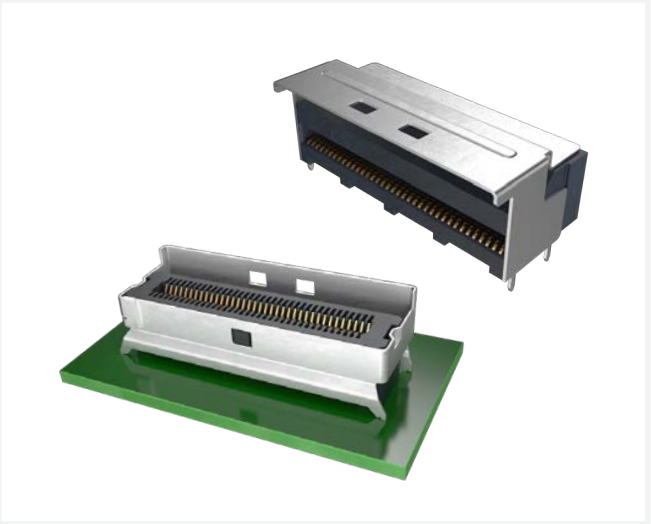
Mini Cool Edge IO Connector

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

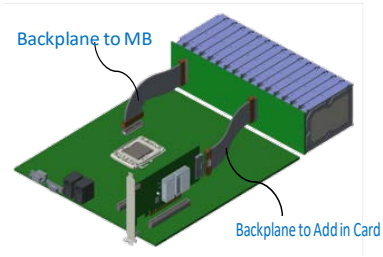
TARGET MARKETS/APPLICATIONS

Baseband
Commercial Systems
Networking
Radio Units

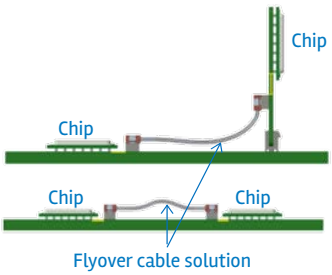
High-end Computing System
Server and Storage Systems

Amphenol OverPass™ Applications

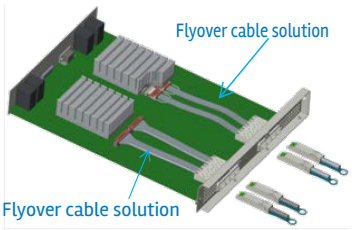
Miplane to MB Flyover



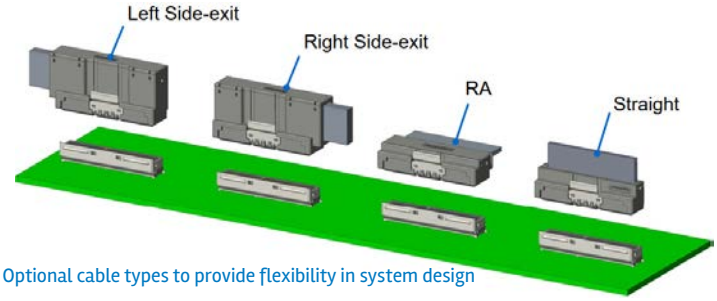
Chip to Chip Flyover



Chip to External IO Flyover



Cable Options



Optional cable types to provide flexibility in system design

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

Mini Cool Edge IO Connector

G97	R	X	X	X	X	X	X	HR

Mini CoolEdge IO Integrated Connector

Right Angle Type

Connector Speed

1	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

Compliant Code

HR	Halogen-Free & RoHS compliant

Variation

–	Standard

Packaging Option

2	Tape & Reel

G97	V	X	X	X	X	X	X	HR

Mini CoolEdge IO Integrated Connector

Vertical Type

Connector Speed

1	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

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)

Compliant Code	
HR	Halogen-free & RoHS compliant

Variation	
-	Standard

CMIOMCIO0721EA4

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Amphenol:

G42V14312HR G42V15312HR G42V16312HR G42R12312HR G42V12312HR G42V11312HR G42V16342HR G42V14332HR G42V15332HR G42V11332HR G42R12352HR G42V12212HR G42R14312HR G42R14332HR G42R14342HR G42V11333HR G42V11353HR G42V12322HR G42R12332HR G42R12342HR G42V12332HR G42V12352HR G42V14322HR G42V16332HR G97R24232HR G97V22322HR G97V22332HR G98V16312HR G97R22322HR G97R26312HR G97V21312HR G97V21353HR G97V24312HR G42R14322HR G97R21312HR G97V21313HR G97V25332HR G97R22332HR G97R27312HR G97V22212HR G97R22312HR G97V22242HR G97V24332HR G97R22352HR G98V14322HR G97V22232HR G97V24352HR G97V21322HR G97V21342HR G97V26312HR G97V26332HR G97R24312HR G97R24322HR G97V22312HR G97V22313HR G97R24332HR G97V27314HR G97V21332HR G97V26322HR G98V1H342HR G97R21322HR G98V11312HR G98V12322HR G98V1H312HR G97V25312HR G98V11332HR G98V1B322HR G97V22352HR G98V15312HR G98V15322HR G97V24322HR