

# 802.3bj MDI Baseline Proposal

## 100Gb/s Backplane and Copper Cable Task Force

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# 802.3bj MDI Proposal

- Industry perspective:
  - OIF is in the process of completing CEI-28G-VSR, a channel for chip to module interface
  - InfiniBand is developing EDR as their 25Gb/s interface
  - IEEE 802.3bj and IEEE Next Generation 100Gb/s Optical Ethernet Study Group
- Connector companies have developed 28Gb/s capable extensions of the existing QSFP+ interface. These extensions are known as QSFP28.
- The mechanical mating interface of QSFP28 is backwards compatible to QSFP+
- IEEE STD 802.3ba uses QSFP+ as a 40Gb/s MDI interface in Clause 85.11.1.1

# QSFP28 Electrical Performance

- QSFP28 electrical performance is consistent with the performance cited in other presentations
  - Diminico\_01a\_0112, test points
  - Diminico\_01a\_1111, twinaxial Cu cable assy
  - Dudek\_01a\_1111, marrying copper and optical
  - Ghiasi\_01\_1111, compliance boards
- Product is released to the market, the connector exists

# QSFP28 SFF Status

- The 40Gb/s interface defined in IEEE STD 802.3ba cites the connector shall be the quad small form factor pluggable (QSFP+) with the mechanical mating interface defined by SFF-8436 Rev 3.4 and illustrated in Figure 85–20 and Figure 85-21.
- The SFF is in the process of defining a new specification for the QSFP28, and is not finalized yet (SFF 8665).
- The new QSFP28 SFF will have the same mechanical mating interface as SFF-8436.

# An MDI Baseline Proposal

- Propose to adopt QSFP28 as an MDI for 802.3bj
  - Leverage Clause 85.11.1.1 from IEEE STD 802.3ba as the mechanical mating interface and pin assignment:
    - “Connectors meeting the below requirements shall be used as the mechanical interface between the PMD and the cable assembly. The plug connector shall be used on the cable assembly and the receptacle on the PHY.  
The connector for each end of the cable assembly shall be the quad small form factor pluggable (QSFP28) with the mechanical mating interface defined by SFF-TBD and illustrated in Figure 85–20. The MDI connector shall be the quad small form factor pluggable (QSFP28) receptacle with the mechanical mating interface defined by SFF-TBD and illustrated in Figure 85–21. These connectors have contact assignments matching that in Table 85–13. The plug connectors on the receive lanes are AC coupled; the coupling capacitors are contained within the plug connectors as specified in 85.8.4.5.”
  - Provides backward mechanical and electrical compatibility.

# Questions?

Note: For background info see Tom Palkert's QSFP28 MDI presentation from Sept '11 IEEE meeting: [palkert\\_01a\\_0911](#)