



IMPEL™ PLUS POWERS FASTER CONNECTIONS

New Backplane Connector Enables High-Speed PAM4 and NRZ Systems



BUSINESS CHALLENGE

As the need for higher-speed data grows, network appliance OEMs are developing systems to meet that demand. As a result, many system designs require next-generation backplane connectors.

However, those backplane connectors must tackle the technical challenges of higher speeds, which can include higher insertion loss and degraded signal integrity (SI). And, to remain competitive, network appliance OEMs must minimize current and future infrastructure investment. That means higher-speed backplane connectors must be both backward and forward compatible so they can work with existing systems as well as new-generation systems currently on the drawing board.

SOLUTION

The Impel™ Plus Backplane Connector series from Molex takes the Impel™ family to the next speed level by improving insertion loss and reducing cross talk. The advanced modules offer an upgrade path for OEMs looking for their next speed improvement, or for larger margins in their current systems.

Molex recently demonstrated the Impel Plus Backplane Connector, operating in compliance to OIF CEI-56G-LR-PAM4, on various channel lengths using advanced hybrid dielectric materials and PAM4 test silicon from a leading semiconductor supplier. The live demonstration provided critical channel output through a complete high-speed link, leveraging PAM4 SerDes technology to transmit 56 Gbps data through the Impel/Impel Plus copper backplane kit from Molex.

CUSTOMER BENEFITS

The Impel Plus Backplane Connector System provides several key benefits for both PAM4 and NRZ high-speed systems:

- Full backward compatibility. The Impel Plus system uses a standard header, meaning the only required upgrade is a new daughtercard module that can plug into the existing header. As a result, Impel Plus connectors can be used in the same system with traditional backplane connectors, such as Impel. Not every connection needs to be high-speed capable, and it is more cost effective to use traditional backplane connectors where appropriate
- Impel Plus Backplane Connectors meet customer needs by offering a selection of sizes. Connectors are available in 3-pair and 4-pair and coming soon is the 6-pair size.
- The connectors include a grounding tail aligner and smaller signal compliant pins which lowers cross-talk and improves impedance profile.

- New signal beam design improves insertion loss and pushes interface resonance frequency past 30 GHz
- A tightly coupled differential-pair structure provides optimal SI and mechanical isolation throughout the connector system
- Impel Plus Backplane Connectors can be used for applications in several markets, including telecom and networking (hubs and servers); medical (patient monitoring), and aerospace/defense
- The connectors are compliant with IEEE 100GBASE-KR, 100GBASE-KP and the Optical Internetworking Forum (OIF) CEI-25G-LR

To view a demonstration of the Impel Plus Backplane Connector System, click **HERE**

To learn more about Impel and Impel Plus Backplane Connector and Cable Assembly Systems, click **HERE**.

To learn more www.molex.com