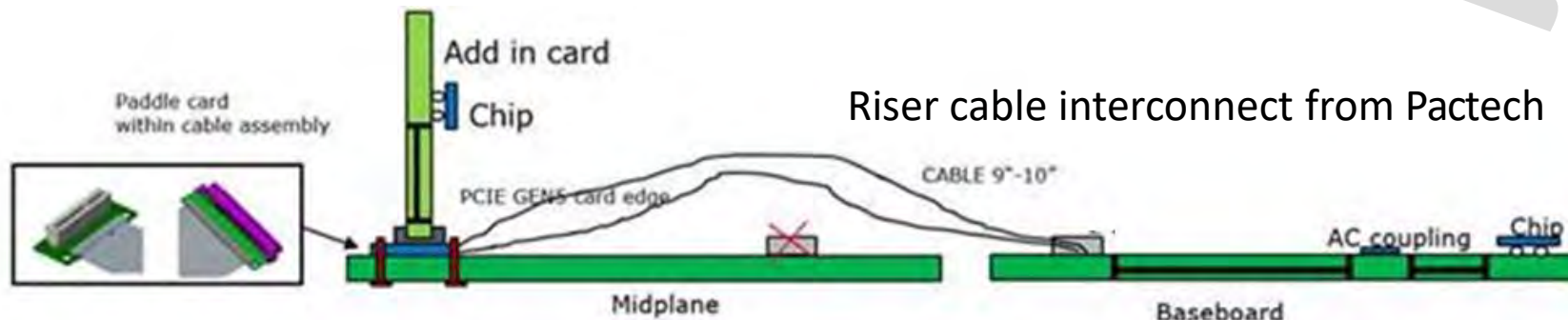


Re-timer may be required when the channel loss greater than 30dB, this will add:

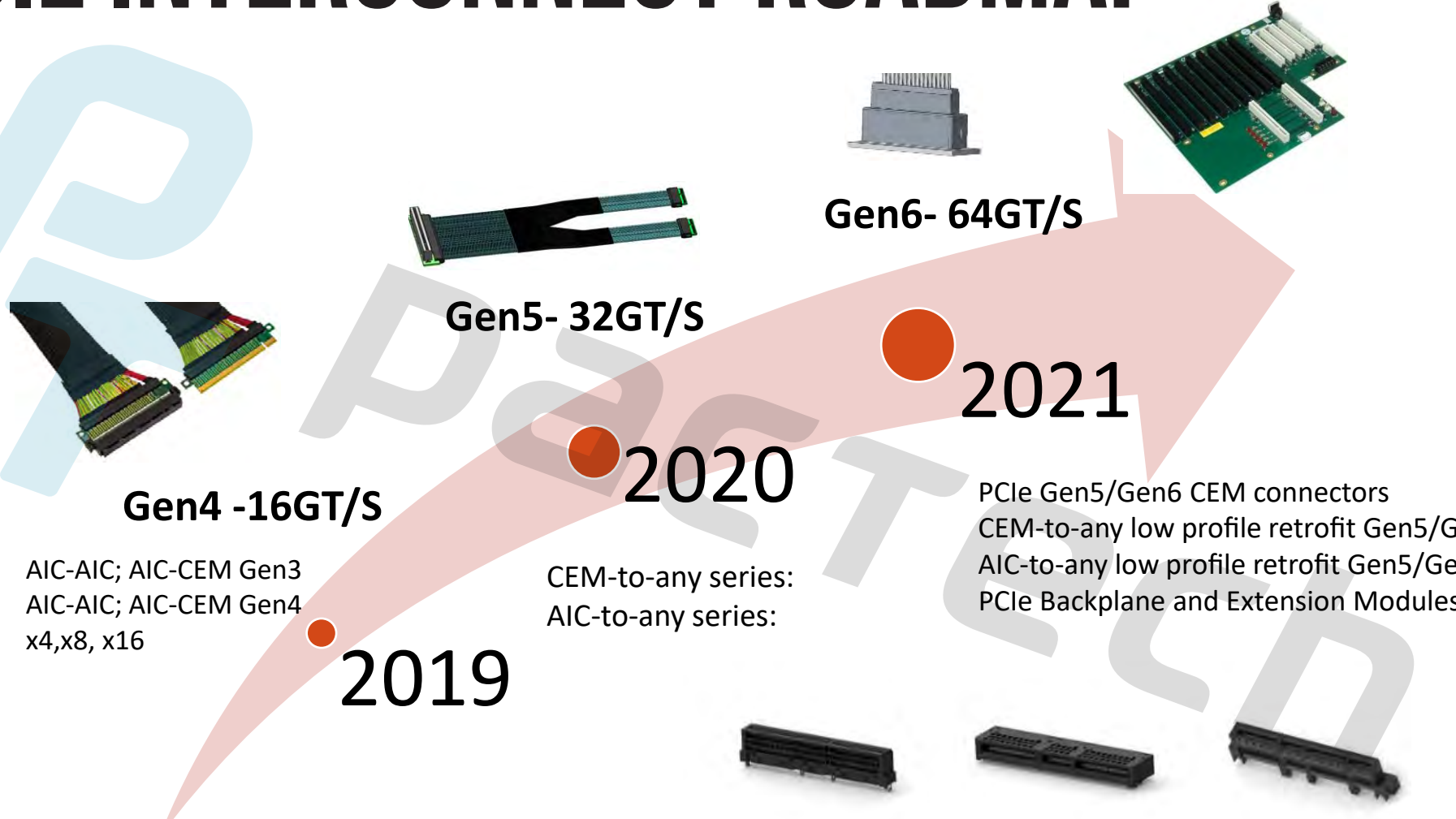
1. Latency at 100ms level
2. Cost
3. Design complexity and supply chain limitations

Riser Cable solution:

- Eliminate the re-timer resulted latency & design complexity
- Flexible routing solutions
- Cost effective (targeting \$0.05/Gbps)



PCIe INTERCONNECT ROADMAP



Gen4 -16GT/S

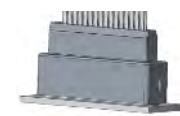
AIC-AIC; AIC-CEM Gen3
AIC-AIC; AIC-CEM Gen4
x4,x8, x16



Gen5- 32GT/S

2020

CEM-to-any series:
AIC-to-any series:



Gen6- 64GT/S

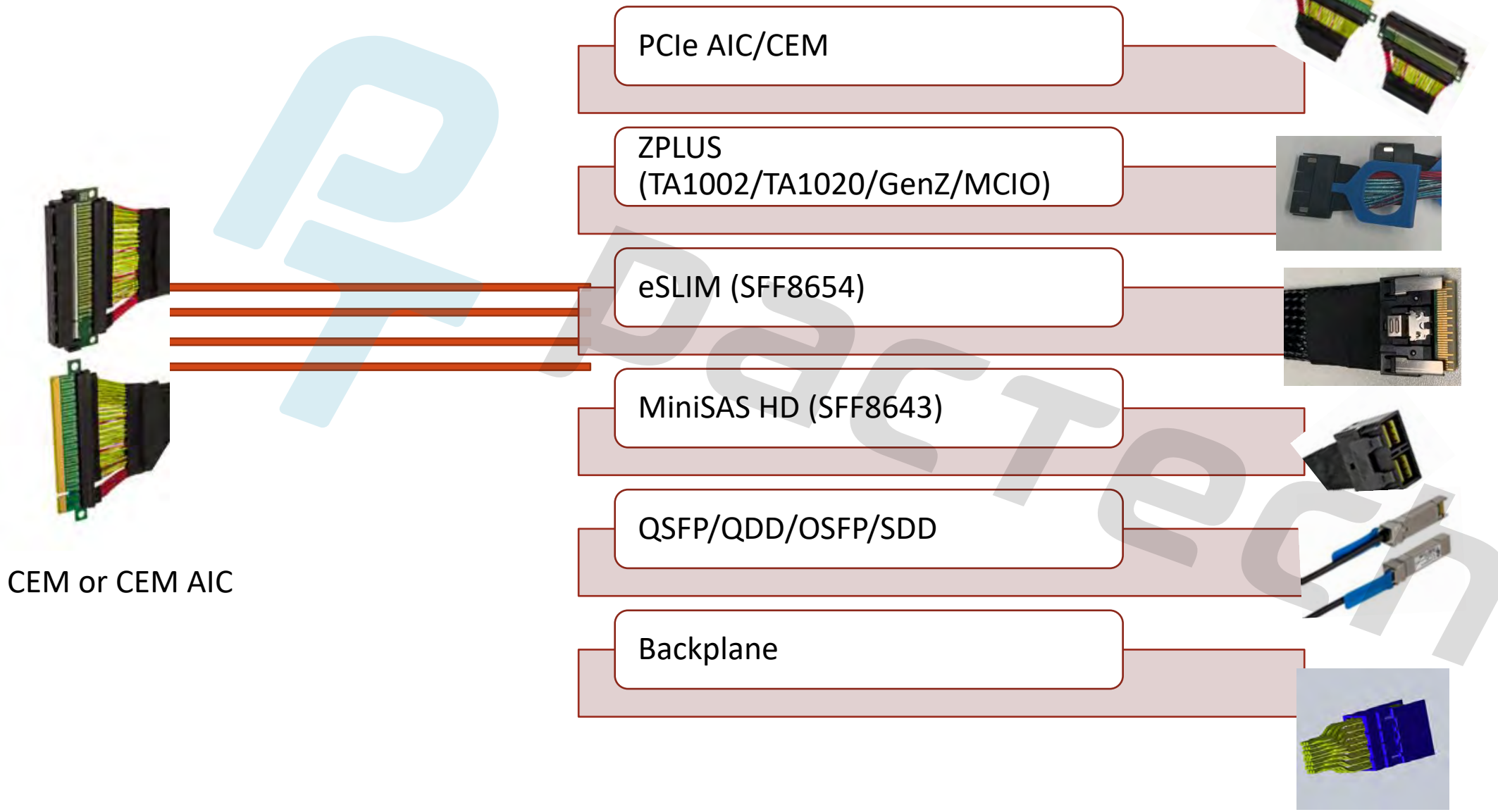
2021

PCIe Gen5/Gen6 CEM connectors
CEM-to-any low profile retrofit Gen5/Gen6
AIC-to-any low profile retrofit Gen5/Gen6
PCIe Backplane and Extension Modules



A Complete TA1002/TA1020/PCIe compatible solutions up to PCIe Gen6 applications

CEM-TO-ANY PCIE SERIES



CEM or CEM AIC

PCIe GEN3 & GEN4 RISER CABLE SERIES

Product features:

- Superb signal integrity performance
 - Impedance: 85+/-10% ohm
 - FEXT and NEXT power sum: 35 dB at 8GHz
 - PCIe 4.0 CEM compliant
- Robust mechanical structure
 - Bending support
 - Flexible version available

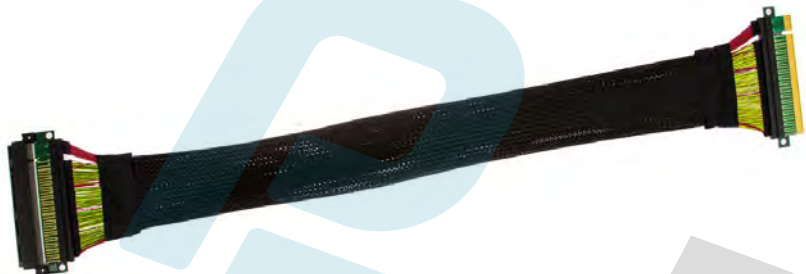


Processing features:

- Automated soldering process
- Discrete and flat cable options available for production
- 3M foldable Twinax cable compatible

Product offerings including AIC-CEM with options to use SFF8654/SFF8639/SFF8643 interfaces

PCIE GEN5/GEN6 32GBPS + INTERCONNECT SOLUTIONS



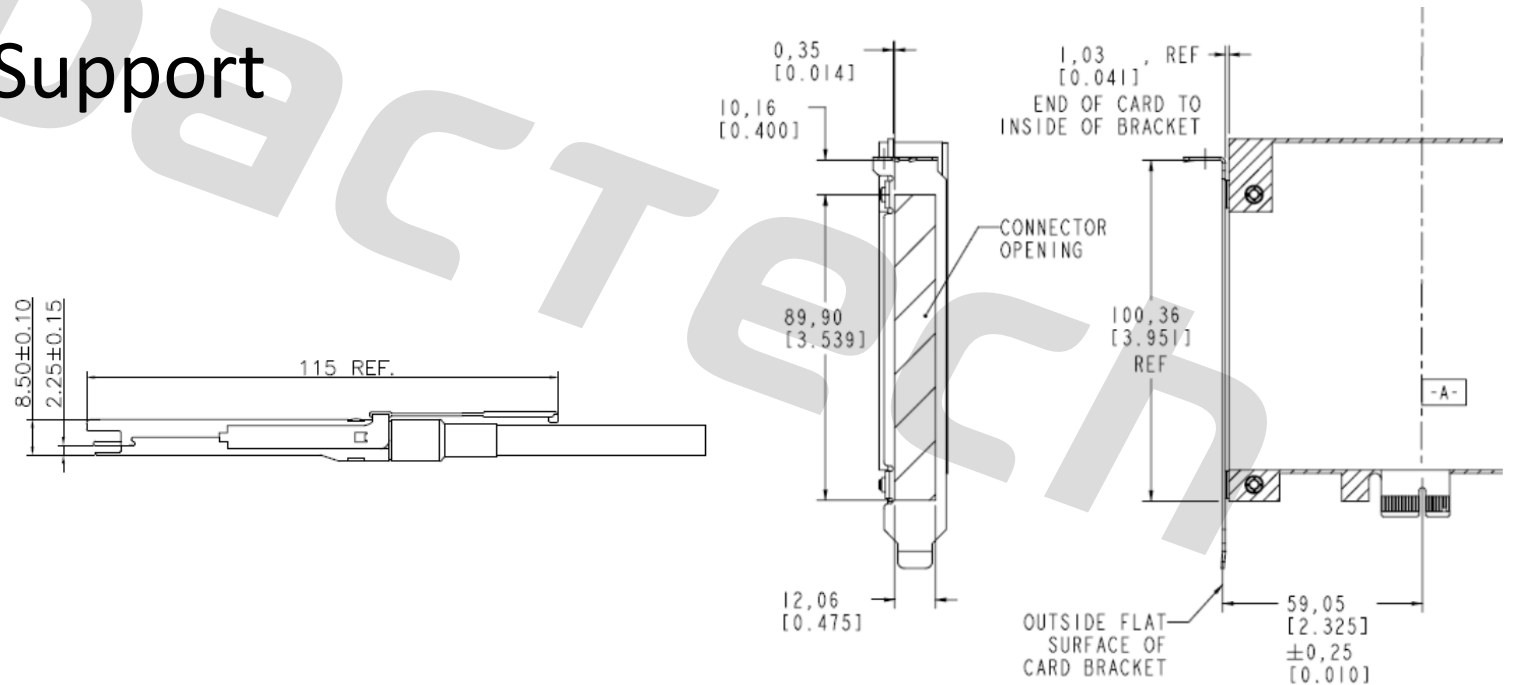
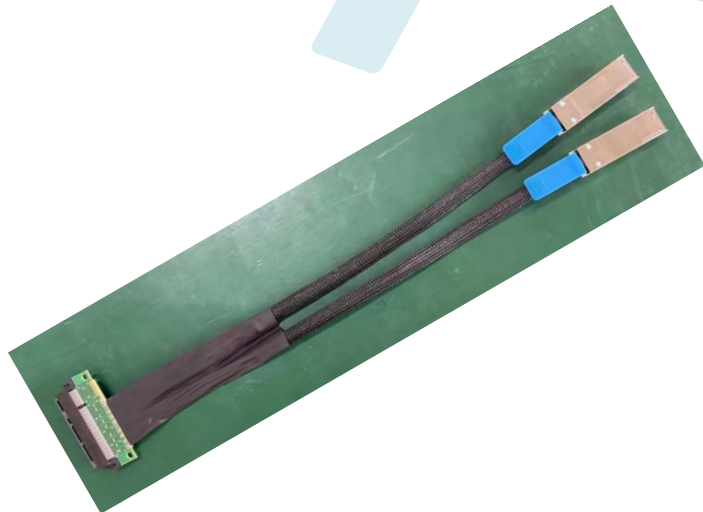
- X4, X8, X16 PCIE TO 16X PCIE Riser ,Gen4/Gen 5/Gen6, cable & connectors

- X16 PCIE CEM to 2X Zplus (GenZ, TA1002,TA1020) 2C/1C AIC for Gen5/Gen6
- Zplus (GENZ, TA1002,TA1020) 2C/1C AIC to Zplus(GEN Z) AIC , PCIe Gen4/Gen5/Gen6



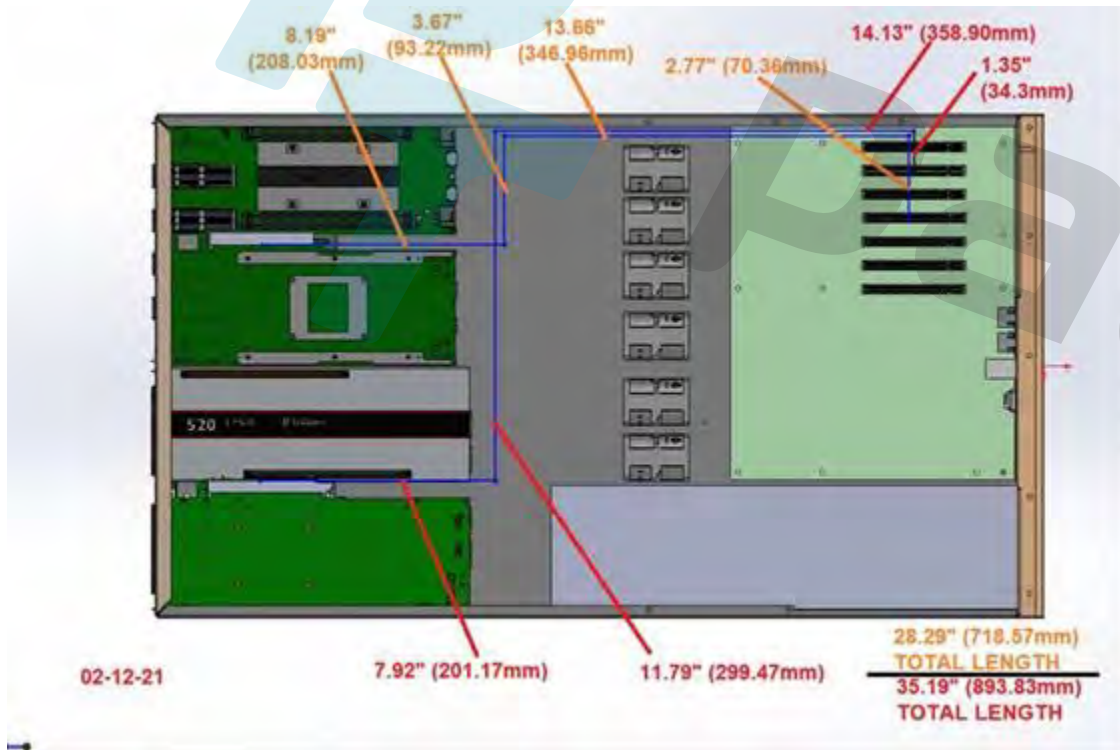
PCIE ECABLE - NETWORKED PCIE APPLICATIONS

- External interface options:
QSFP+/QSFP28/QSFP56/QSFPDD
- Internal: PCIe CEM
- Gen4/Gen5/Gen6* Support



ROUTING EASIER (UNDER-BOARD/OVER-BOARD)

- Flexible solutions available with bending radius as small as 10mm
- Right Angle, Left Angle, Straight options available



PCIe CEM & ZPLUS(TA 1002/TA 1020) CABLE SERIES

| End-to-End | Data-Rate | AWG | TA1002 1C AIC | TA1002 2C AIC | PCIe x4 AIC | PCIe x8 AIC | PCIe x16 AIC | PCIe CEM Straddle Mount | PCIe CEM RA |
|-------------------------|------------|-------|---------------|---------------|-------------|-------------|--------------|-------------------------|-------------|
| TA1002 1C AIC | 8G/16G/32G | 32-30 | | | | | | | |
| TA1002 2C AIC | 8G/16G/32G | 32-30 | | X | X | X | X | X | X |
| PCIe x4 AIC | 8G/16G/32G | 32-30 | | X | X | X | X | X | X |
| PCIe x8 AIC | 8G/16G/32G | 32-30 | | X | X | X | X | X | X |
| PCIe x16 AIC | 8G/16G/32G | 32-30 | | X | X | X | X | X | X |
| PCIe CEM Straddle Mount | 8G/16G/32G | 32-30 | X | X | X | X | X | X | X |
| PCIe CEM RA/LA | 8G/16G/32G | 32-30 | X | X | X | X | X | X | X |

Standard Compliance:

- PCIe Gen3
- PCIe Gen4
- PCIe Gen5
- PCIe Gen5 (PAM4)

Immediate Production Available

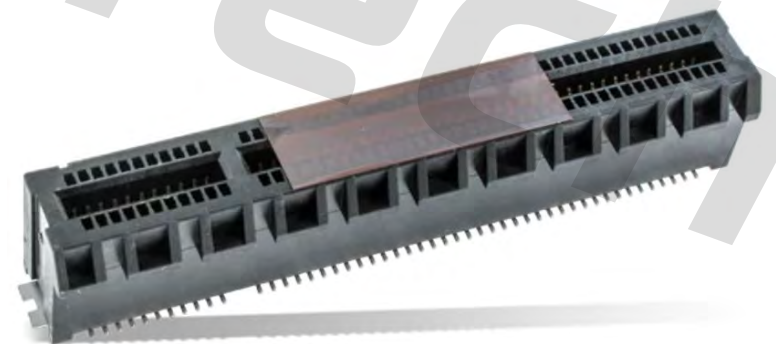


PCIe CEM & ZPLUS(TA 1002/TA 1020) CONNECTORS

| End-to-End | Data-Rate | 2020.Q2 | 2020.Q3 | 2020.Q4 | 2021.Q1 |
|------------------------------|------------|---------|---------|---------|---------|
| ZPLUS 2C (TA1002 Compatible) | 8G/16G/32G | | | | X |
| ZPLUS 1C (TA1002) | 8G/16G/32G | | | | X |
| PCIe Gen5 Vertical x4 | 8G/16G/32G | | | | X |
| PCIe Gen5 Vertical x8 | 8G/16G/32G | | | | X |
| PCIe Gen5 Vertical x16 | 8G/16G/32G | | | X | |
| PCIe Gen5 Straddle Mount x16 | 8G/16G/32G | | | X | |

Standard Compliance:

- PCIe Gen3
- PCIe Gen4
- PCIe Gen5
- PCIe Gen6 PAM4



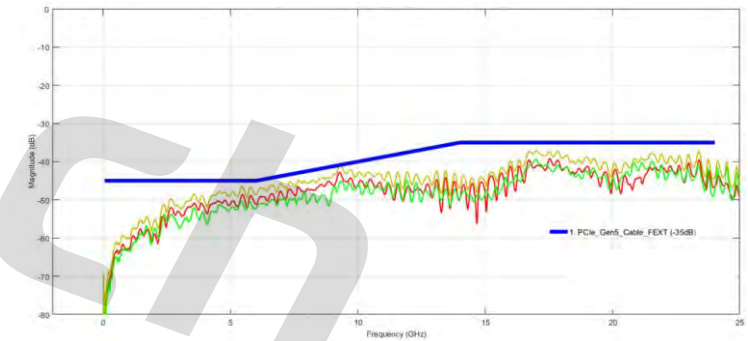
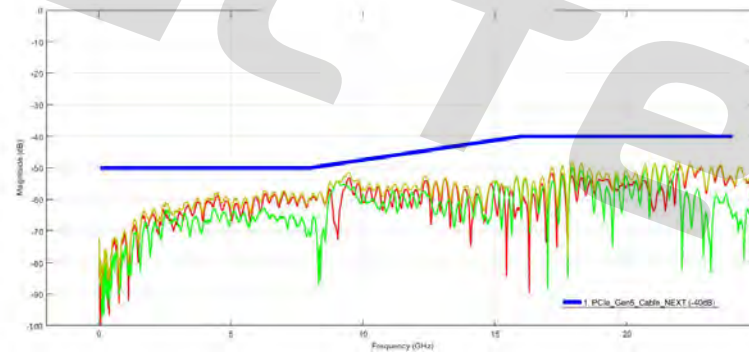
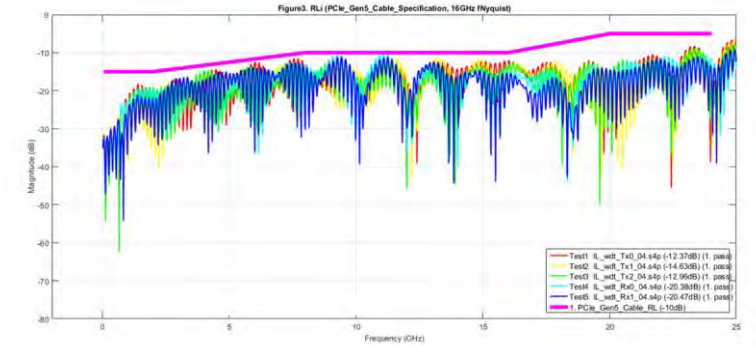
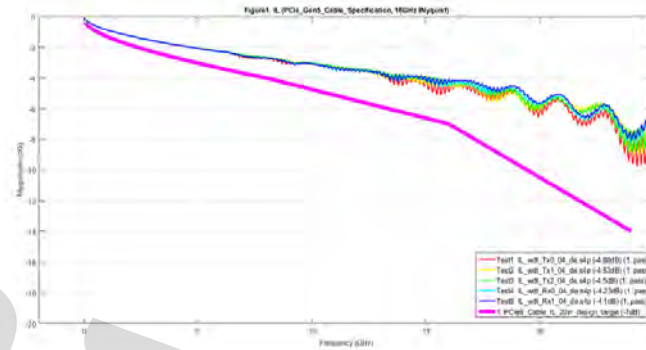
Sampling available in 2021

GEN5/GEN6 RISER CABLE SI (TESTED)

- Advanced crosstalk mitigation technology supporting powersum of xtalk less than 40dB up to 25GHz
- Impedance control at 85ohm+/-7 ohm, reflection <-10dB up to 20GHz
- Advanced Twinax cable & PCB design technology supporting IL at 4.5dB/m
- Max loss 6dB at 16GHz to support extended reach up to

1.0m/40inch Max

Immediate Samples Available

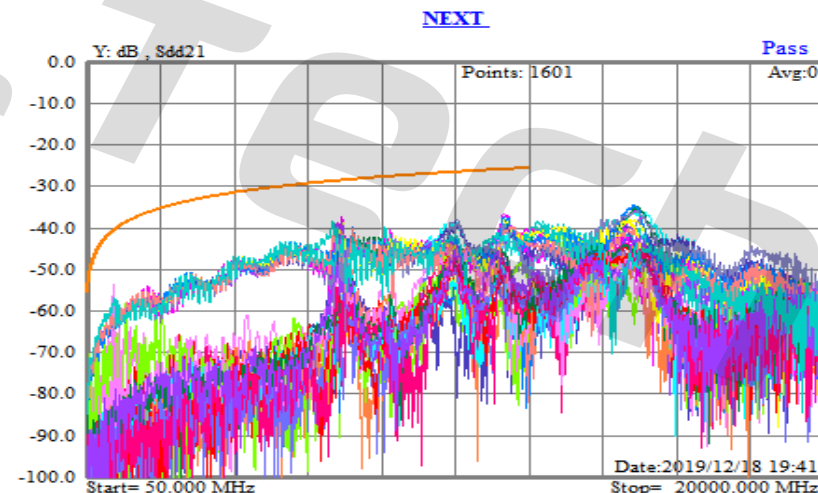
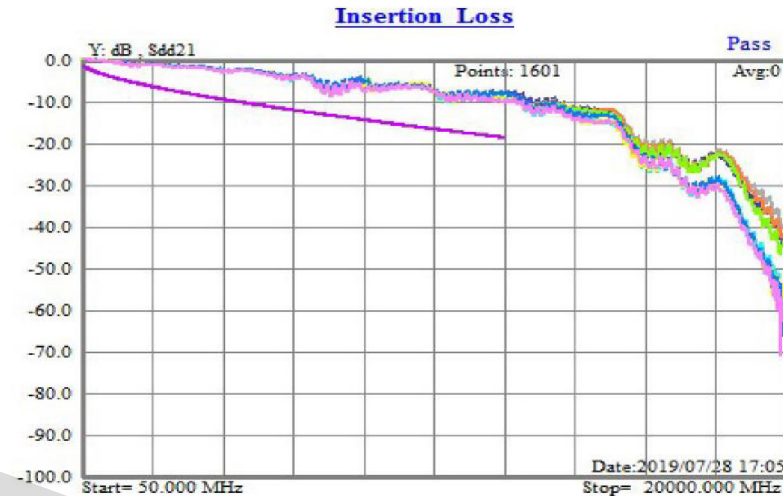


20inch PCIe Riser Cable Tested Data for Gen5

GEN4 RISER CABLE TYPICAL PERFORMANCE (TESTED)

- Advanced crosstalk mitigation technology supporting powersum of xtalk less than 35dB up to 16GHz
- Advanced twinax cable & PCB design technology supporting IL at 4.5dB/m
- Support extended reach up to **1.5m**

Immediate Production Available

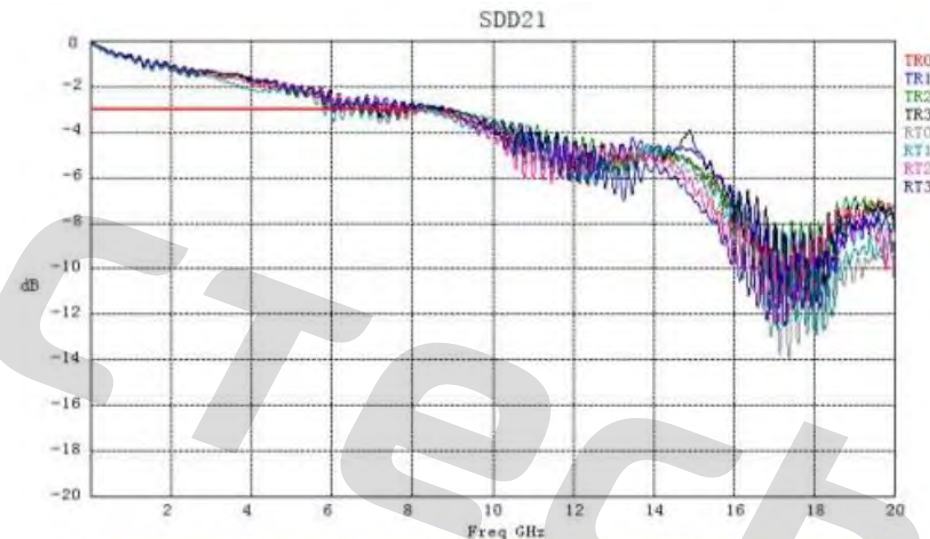
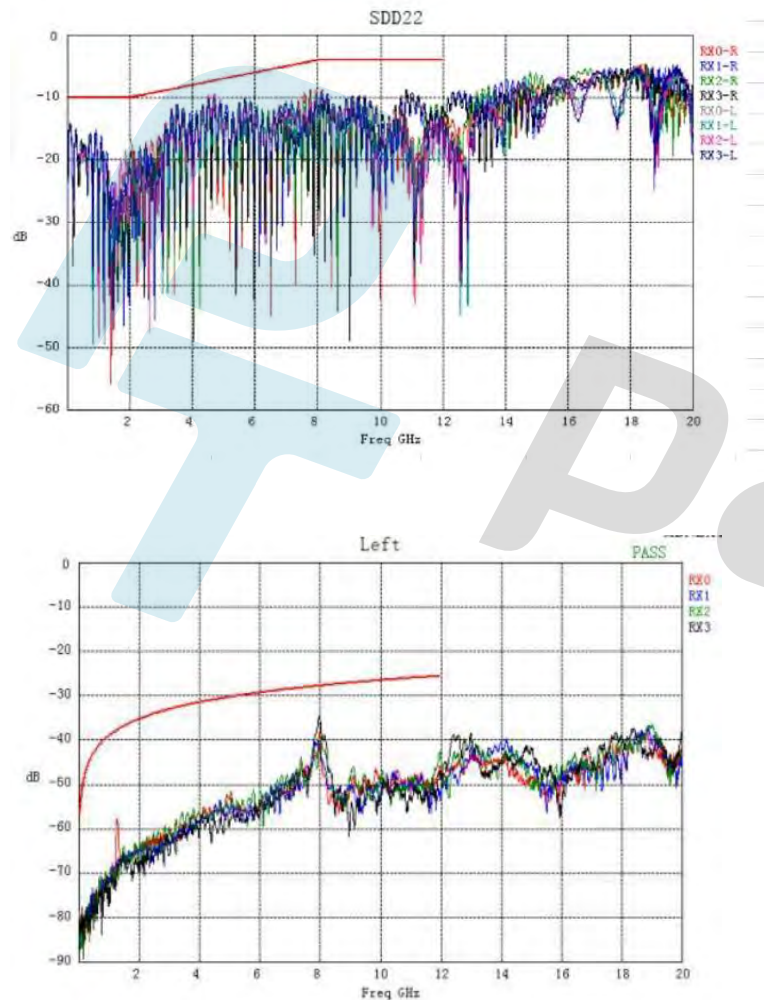


QSFP+/QSFP28 PCIE ECABLE PERFORMANCE (TESTED)

Length: 500 mm

Loss: -2dB at 4GHz; -3dB at 8GHz;

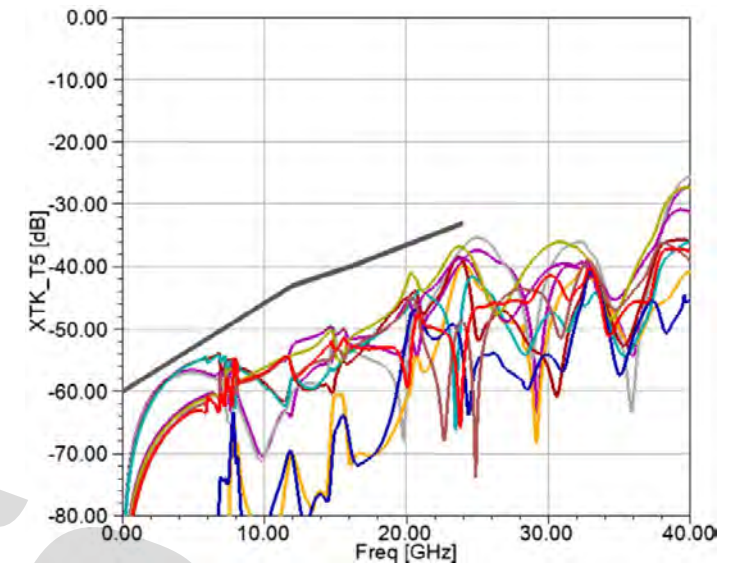
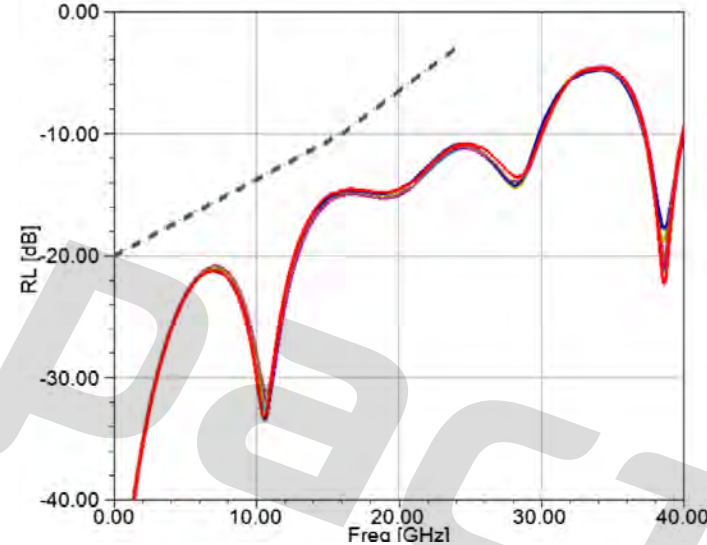
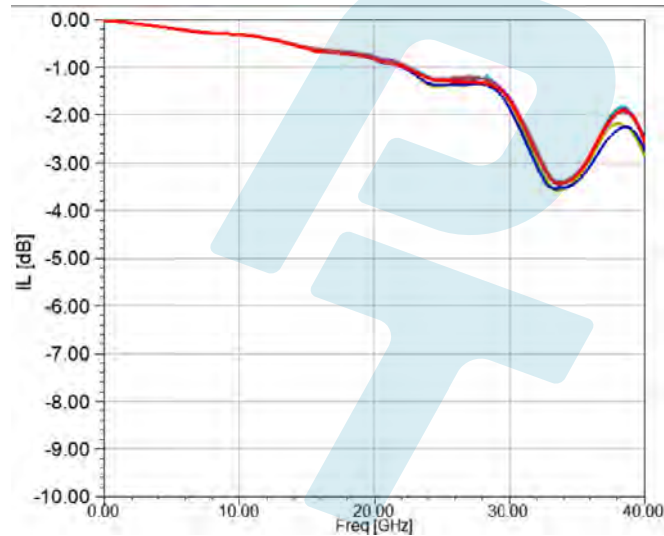
Potentially support Gen5 with loss < -5dB at 16GHz.



| Frequency | TX1 | TX2 | TX3 | TX4 | RX1 | RX2 | RX3 | RX4 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4GHz | -1.83 | -1.75 | -1.77 | -1.85 | -1.82 | -2.11 | -1.94 | -1.86 |
| 8GHz | -3.10 | -2.94 | -2.96 | -3.02 | -3.12 | -3.08 | -2.98 | -2.91 |

Unit: dB

CEM GEN5/GEN6 CONNECTOR PERFORMANCE (SIMULATION)



- Insertion Loss: <1.5dB up to 30GHz;
- Return loss: -10dB up to 30GHz;
- Xtalk Mitigation: -40dB up to 20GHz; -35dB up to 37.5GHz

Samples available in 2021



1 Day - RFI Response- Yes/No



2 Day -RFQ, Quote/Drawings;



3 Day -Conceptual design



2 Weeks - Engineering sample



1 Month -Max Production lead-time



0 Defect - EXW with required
100% in-line tests

123210 OPERATION PRINCIPLE TO ENSURE BUSINESS INTEGRITY AND TRANSPARENCY

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