



# NEARSTACK PCIe CONNECTOR SYSTEM AND CABLE JUMPER ASSEMBLIES

**molex**

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## CUSTOMER CHALLENGES

- As system architects design high-speed signal channels from one side of a system to the other, they face obstacles that become increasingly challenging at higher frequencies
- Our customers are tasked with enabling the full capabilities of new generations of CPUs to their end users
  - This requires increasing connectivity within servers and storage hardware
- With specific pinout requirements and signal integrity targets, a solution is needed to support next-generation PCIe Gen-5 system implementation



## MOLEX PRESENTS NEARSTACK PCIe CONNECTOR SYSTEM AND CABLE ASSEMBLIES

- Twinax cables deliver a PCB alternative and have been optimized for height, PCB density and robustness while enabling implementation of PCIe Gen-5 32-Gbps data rates

*NearStack PCIe Connector System*



*R/A Cable Assembly*  
Available now

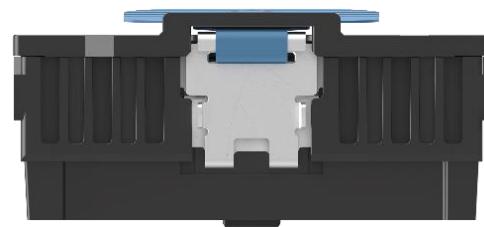
*Vertical Cable Assembly*  
Available Q2 2021



## FEATURES AND ADVANTAGES

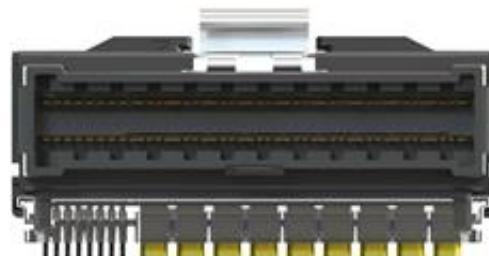
### Integrated metal latch on cable connector

Engages with metal cage on the PCB connector creating a robust positive latch when mated; also offered with a pull tab release feature



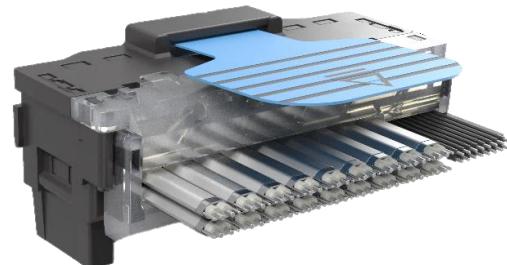
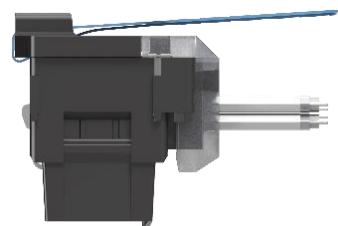
### Direct-to-contact weld termination with wires welded directly to signal contact

- Removes paddle card from the assembly
- Produces highly repeatable assemblies for predictable SI results



### Capable of PCIe Gen 5 32 Gbps performance

Supports PCIe Gen 5 requirements, both with regards to signal speed (32 Gbps NRZ) and number of pins



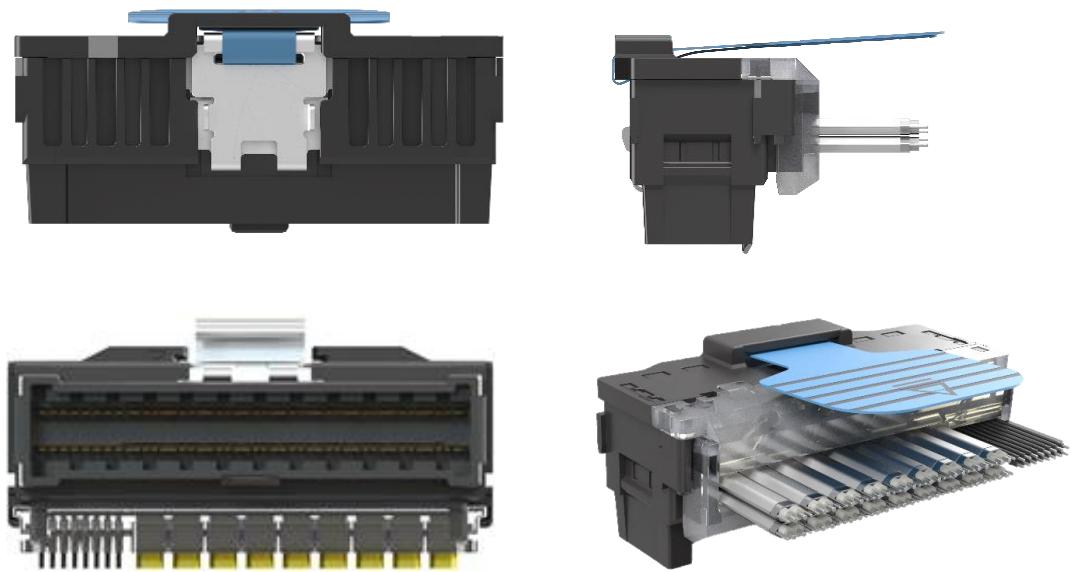
*NearStack PCIe Cable Receptacle Connector*



## FEATURES AND ADVANTAGES

### Unique contact interface with flexing beams on NearStack cable receptacle

No chance for pre-loaded beam relaxation through reflow. Less potential for damage to hard-to-rework PCB side. Reduced stub lengths compare to traditional cantilever on PCB pad



*NearStack PCIe Cable Receptacle Connector*

### x8 version available, which is a single-bay, two-wafer connector

- Delivers 18 differential pairs (GSSGSSG) and 16 single-ended signals (72-pins total)
- Single ground between DPs maximizes density



# FEATURES AND ADVANTAGES

## Low profile solution

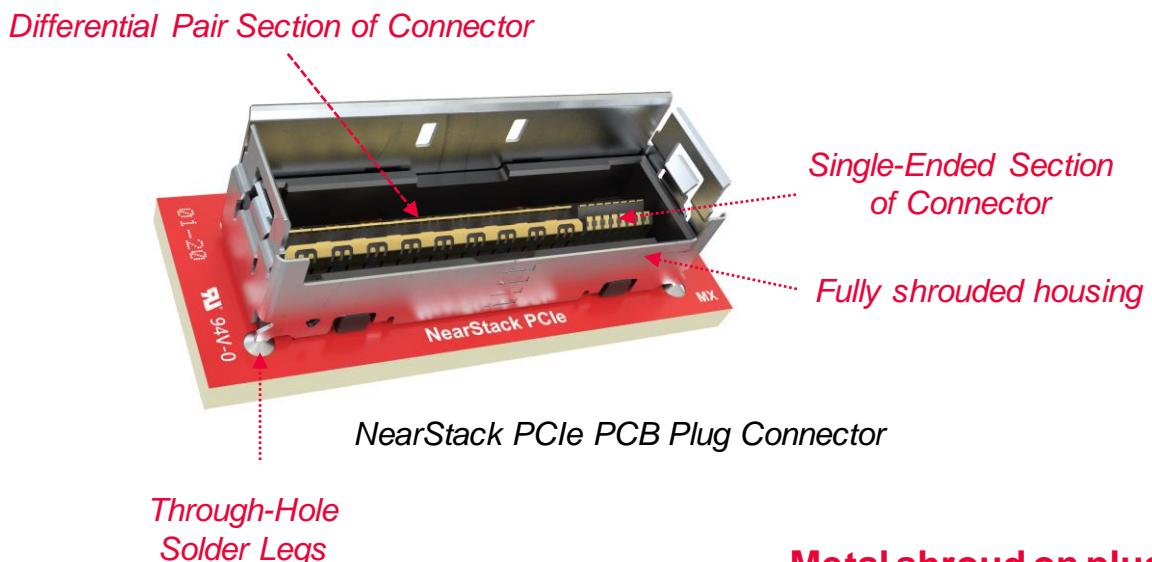
A mated height of 11.1mm (R/A cable) creates a significant benefit to our customers by reducing airflow interference and allowing for placement in tighter spaces within the system

## Protected interface

Signal pins are protected from “scoop” mating and angled misalignment of up to 6 degrees

## Ships with Pick & Place Cap

Packaged in tape & reel packaging with pick & place cap for seamless integration into a standard PCB assembly process



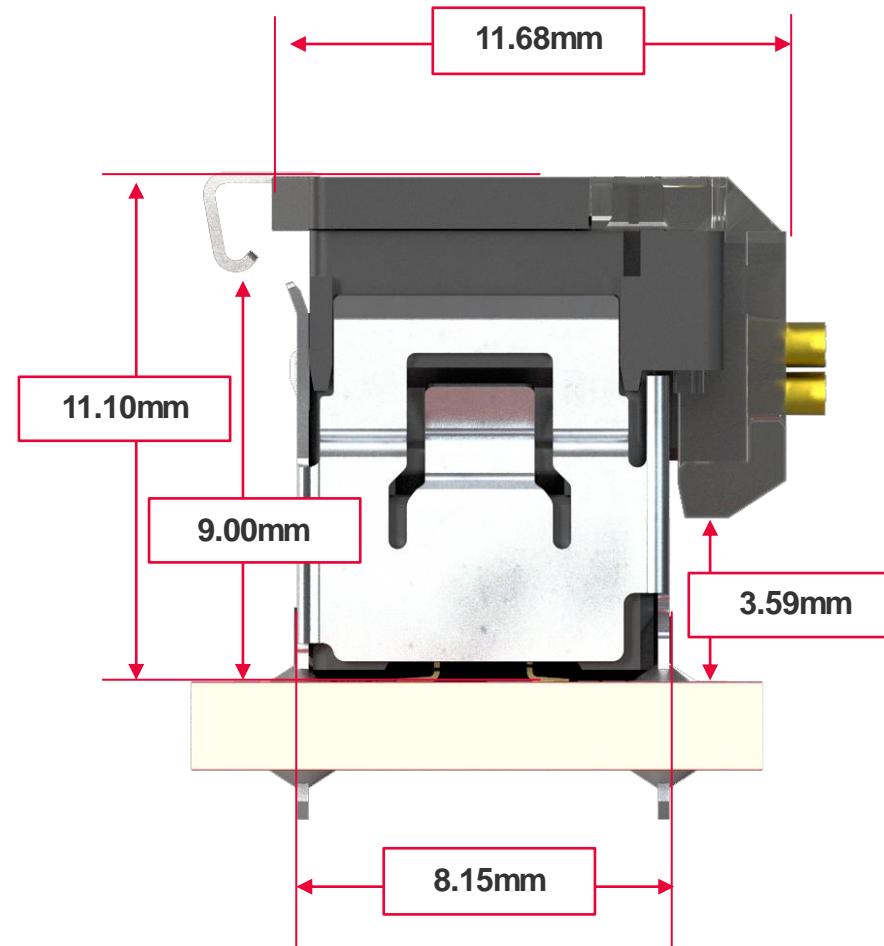
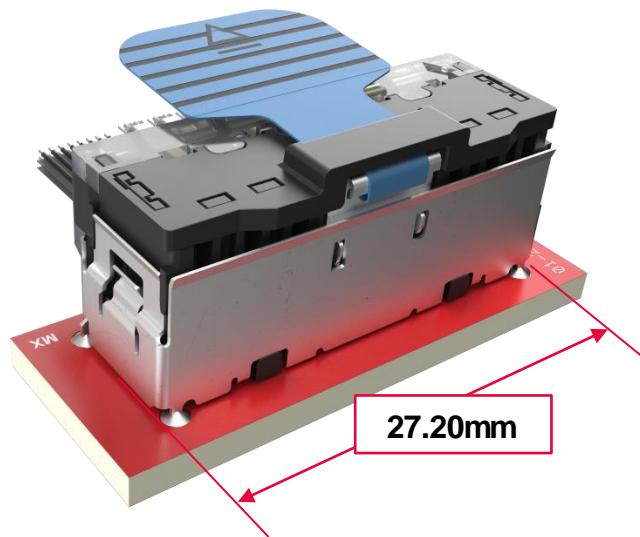
## Metal shroud on plug

- Allows for positive thumb latch interface and solder tail attachment
- Provides rugged, reliable PCB retention



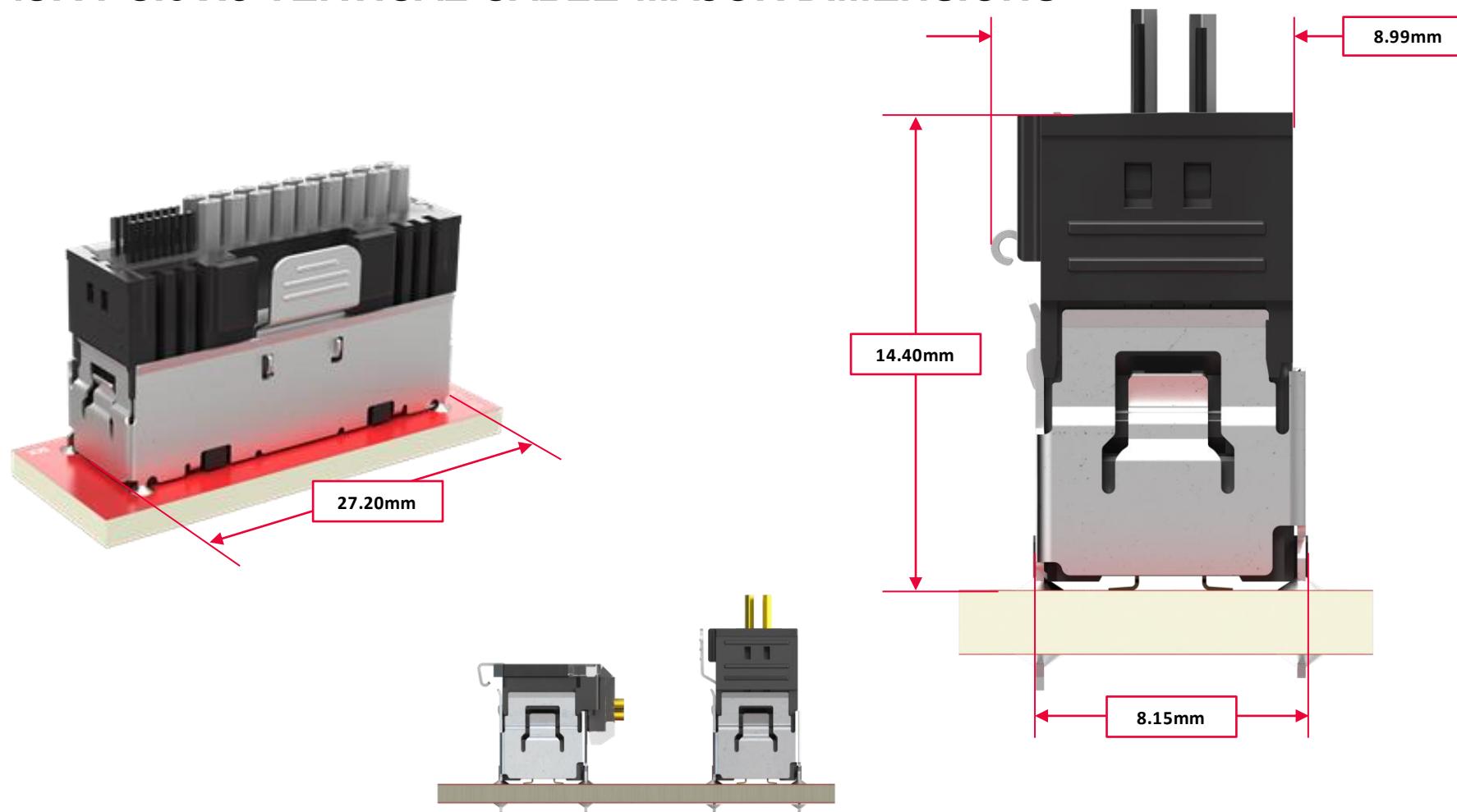
## ADDITIONAL PRODUCT FEATURES:

### NEARSTACK PCIe X8 R/A CABLE MAJOR DIMENSIONS



## ADDITIONAL PRODUCT FEATURES:

### NEARSTACK PCIe X8 VERTICAL CABLE MAJOR DIMENSIONS



# MARKETS AND APPLICATIONS



- *Servers*
- *Storage*
- *High-performance computing*
- *Accelerator hardware (graphics, AI)*



# FURTHER INFORMATION

## [Datasheet](#)

**NearStack PCIe Connector System and Cable Jumper Assemblies** **molex**

NearStack PCIe Connector System and Cable Jumper Assemblies use twinax cables to deliver a PCB alternative and have been optimized for height, PCB density and robustness while enabling implementation of PCIe Gen-5 32-Gbps data rates

**Features and Advantages**

- Built with direct-to-contact twinax termination. Reduces the PCB real estate from the assembly, improving manufacturing efficiencies, repeatability, and signal integrity.
- Unique contact interface with flexing beams on NearStack cable receptacle. Affects no chance for potential contact oxidation through reflow. Has less potential for damage to hard-to-rework PCB sides. Offers reduced stub lengths compared to traditional card-on-card on PCB side.
- Metal shroud on plug. Allows for positive thumb latch interface and solder tail attachment. Provides rugged, reliable PCB retention.
- Protected interface. Signal pins are protected from "scoop" mating and angled misalignment of up to 6 degrees.
- Right-angle and vertical cable assemblies available. Provides design flexibility with more options for cable routing.
- Capable of PCIe Gen 5 32 Gbps performance. Supports PCIe Gen 5 requirements, with regards to both signal speed (32 Gbps NRZ) and number of pins.
- x8 version available, which is a single-bay, two-wafer connector. Delivers 18 differential pairs (32G5555Q) and 16 single-ended signals (72 pins total). Single ground between DPs maximizes density.
- Through-Hole Solder Legs.
- Fully Shrouded housing.



## [Overview Page](#)

**NearStack High-Speed Cable Assembly Solutions**

NearStack High-Speed Cable Assembly solutions deliver superior performance with unique site advantages by implementing an optimized discrete connector system that maximizes system performance.

[Read More Details](#) [Contact Us](#)

Impedance: 50 and 100 Ohm. Price: \$3.50 - \$6.00

Wire AWG: 22 - 24 based on application

**Near Stack 100 Ohm**

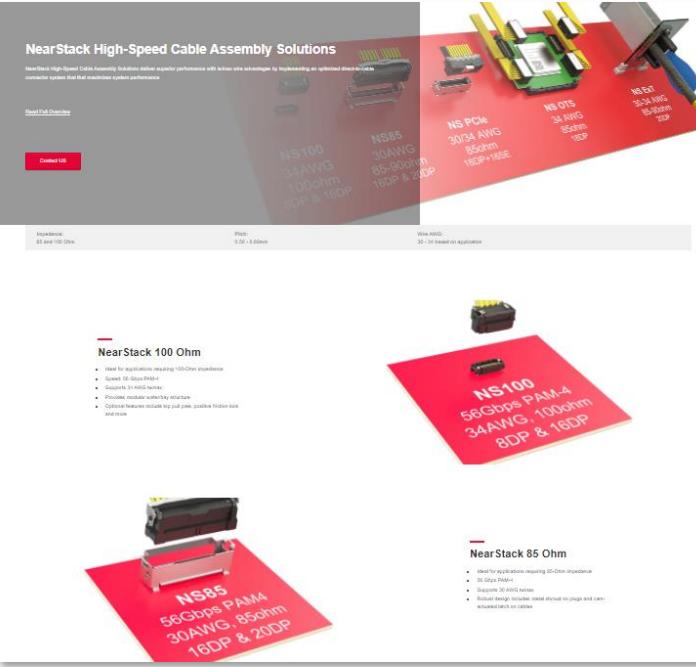
- Ideal for applications requiring 100-Ohm impedance.
- 30 Gbps PAM4.
- Supports 31 AWG wires.
- Provides modular wire-to-key structure.
- Optional features include low-profile positive latches and noise.

**NS100**  
56Gbps PAM4  
34AWG, 100nm  
80P & 160P

**Near Stack 85 Ohm**

- Ideal for applications requiring 85-Ohm impedance.
- 30 Gbps PAM4.
- Supports 31 AWG wires.
- Robust design includes metal shroud on plugs and cable-terminated shroud on cables.

**NS85**  
56Gbps PAM4  
30AWG, 85nm  
16DP & 20DP



**THANK YOU**

Contact info [here](#)

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