Delivering the market's cleanest signal integrity at 28+ Gbps, Molex's modular NeoScale™ Mezzanine System features a high-speed triad wafer design with Solder-Charge Technology™ for customized PCB routing in high-density system applications

Ideal for space-constrained designs with limited PCB real estate, the modular NeoScale mezzanine system provides a durable and easily customizable design tool for high-density system applications. Each NeoScale triad wafer is an independent element in the housing and can be customized to a design layout. With four triad wafer configurations, customers can mix and match components to build a mezzanine solution to meet their requirements for signals supporting high-speed differential pairs (85 and 100 ohm), high-speed single-ended transmissions, low-speed single-ended signals and power contacts.

For more information visit: www.molex.com/link/neoscale.html.

NeoScale™ High-Speed Mezzanine System

170807 Vertical Plug

170814 Vertical Receptacle

NeoScale™ High-Speed Mezzanine System Left: Plug, Right: Receptacle 6-by-20 (120 triads)

FEATURES AND BENEFITS

- Patent-pending modular triad wafer design with four triad configurations and high-speed differential pairs (in both 85 and 100 Ohm impedance), high-speed single-ended traces, low-speed single-ended lines and power contacts provides a customized system for design flexibility
- Housing design based on honeycomb construction isolates each differential pair for optimal performance and customization
- High-speed triad wafers comprise three pins per differential pair (two signal pins and one shielded ground pin) providing stand-alone 28+ Gbps fully shielded differential pairs with dedicated grounds
- Connectors feature 246 circuits with a density of 82 differential pairs per square inch offers ultra-high-density signal solution with optimal signal integrity performance
- Mirror-image triad layout enables the PCB routing in one or two layers for four- and six-row housings respectively providing ease in PCB routing and lowers overall system costs by decreasing the number of PCB layers required for signal routing
- Tombstone structures incorporated within the receptacle housing prevents terminal damage by protecting the mating contact interface
- Innovative PCB connection using patented Solder-Charge Technology™; proven surface mount technology (SMT) attach method for highly reliable and robust solder joints
- Available in 12.00 to 42.00mm stack heights, circuit sizes of 8 to 300 triad wafers in 2-, 4-, 6-, 8- and 10-rows and 85 or 100 Ohm impedance provides design flexibility to address engineering constraints in system envelopes
- Reliable mating interface with 2.00mm wipe gives sufficient conductive wipe for clean signal transmission and enhanced performance
- Durable housing material provides a robust system with mechanical stability

SPECIFICATIONS

Reference Information

Packaging: Tray

Mates With:
NeoScale Vertical Plug (Series 170807) mates with NeoScale Vertical Receptacle (Series 170814)

Designed In: Millimeters

RoHS: Yes

Halogen Free: Yes

Electrical

Voltage (max.): 30V AC RMS max.

Current (max.): 1.0A

Contact Resistance: 30 Milliohms max.

Dielectric Withstanding Voltage:
200V AC RMS

Insulation Resistance:
1000 Megohms min.

Mechanical

Contact Retention to Housing: 1N

Mating Force: 0.75N max.

Unmating Force: 0.25N min.

Durability (min.): 100 cycles

Physical

Housing: High-temperature LCP

Contact: Copper (Cu)

Plating:
Contact Area — 30µ" Gold (Au)
Solder Tail Area —15µ" Gold (Au)
Underplating — 45µ" Nickel (Ni)

Operating Temperature: -55 to +85°C

ADDITIONAL PRODUCT FEATURES

- Plug assembly features one differential pair with a 2.80mm pitch
- Receptacle assembly housing includes polarization and keying features
- Ground pin has two SMT attachment points, with four solder charge joints per triad wafer
- The orientation of the NeoScale plug and receptacle provides a mirrored configuration with a dividing line of back-to-back shields. The resulting mirror line bisects the triad pair to facilitate PCB routing and RX/TX pin-out management for optimal signal integrity and mechanical stability.

NeoScale™ High-Speed Mezzanine System

170807 Vertical Plug

170814 Vertical Receptacle

Unique, patent-pending triad wafer design (individual triad close-up)

Triad wafer configuration

Dense mechanical envelope of mated system

Honeycomb housing structure for improved signal clarity

Tombstone feature in housing to prevent terminal damage

APPLICATIONS

- Telecommunication Applications
  - Hubs
  - Servers
- Enterprise Networking
  - NAS towers
  - Rack mount servers
- Industrial Controllers
  - Personality cards
- Medical and Military
  - High data-rate scanning

Servers

ORDERING INFORMATION

Plug

Order No.	Plating	Connector Height	Triad Wafer Configuration (row-by-column)
170807-0011	30µ" Gold	8.00mm	4-by-18
170807-0015		12.00mm	6-by-8

Receptacle

Order No.	Plating	Connector Height	Triad Wafer Configuration (row-by-column)
170814-0009	30µ" Gold	8.00mm	4-by-18
170814-0015		12.00mm	6-by-8

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www.molex.com/link/neoscale.html

Order No. 987650-6991 Rev. 0.1

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