勝特力電材超市-龍山店 886-3-5773766
勝特力電材超市-光復店 886-3-5729570
胜特力电子(上海) 86-21-34970699
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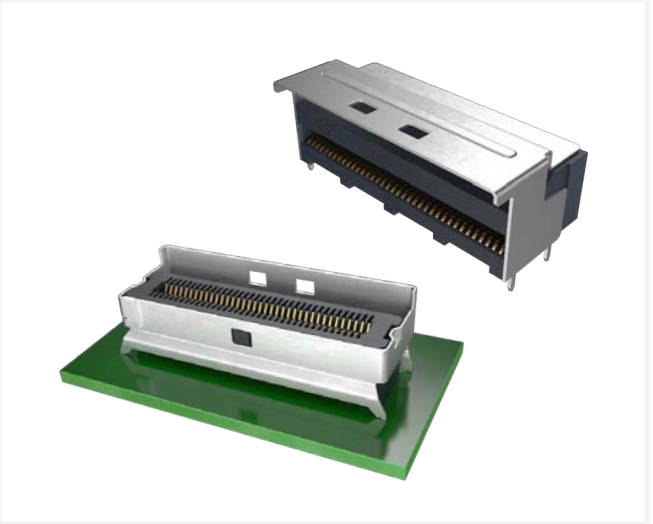
Mini Cool Edge IO Connector

NEXT-GENERATION HIGH SPEED INTERCONNECT SOLUTION – UP TO 56G PAM4/PCIe® Gen 4/ PCIe® Gen 5

Amphenol ICC introduces the next-generation OverPass™ solution – Mini Cool Edge IO. The 0.60mm pitch connector come with a slim form factor design, capable of transmitting high-speed signal up to 56G PAM4/PCIe® Gen 4/PCIe® Gen 5, and allowing much greater signal path lengths while maintaining SI performance when compared to conventional pcb routing methods.

Mini Cool Edge IO not only provides a SI performance ready signal transmission but also a new way of system design that is cost-effective, highly modular, scalable, and extremely easy to repair.

- High speed – 56Gb/s PAM4 /PCIe® Gen 4/PCIe® Gen 5 capability
- Supports both cable and card edge connection



TARGET MARKETS

FEATURES

- 0.60mm pitch, vertical and right angle configurations
- Up to 56Gb/s PAM4, PCIe® Gen 4, PCIe® Gen 5, over 1.0 meter transmission distance
- Supports both cable and card edge applications with one identical connector
- Optional for 92Ω (G42 series), 85Ω (G97 series) and 95Ω (G98 series) impedance and various pin number options – meeting PCIe®/NVMe/SAS/SFP(+)/QSFP specifications

BENEFITS

- Slim form factor for compact data center system designs
- Extends transmission range far more over the conventional PCB routes
- Provides flexibility in system design to meet highly modular, scalable and easy-to-repair requirements
- Saves system material cost, engineering and certification expenses with high succession of system design

TECHNICAL INFORMATION

MATERIAL

- Contact Base Metal: Copper alloy
- Contact Area Finish: Gold over nickel
- Solder Area Finish: Tin over nickel
- Housing & Spacer: High temperature thermoplastic (UL 94V-0)
- Shorting Bar: Conductive pastic
- Cage: Stainless steel, nickel plating overall

ELECTRICAL PERFORMANCE

- Contact Resistance: 30mΩ max. initial; 15mΩ max. change after test
- Dielectric Withstanding Voltage: 300V DC

MECHANICAL PERFORMANCE

- Durability: 250 mating cycles
- Mating Force: 0.6N/pin max.
- Unmating Force: 0.06N/pin min.

APPROVALS & CERTIFICATION

- UL

ENVIRONMENTAL

- Humidity: EIA-364-31, Method III, Subject unmated specimens to 24 cycles between 25˚C/ 80%RH and 65˚C/ 50% RH
- Temperature Life: EIA-364-17, Method A Test Condition 2, Test Time Condition C, Subject mated specimens to 105˚C for 168 hours
- Thermal Shock: EIA-364-32, Method A Test condition 1, -55˚C to 85˚C (10 cycles)

SPECIFICATIONS

- Amphenol Product Specification:
  - G42 series-PS-7681
  - G97 series-PS-7755
  - G98 series-PS-7793

PACKAGING

- Carrier Tape

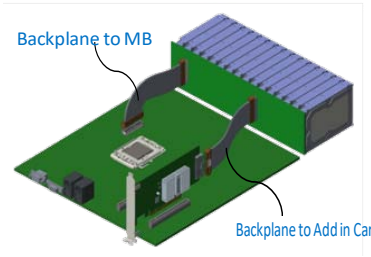
TARGET MARKETS/APPLICATIONS

Baseband
Commercial Systems
Networking
Radio Units

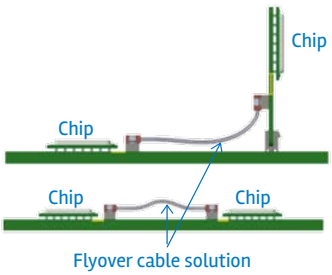
High-end Computing System
Server and Storage Systems

Amphenol OverPass™ Applications

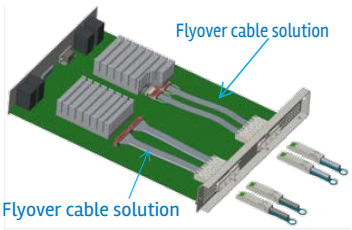
Miplane to MB Flyover



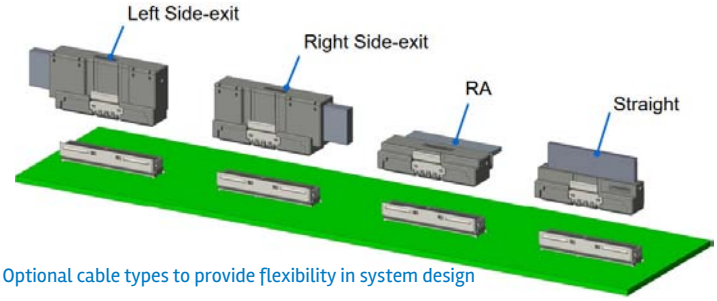
Chip to Chip Flyover



Chip to External IO Flyover



Cable Options



Optional cable types to provide flexibility in system design

Disclaimer
Please note that the above information is subject to change without notice.

PART NUMBER SELECTOR

G42	X	X	X	X	X	X	X	XX	—	X

Form Factor

V	Vertical
R	Right Angle

Electrical Feature

1	PCIe® Gen 4

Pin Definition

1	38 Pin (4x + sideband or 6x)
2	74 Pin (8x + sideband or 12x)
3	124 Pin (16x + sideband or 20x)
4	50 Pin (6x + sideband or 8x)
5	148 Pin (20x + sideband or 24x)

Contact Plating

2	15u" Gold
3	30u" Gold

Shell Pin Length

1	1.50mm
2	2.20mm
3	3.00mm
4	4.20mm
5	1.20mm

Packaging Option

2	Tape & Reel

Variation

–	Standard

Compliant

HR	Halogen-free & RoHS compliant

Identification

X	Option
–	Standard

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Mini Cool Edge IO Connector

G97	R	X	X	X	X	X	X	HR

Mini CoolEdge IO Integrated Connector

Right Angle Type

Connector Speed

2	PCIe® Gen 5

Channel / Pin Quantity

1	38 Pin (4x + sideband or 6x)
2	74 Pin (8x + sideband or 12x)
4	124 Pin (16x + sideband or 20x)
6	148 Pin (20x + sideband or 24x)
7	84 Pin (8x + sideband or 13x Sideband)

Contact Finish

2	15u" Gold
3	30u" Gold

Shell Pin Length

1	1.50mm
2	2.20mm
3	3.00mm
4	4.20mm
5	1.20mm
A	1.20mm, Tin/Nickel
B	2.20mm, Tin/Nickel
C	3.00mm, Tin/Nickel
D	4.20mm, Tin/Nickel
E	1.20mm, Tin/Nickel

Packaging Option

2	Tape & Reel

Variation

–	Standard

Compliant Code

HR	Halogen-Free & RoHS compliant

G97	V	X	X	X	X	X	X	HR

Mini CoolEdge IO Integrated Connector

Vertical Type

Connector Speed

2	PCIe® Gen 5

Channel / Pin Quantity

1	38 Pin (4X + sideband or 6X)
2	74 Pin (8X + sideband or 12X)
4	124 Pin (16X + sideband or 20X)
5	50 Pin (6X + sideband or 8X)
6	148 Pin (20X+ sideband or 24X Sideband)
7	84 Pin (8X+ sideband or 13X Sideband)

Contact Finish

2	15u" Gold
3	30u" Gold

Shell Pin Length

1	1.50mm
2	2.20mm
3	3.00mm
4	4.20mm
5	1.20mm (shell pin and housing post)
6	1.85mm

Packaging Option

2	Tape & Reel (with cap)
3	Tape & Reel (w/o pick up)
4	Tape & Reel (with mylar. For G97VX7XX4HR only)

Variation

–	Standard

Compliant Code

HR	Halogen-free & RoHS compliant

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Mini Cool Edge IO Connector

G98	V	X	X	X	X	X	X	HR

Mini CoolEdge IO Integrated Connector

Vertical Type

Connector Speed	
1	PAM4 56G 95Ω

Channel / Pin Quantity	
1	38 Pin (4x + sideband)
2	74 Pin (8x + sideband)
4	124 Pin (16x + sideband)
5	50 Pin (20x + sideband or 24x)
6	148 Pin (8x + sideband or 13x Sideband)
B	74 Pin (16x + sideband or 20x)
F	148 Pin (20x + sideband or 24x)
H	100 Pin (8x + sideband or 13x Sideband)

Contact Finish	
2	15u" Gold
3	30u" Gold

Shell Pin Length	
1	1.50mm
2	2.20mm
3	3.00mm
4	4.20mm

Packaging Code	
2	Tape & Reel (with cap)

Variation	
–	Standard

Compliant Code	
HR	Halogen-free & RoHS compliant

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