

Nano-Pitch™ Interconnect System and Cable Assemblies



With industry-leading port density, multi-protocol support and enhanced signal integrity, Nano-Pitch I/O™ Interconnect System and Cable Assemblies are redefining PCIe and SAS solutions in the storage, mobile and enterprise industries

Features and Benefits

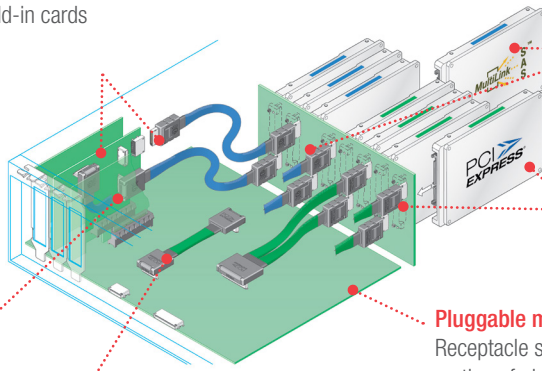
Low-profile add-in card applications

12.00mm height (max.) of mated cables is below the 14.47mm height (max.) for components on PCIe add-in cards

**Data rates of 25 Gbps for 80-circuit version;
16 Gbps for 42-circuit version**

Meets today's data transfer needs with increased port density and speed in smaller packaging.

42-circuit connectors shown. Similar applications are supported by the 80-circuit connectors



Blue: SAS cables and cards

Green: PCIe cables and cards

Pluggable module applications
Receptacle supports mid-board mating of pluggable modules

Small footprint does not block airflow

Utilizes thin 34 AWG 85 Ohm (PCIe) or 32 AWG 100 Ohm (SAS) wire bundled inside a protective expando sleeve

Point-to-point cable

Lower-loss solutions can simplify PCB construction and lower costs



4X Nano-Pitch I/O™ Right-Angle Cable Assembly



8X Nano-Pitch I/O™ XD Receptacle

4X cables now available in full 42 circuits allowing the use of sidebands. Up to six sidebands can be used for control management or power and come in 30-34 AWG for maximum flexibility

Provides additional pin assignment flexibility for 6 side bands. Six-side bands are now configurable

Applications

Storage Systems

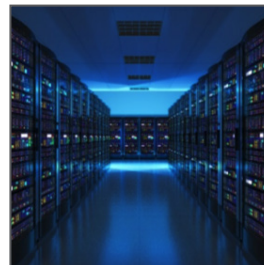
- Data Center and Enterprise Storage Systems
- Storage Racks
- JBODs
- Storage Controllers
- HBA (Host Bus Adapter) Servers
- RAIDS (Redundant Array of Individual Disks)

Telecommunications/Networking

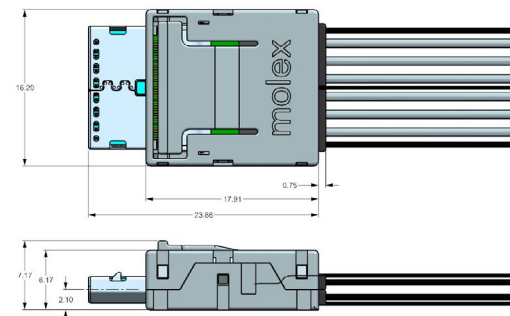
- Hubs
- Servers
- Switches
- Routers



Telecommunication Hub



Storage Systems



Low profile connectors

Meets OcuLink 1.0 specifications

Nano-Pitch™ Interconnect System and Cable Assemblies



Specifications

REFERENCE INFORMATION

Packaging: Tape and Reel
 UL File No.: In Process
 CSA File No.: In Process
 Mates With: Nano-Pitch I/O™ Cable Assy.
 Designed In: Millimeters
 RoHS: Yes
 Halogen Free: Yes

ELECTRICAL

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

Contact Resistance (max.): <10 Megohms
 Dielectric Withstanding Voltage: 660V AC

MECHANICAL

Mating Force w/o Latch: 20N Max
 Mating Force with Passive Latch: 40N Max
 Mating Force with Active Latch: 40N Max
 Unmating Force w/o Latch: 16N Max
 Unmating Force with Passive Latch: 25N Max
 Unmating Force with Active Latch: 25N Max
 Durability (min.) Internal: 50 cycles

PHYSICAL

Housing: Glass-Filled Thermoplastic, UL94V-0
 Contact: High-Performance Copper Alloy
 Shield: Stainless Steel
 Plating (min.):
 Contact Area — 0.76µm Gold
 Solder Tail Area — 2.54µm Tin
 Shield — Matte Tin over 1.27µm Nickel
 Underplating — 2.0µm Nickel Overall
 PCB Thickness: Up to .093" for solder tails

Ordering Information

Nano-Pitch I/O™ Receptacles

Series	Circuit size	Orientation	Shell Retention	Cap
171982	42	RA	SMT	None
			Through-Hole	None
Vertical		SMT	Black	
		Through-Hole	Black	
171983	80	RA	XD	Black
			SMT	None
	Vertical	Through-Hole	None	
		SMT	Black	
173162	42	RA	Through-Hole	Black
			SMT	Black
	Vertical	Through-Hole	Black	
		XD	Black	

Nano-Pitch I/O™ (NPIO) 4x Cables

Part No.	Orientation	AWG	Circuits	Length (m)
100436-1xxx	Straight NPIO to Straight NPIO	34	38	0.3, 0.5, 1.0
100436-3xxx	Straight NPIO to Straight iPass™	34	38	0.3, 0.5, 1.0
100436-4xxx	Straight NPIO to Straight iPass+™ HD	34	38	0.3, 0.5, 1.0
100153-1xxx	Right-Angle NPIO to Straight NPIO or Right-Angle NPIO	34	38	0.3, 0.5, 0.7, 1.0
202143-1xxx	Straight NPIO to Straight NPIO with Sidebands	34	42	0.3, 0.5, 0.7, 1.0
202143-4xxx	Straight NPIO to Straight iPass+™ HD with Sidebands	34	42	0.3, 0.5, 1.0
202492-1xxx	Right-Angle NPIO to Straight NPIO or Right-Angle NPIO with Sidebands	34	42	0.3, 0.5, 0.7, 1.0

Nano-Pitch I/O™ (NPIO) 8x Cables

Part No.	Orientation	AWG	Circuits	Length (m)
200226-1xxx	Straight NPIO to Straight NPIO	34	76	0.2, 0.3, 0.5, 1.0
200226-4xxx	Straight NPIO to (2) Straight iPass+ HD	34	76	0.3, 0.5, 0.7, 1.0
200227-1xxx	Right-Angle NPIO to Straight NPIO	34	76	0.3, 0.5, 1.0
200227-2xxx	Right-Angle NPIO to Right-Angle NPIO	34	76	0.3, 0.5, 1.0

Custom Cable Assemblies

Custom	Description	Circuit Size	AWG and Impedance
Contact Molex	Nano-Pitch I/O™ Cable Assemblies	4x up to 42, 8x up to 80	34 AWG - 85 Ohm (PCIe), 32 AWG - 100 Ohm (SAS)

www.molex.com/link/nanopitchio.html