



# NEOPRESS HIGH-SPEED PRESS-FIT MEZZANINE SYSTEM OPTIMIZES PCB DESIGN FLEXIBILITY

**All-In-One Modular Triad Wafer Configuration Delivers Major Improvements—Space Savings, Fully Configurable Press-Fit Technology, Faster Lead Times**

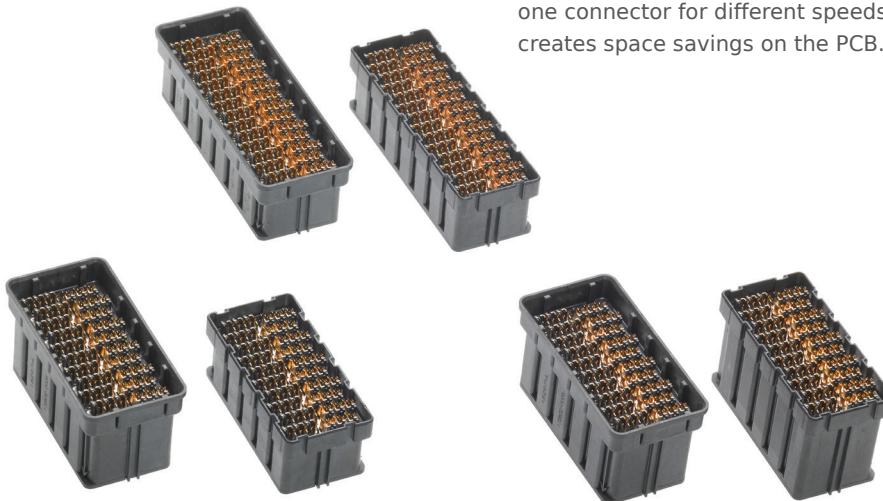
## BUSINESS CHALLENGE

Multiple diverse industries rely on mezzanine technologies to make board-to-board connections—from telecommunications and networking to medical and industrial automation equipment. High-density hubs, NAS towers and rack-mount servers, any application that uses a backplane connection is typically accompanied by a mezzanine card. Designers need strategies to achieve higher speeds without monopolizing valuable PCB real estate. The number of differential pairs and mix of signal and power requirements are important considerations when choosing a high-speed mezzanine connector. Traditional surface-mount (SMT) connectors are a solid option but not without drawbacks. A soldered SMT connector permanently affixed to a costly PCB makes reworking a board much more challenging. Customizing an SMT connector can drive up cost, manufacturing processes and time to market. Modular mezzanine systems featuring a high-speed triad wafer design greatly simplified PCB routing in high-density applications. However, many customers wanted a press-fit version to provide even greater design flexibility.

## SOLUTION

A versatile and economical solution, the NeoPress High-Speed Mezzanine System provides compliant-pin termination while minimizing near-end and far-end crosstalk to match the signal integrity of popular SMT connectors. The triad wafer technology provides dedicated differential pairs to accommodate power and chip impedance requirements. Available in 9.00 to 45.00mm mated stack heights, the modular NeoPress achieves low- and high-speed signals up to 28 Gbps with tunable differential pairs between 85 and 100 Ohms.

The NeoPress system addresses engineering challenges in system envelopes. Unlike standard wafer-style mezzanine connectors, which are generally limited to two or four pair configurations, the NeoPress design takes a unique approach allowing customers multiple configurations in a single connector. The high-speed triad wafers comprise three pins per differential pair—two signal pins and one shielded ground pin—to provide standalone 28 Gbps fully shielded differential pairs with dedicated grounds. This means designers need only one connector for different speeds, which creates space savings on the PCB.





## BENEFITS AND ROI

By building a mezzanine connector based on the actual requirements a customer needs, Molex NeoPress high-speed connectors optimize PCB design flexibility and savings with faster lead times than other solutions. Terminals represent a high cost in tooling mezzanine connectors. The NeoPress compliant press-fit pin technology provides a range of termination options, while eliminating the solder and reflow process. The hermaphroditic interface requires tooling of only one set of terminals, which translates into a cost savings that can be passed along to customers. The plug and shield contacts protect the receptacle beams to prevent terminal damage. The flexible tooling strategy is a major improvement. A NeoPress connector can be tooled in about half the time and at a lower cost than a standard mezzanine connector.

The NeoPress system enables tunable differential pairs, low stack heights and compliant-pin terminations for maximum flexibility on a PCB. Ideal for space-constrained applications requiring higher speed and smaller form factors, the triad wafer design can incorporate power triads, single-ended triads for low-speed options and high-speed differential pairs. NeoPress connectors feature a density of 76 differential pairs or triads per square inch for an ultra-high-density press-fit signal solution with excellent signal integrity performance.

## NEOPRESS DELIVERS

- Data rates up to 28+ Gbps with scalable migration path
- Patented triad wafer design for ultimate modular customization
- High-speed differential pairs tunable to 85 to 100 Ohm impedances
- Mirror-image triad layout simplifies PCB signal routing and lower overall system costs
- Hermaphroditic interface supports flexible system requirements while reducing costs
- Press-fit compliant-pin termination for solderless termination with easy board rework

To explore more design benefits of the Molex NeoPress High-Speed Mezzanine System, click [www.molex.com/link/neopress.html](http://www.molex.com/link/neopress.html).

To learn more [www.molex.com/link/neopress.html](http://www.molex.com/link/neopress.html)

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