

Achieve rates up to 120 Gbps of pluggable data over 12 lanes in one assembly with Molex's first-to-market iPass+ HSC CXP Copper and Optical System; enhanced-footprint connectors transmit signals over 10 lanes for up to 100 Gbps, meeting the new industry-leading 100 Gigabit Ethernet specification and providing a path to future terabit networks

Molex's iPass+ (HSC) CXP copper and optical system enables twelve channels of 10 Gbps data and the enhanced-footprint integrated connectors enable ten channels of 10 Gbps data, for up to 120 Gbps of total bandwidth. This new technology results in one of the fastest and highest-density I/O's on the market today. The iPass+ HSC CXP system enables pluggable copper or optical options, thereby increasing the flexibility of system-level hardware for end users. This dual-paddle-card system was adopted as the InfiniBand* CXP 12X QDR standard in July, 2008.

By leveraging high-speed wafer technology and compliant-pin tails, Molex has developed two integrated-connector offerings. The enhanced-footprint version is a high-density, 10-channel connector, conforming to IEEE 802.3ba requirements for the 10-channel 100 Gigabit Ethernet interface. The standard version is a high-density, 12-channel connector capable of achieving Quad Data Rates (QDR) of 10 Gbps. The one-piece press-fit connector and cage assembly provides one-step placement to the board and is offered in both single and stacked dual-port configurations.

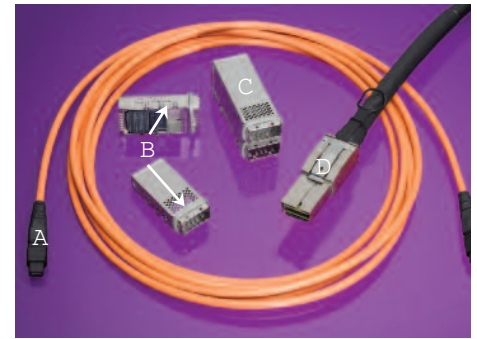
Molex CXP 12X copper cables are designed to accommodate single, ganged or stacked connector configurations in extremely high-density requirements. CXP passive copper cables are available in a variety of lengths. Contact Molex for active copper-cable options and transition cables (CXP-to-QSFP and CXP-to-12x LaneLink).

The low-profile CXP optical 4.50mm round cable assemblies offer improved fiber management over traditional flat cables for connecting CXP transceivers. The CXP optical cable assemblies utilize 24 fibers using industry-standard MTP/MPO connectors, 12 transmit (TX) and 12 receive (RX), and 10 Gbps high-bandwidth (OM3) fiber. This design meets the InfiniBand bandwidth requirements for CXP modules spaced up to 300.00m (984.25'). Molex provides a complete optical CXP solution with cable assemblies and loopbacks. Products include MTP/MPO-to-LC cable assemblies for connections to Small Form-factor Pluggable (SFP) or LC patch panels. Loopback assemblies feature a compact housing that loops optical TX to RX ports for testing, burn-in and field troubleshooting.

The iPass+ Interconnect System offers connectors and cables that enable flexible-speed compatibility for applications ranging from 1 to 10 Gbps and is an ideal solution for the growing server-storage market. For additional information, visit: www.molex.com/link/cxp.html.

iPass+™ High-Speed Channel (HSC) CXP Copper and Optical System

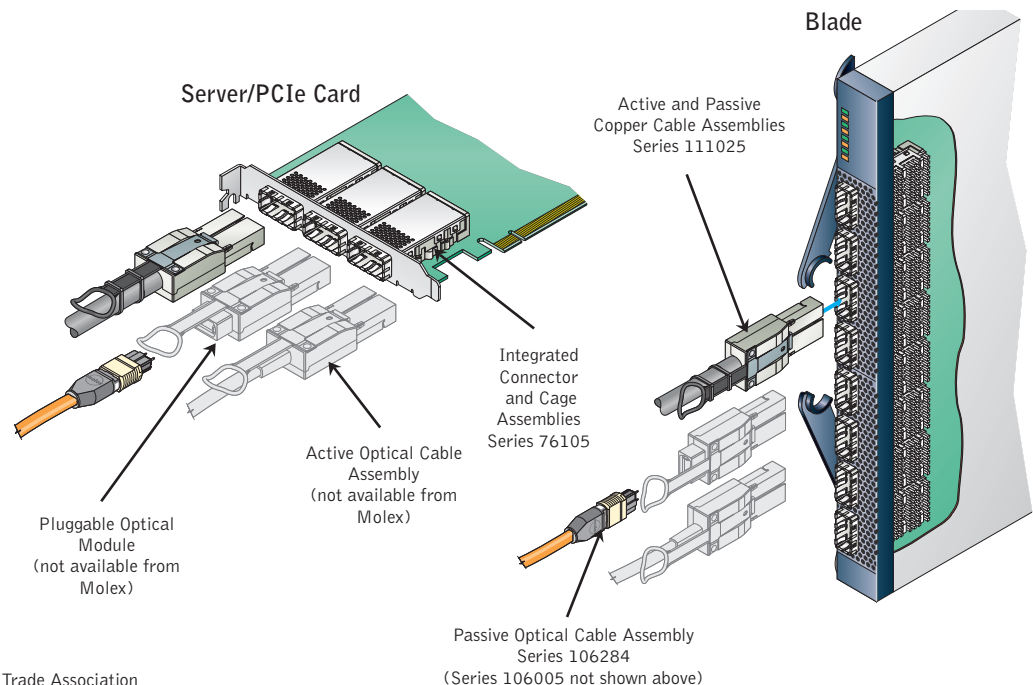
- 76105 Standard Integrated Connector
170465, 170501, 170502 Enhanced-Footprint Integrated Connectors
- 76024 Stacked Dual-Port Integrated Connector
- 111025 Copper Cable Assemblies
- 106284 Optical Cable Assemblies



A: CXP Optical Cable Assembly
 B: iPass+ HSC CXP Standard and Enhanced-Footprint Integrated Connectors
 C: iPass+ HSC CXP Stacked Dual-Port Integrated Connector
 D: iPass+ HSC CXP Copper Cable Assembly

MARKETS AND APPLICATIONS

- High-Performance Computing
 - Controller cards and servers
 - Switches
 - Direct Attached Storage (DAS)
- Data Centers
 - Controller cards and servers
 - Switches
 - Blades
 - Storage Attached Networks (SAN)
- Networking
 - NIC cards and servers
 - Switches
 - Routers
 - Network Attached Storage (NAS)



*InfiniBand is a registered trademark of the InfiniBand Trade Association

FEATURES AND BENEFITS

All Integrated Connectors (Series 76105, 170465, 160501, 170502)

- One-piece integrated press-fit connector and cage provides one-step placement to PCB, lowering board processing time
- Four integral screw-mount hold downs applied from the bottom of the PCB provide optimal retention of the die-cast assembly to PCB
- Two robust guide pins located on each side of the assembly ensures compliant-pin integrity during alignment to PCB
- Ground-pad alleys are located at the rear of the die-cast assembly providing ease of routing off the top layers of the PCB

Integrated Connectors, Standard and Enhanced Footprints (Series 76105, 170465)

- Series 76105 and 170465: Front elastomeric gasket provides optimized EMI protection to face plate
- Series 76105 and 170465: Profile height of 11.88mm (.468") complies with IEEE 802.3ba requirements and low-profile PCIe add-in card component height
- Series 170465: Increased signal spacing reduces cross-talk noise by 6.9mV versus standard-length CXP integrated connectors

Integrated Connectors, Enhanced Footprint, Short and Extended Profiles (Series 170501, 170502)

- Metal gasket provides optimized EMI protection to the faceplate
- Profile height of 11.30mm (.445") improves airflow over higher-profile connectors
- Belly-to-belly design allows heat-sink placement on either side of the PCB for more efficient cooling
- Increased signal spacing reduces cross-talk noise by 6.9mV versus standard-profile CXP integrated connectors

iPass+™ High-Speed Channel (HSC) CXP Copper and Optical System

- 76105 Integrated Connector, 12X
- 170465 Integrated Connector, Enhanced - Footprint, 10X
- 170501 Integrated Connector, Enhanced-Footprint, Short-Profile, 10X
- 170502 Integrated Connector, Enhanced-Footprint, Extended-Profile, 10X



iPass+ HSC CXP Standard and Enhanced-Footprint Integrated Connectors

SPECIFICATIONS

Reference Information

Packaging: PK-76105-001
 UL File No.: Pending
 CSA File No.: Pending
 Mates With: 111025
 Designed In: Millimeters

Electrical

Voltage (max.): 30V
 Current (max.): 0.5A
 Dielectric Withstanding Voltage: 500V DC
 Insulation Resistance: 1000 Megohms

Physical

Housing: High Temperature Glass-filled Thermoplastic
 Contact: Copper (Cu) Alloy
 Plating:
 Contact Area — 0.76µm min. Gold (Au)
 Solder Tail Area — 0.76µm min. Tin/Lead (Sn/Pb)
 Underplating — 2.54µm min. Nickel (Ni)
 PCB Thickness: 1.57mm (.062") min.
 Operating Temperature: -40 to +80°C

Mechanical

Insertion Force to PCB: 25N (5.62 lbf) per pin max.
 Mating Force: 210N (47.21 lb) min.
 Unmating Force: 42N (9.44 lb) min.
 Durability (min.): 250 cycles

ORDERING INFORMATION

Order No.	Footprint	Connector Length	Profile Height	Specification Requirement	Cover	EMI Gasket	Lanes	Circuit Size
76105-0584	Standard	Standard	11.88mm	InfiniBand	Yes	Front elastomeric	12	84
170465-0002	Enhanced	Standard	11.88mm	100 Gigabit Ethernet	Yes	Front elastomeric	10	84
170465-0102	Enhanced	Standard	11.30mm	100 Gigabit Ethernet	No	Front elastomeric	10	84
170501-0001*	Enhanced	Standard	11.30mm	100 Gigabit Ethernet	No	Metal finger	10	84
170502-0001*	Enhanced	Extended	11.30mm	100 Gigabit Ethernet	No	Metal finger	10	84

Note: All connectors have 84 circuits; enhanced-footprint connectors do not use all terminals
 *Contact Molex Customer Service to order parts.

FEATURES AND BENEFITS

- Two 12x ports in a stacked configuration accepts industry-standard cabling while providing optimal bandwidth in the same PCB beach front as the single port; height fits within a 1U Rack-mount enclosure
- One-piece integrated press-fit connector and cage provides one-step placement to PCB, lowering board processing time
- Four integral screw-mount hold downs applied from the bottom of the PCB provide optimal retention of the die-cast assembly to PCB without taking up additional board real estate
- Two robust guide pins located on each side of the assembly ensures compliant-pin integrity during alignment to PCB
- Front elastomeric gasket and electro magnetic interference (EMI) fingers provide optimized EMI protection to face plate
- Ground-pad alleys located at the rear of the diecast assembly provide ease of routing off the top layers of the PCB

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iPass+™ High-Speed Channel (HSC) CXP Copper and Optical System

76024 Stacked Dual-Port Integrated Connector

SPECIFICATIONS

Reference Information

Packaging: PK-76024-001
UL File No.: Pending
CSA File No.: Pending
Mates With: 111025
Designed In: Millimeters

Electrical

Voltage (max.): 30V
Current (max.): 0.5A
Dielectric Withstanding Voltage: 500V DC
Insulation Resistance: 1000 Megohms

Mechanical

Insertion Force to PCB: 25N (5.62 lbf) per pin max.
Mating Force: 210N (47.21 lb) min.
Unmating Force: 42N (9.44 lb) min.
Durability (min.): 250 cycles

Physical

Housing: High Temperature Glass-filled Thermoplastic
Contact: Copper (Cu) Alloy
Plating:
Contact Area — 0.76µm min. Gold (Au)
Solder Tail Area — 0.76µm min. Tin/Lead (Sn/Pb)
Underplating — 2.54µm min. Nickel (Ni)
PCB Thickness: 1.57mm (.062") min.
Operating Temperature: -40 to +80°C



ORDERING INFORMATION

Order No.	Plating	Circuit Size	Plant No. for Samples
76024-0568	0.76µm Min. Gold	168	3109

FEATURES AND BENEFITS



- Built to CXP specifications to be compliant up to QDR speeds per InfiniBand Architecture Specification Volume 2, 1.2.1
- Dual paddle-card design provides cost-effective, high-density solution; each cable port is capable of up to 120 Gbps
- Zinc die-cast back shells on cable plug provides 360° electro magnetic interference (EMI) signal shielding
- Ergonomic “pull-to-release” latching system enables low-impact cable disengagement
- Supports serial ID functionality allows individual cable identification
- Hot pluggable cable allows insertion and removal of plug without powering down the system

iPass+™ High-Speed Channel (HSC) CXP Copper and Optical System

106284 Optical Cable Assemblies

SPECIFICATIONS

Reference Information

Packaging: Bag and Box
Mates With: 76105
Designed In: Millimeters

Mechanical

Mating Force: 210N (47.21 lb)min.
Unmating Force: 42N (9.44 lb) min.
Durability (min.): 250 cycles

Electrical

Voltage (max.): 30V AC
Current (max.): 0.5A

Physical

Housing: Zinc diecast
Contact Area: Gold (Au) over Nickel (Ni)
Plating: Nickel (Ni)
Operating Temperature: -40 to +80°C



ORDERING INFORMATION

Order No.	Length	Order No.	Length
111025-1200	0.50m (1.64ft)	111025-1205	5.00m (16.40ft)
111025-1201	1.00m (3.28ft)	111025-1206	6.00m (19.69ft)
111025-1202	2.00m (6.56ft)	111025-1207	7.00m (22.97ft)
111025-1203	3.00m (9.84ft)	111025-1208	8.00m (26.25ft)
111025-1204	4.00m (13.12ft)	111025-1210	10.00m (32.81ft)

FEATURES AND BENEFITS

- MTP/MPO CXP connector interface meets CXP interface specifications
- Low-profile, round cable design for improved cable management over flat cable, with 360° cable-routing capability
- Up to 10 Gbps data rate capability provides optimized bandwidth by application
- RoHS compliant to meet environmental requirements for electronic equipment and accessories

iPass+™ High-Speed Channel (HSC) CXP Copper and Optical System

106284 Optical Cable Assemblies

SPECIFICATIONS

Reference Information

Packaging: Individual pack in a bag
Mates With: CXP Optical Transceivers

Optical

Fiber Specifications:
Fiber Count: 24 fibers (12 TX / 12 RX)
Multi Mode: 50/125µm
Insertion Loss at Test:
Multi Mode: 0.22dB Typical; ≤0.75dB max.
Connector to Connector: MTP to MTP
Bandwidth: See table below

Mechanical

Bend Radius: 50.8mm (2.00") min.
long-term

Physical

Jacket Dimensions:
Interconnect Cables – 1 to 20 meters:
4.50mm (.177")
Distribution Cables – 21 to 300 meters:
5.40mm (.213")
Fire Rating:
OFNR (Riser): Lengths less than or equal to 20 meters
OFNP (Plenum): Lengths over 20 meters
Operating Temperature: 0 to +70°C
Storage Temperature: -40 to +70°C



BANDWIDTH SPEEDS

	Overfilled Launch Bandwidth, Min. (MHz-km)		1 Gigabit Ethernet Link Distance, Min. (m)		10 Gigabit Ethernet Link Distance, Min. (m)	
	850nm	1300nm	850nm	1300nm	850nm	1300nm
Standard Bandwidth	500	500	600	600	86	-
High Bandwidth	1500	500	900	550	300	-

ORDERING INFORMATION

Order No.	Bandwidth	Fire Rating	Cable Diameter	Length
106284-1001	High (10 Gbps)	OFNR (Riser)	4.50mm (.177")	1.00m (3.28')
106284-1005				5.00m (16.40')
106284-1010				10.00m (32.81')
106284-1015				15.00m (49.21')
106284-1020				20.00m (65.62')
106284-1025		OFNP (Plenum)	5.40mm (.213")	25.00m (82.02')
106284-1030				30.00m (98.43')
106284-1050				50.00m (164.04')
106284-1100				100.00m (328.08')