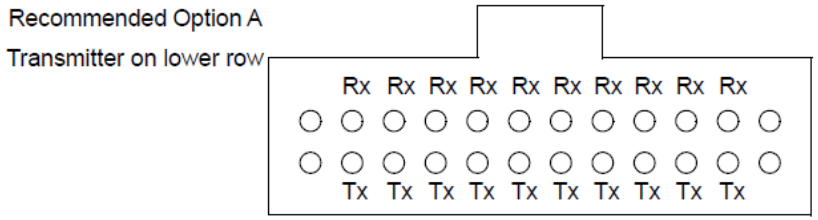
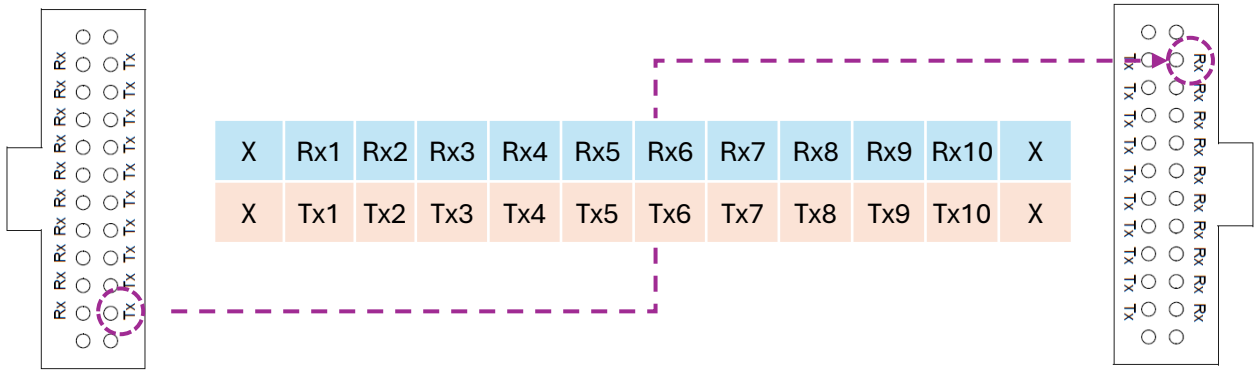
TR42.11 TIA-568.3-E Context

- Discussions are ongoing regarding the polarity of structured cabling applications using the 2-row MPO MDI
  - Currently 100GBASE-SR10 has 2-row MPO12 (MPO-24) as a recommended MDI option
  - There is an ongoing discussion regarding whether structured cabling for this MDI should support Option 1 or Option 2
  - As the SR10 spec did not originally assume breakout scenarios, no Tx/Rx channel numbers were assigned; therefore, both options should work

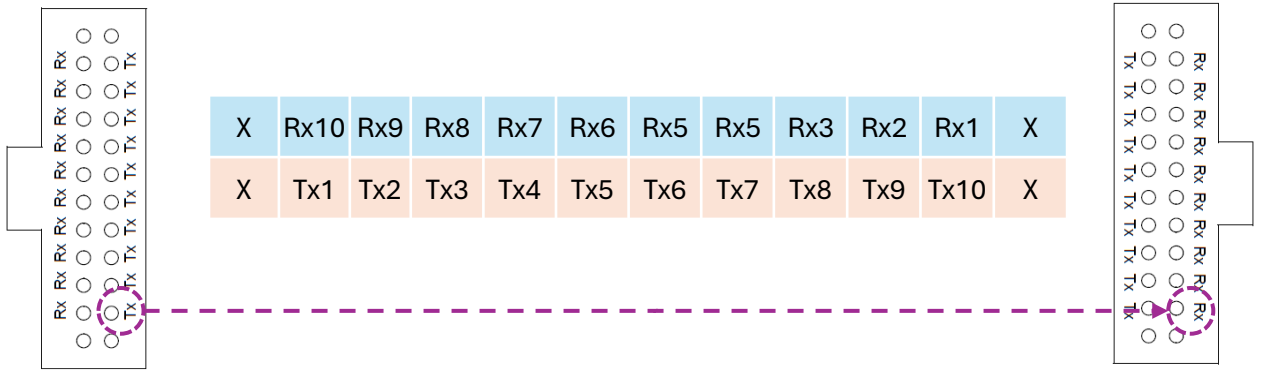


Option 1



X	Rx1	Rx2	Rx3	Rx4	Rx5	Rx6	Rx7	Rx8	Rx9	Rx10	X
X	Tx1	Tx2	Tx3	Tx4	Tx5	Tx6	Tx7	Tx8	Tx9	Tx10	X

Option 2



X	Rx10	Rx9	Rx8	Rx7	Rx6	Rx5	Rx5	Rx3	Rx2	Rx1	X
X	Tx1	Tx2	Tx3	Tx4	Tx5	Tx6	Tx7	Tx8	Tx9	Tx10	X

TR42.11 Request for Insights from IEEE 802.3 (1/2)

- For current applications such as SR10, would there be any preference for Option 1 or 2?
  - TIA-568.3 currently supports Option 2
  - The only other public reference identified is the Corning Applications Engineering Note designating channel numbers for MPO-24 , which aligns with Option 1. It illustrates breakout scenarios
    - Reference link: AEN150.pdf

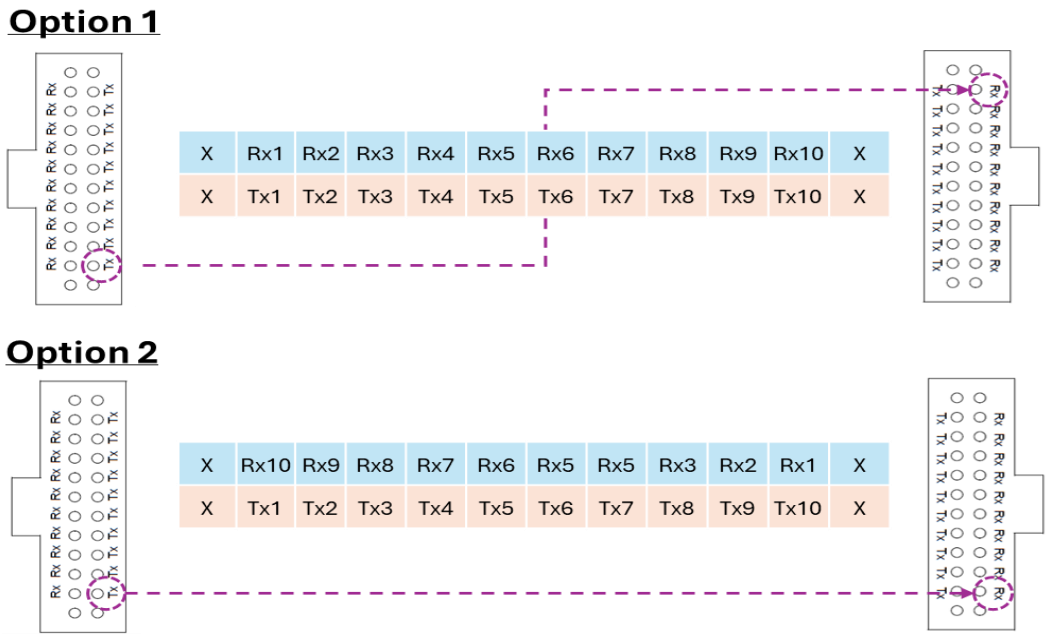
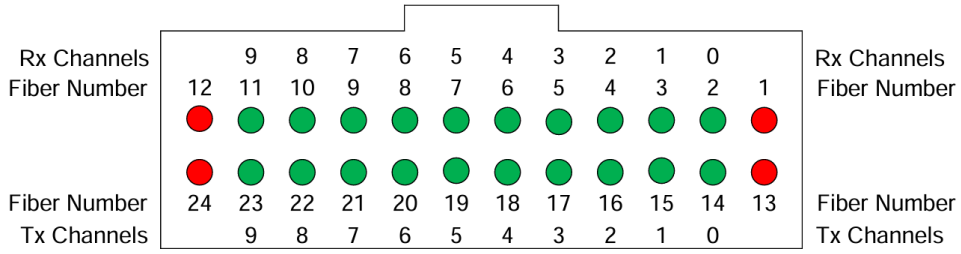
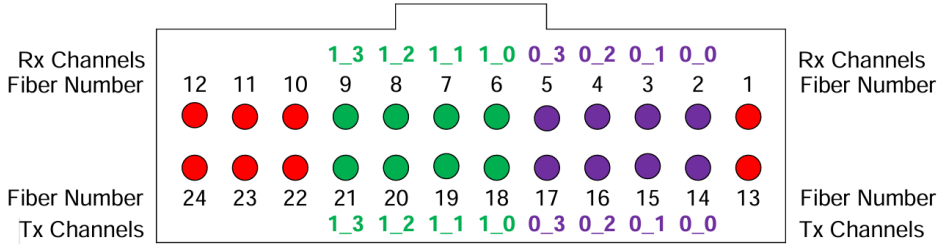


Figure 1: Parallel Fiber (20-fiber) Optic Transmission



Fiber Numbers and Channel Assignments when looking into MTP Receptacle
NOTE: Fibers 1, 12, 13, 24 are not used.

Figure 2: CPAK 100G Configured for 40G-SR4 Breakouts

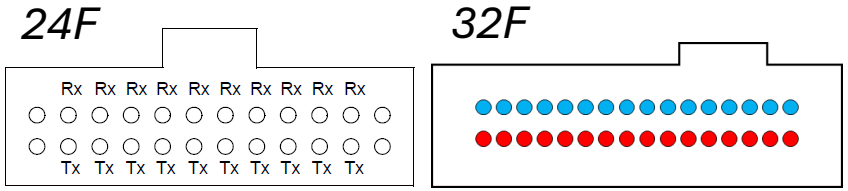


Fiber Numbers and Channel Assignments when looking into MTP Receptacle
NOTE: Fibers 1, 10, 11, 12, 13, 22, 23, 24 are not used.

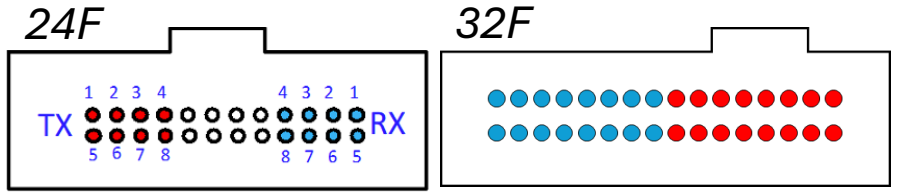
TR42.11 Request for Insights from IEEE 802.3 (2/2)

- Which 2-row MPO variants should be considered for future Ethernet applications?
  - TR42.11 seeks IEEE's input on which 2-row MPO variants should be considered for future Ethernet applications, such as MPO-32 for potential DR16 optics
  - Guidance is requested on whether future designs will separate Tx and Rx channels by row (Top/Bottom) or by side (Left/Right) and where each Tx and Rx channel will be placed (i.e. Tx1 and Rx1, Tx2 and Rx2…).

Tx/Rx by row



Tx/Rx by side



**QSFP-DD MSA spec states that 2-row MPO12 MDI is only for breakout applications and is not intended for structured cabling*

- Ongoing Liaison
  - TR42.11 looks forward to receiving these insights from IEEE and will continue liaison reporting as alternate mapping options are discussed
  - We also wish to coordinate a joint ad-hoc study call to discuss the polarity of structured cabling applications using the 2-row MPO MDI