SOLID OPTICS

Navigating the Evolving Landscape of Optical Transceiver Formats and Connectors

ESNOG30

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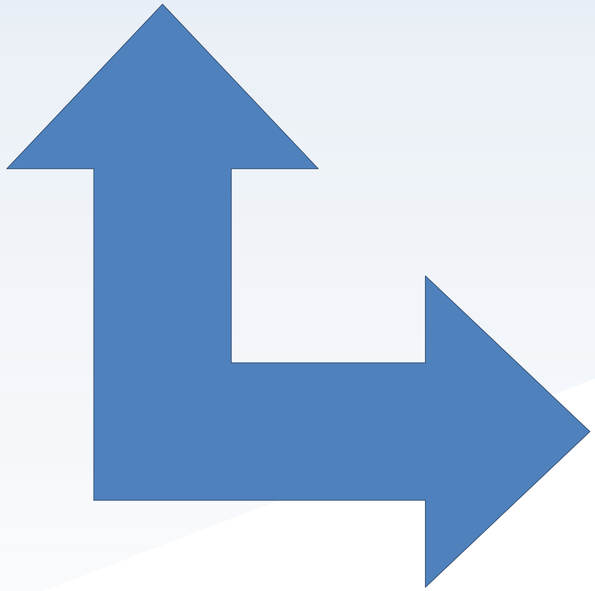
Amedeo Beck Peccoz

Senior Account Manager – Alturna Networks

TRANSCEIVERS



Beyond 100G

CONNECTORS

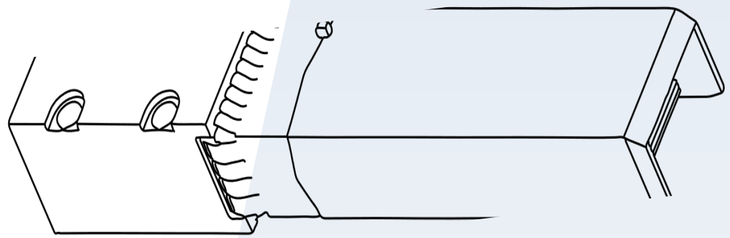
EMERGING TRANSCEIVERS FORM FACTORS

SFP

- SFP112
- SFP-DD/SFP-DD112

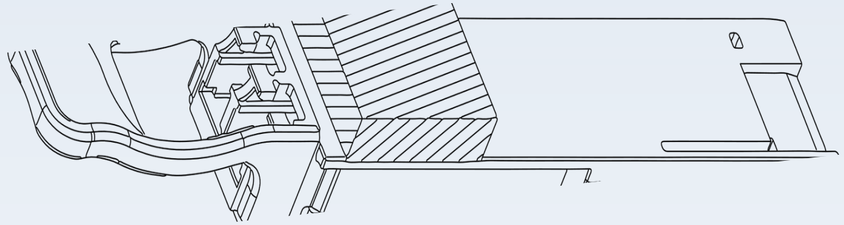
OSFP

- OSFP112
- OSFP-XD



QSFP

- QSFP112
- QSFP-DD800



STANDARS ARE GREAT!

Industry sourced

- GBIC
- Xenpak
- X2
- XFP
- CPAK

MSA (Multi Source Agreement)

- SFP Small Form-factor Pluggable
- QSFP Quad SFP
- OSFP Octal SFP

SFP112

- Support up to 100G on a single electrical lane
- PAM4 modulation
- Features the same electrical pads as SFP28
- CMIS management interface
- Host port is compatible with SFP/SFP+/SFP28
- Ideal for 1RU devices, providing high-density 100G capacities in a compact form factor
- Perfectly suited for Top Of the Rack (TOR) connectivity towards servers, supporting breakout from 400G or 800G to multiple SFP112s (100G)
- **Utilizes duplex LC connectors**

SFP-DD/SFP-DD112

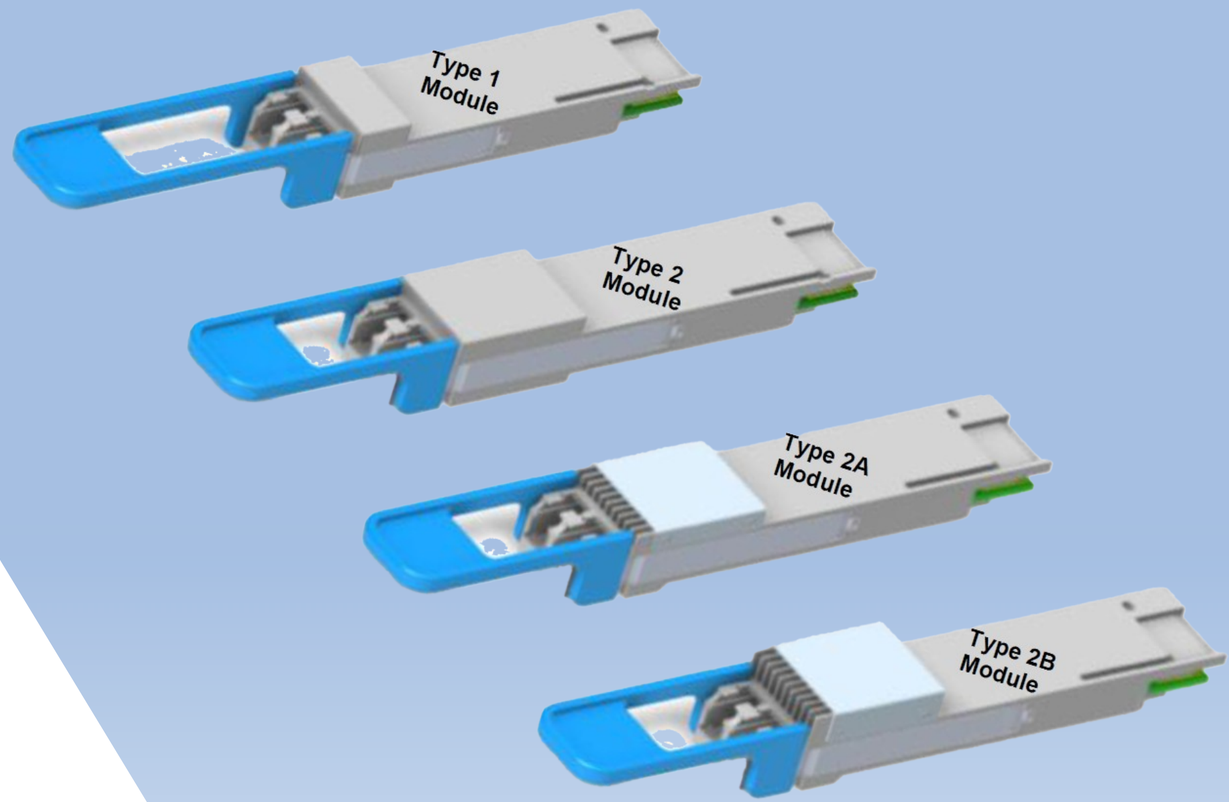
- Supports up to 200G data transmission using two 112Gpbs electrical lanes
- PAM4 modulation
- Double the electrical pads
- SFP-DD uses SFP-DD MIS, while SFP-DD112 uses CMIS management interface
- Host port is compatible with SFP/SFP+/SFP28/SFP112
- **Supports duplex LC, MPO-12, dual-SN, and dual-MDC connector types**
- Operates at 5W power consumption, with potential for higher

QSFP112

- Supports up to 400G data transmission using four 112Gpbs electrical lanes
- PAM4 modulation
- Cage connector similar to QSFP28
- CMIS management interface
- Host port is compatible with QSFP+/QSFP28
- **Supports both duplex LC and MPO-12 connector types**
- Operates at 10W power consumption, with potential for higher power

QSFP112

- Type 1 and 2 form factors used for normal power consumption transceiver types
- Type 2A and 2B form factors used for high power consumption transceiver types



QSFP-DD112

- Supports up to 800G data transmission using eight 112Gpbs electrical lanes
- PAM4 modulation
- Cage connector similar to QSFP-DD
- CMIS management interface
- Host port is compatible with QSFP+/QSFP28/QSFP112/QSFP-DD
- **Supports a wide range of connector types**
- Operates at 14W power consumption, with potential for higher power

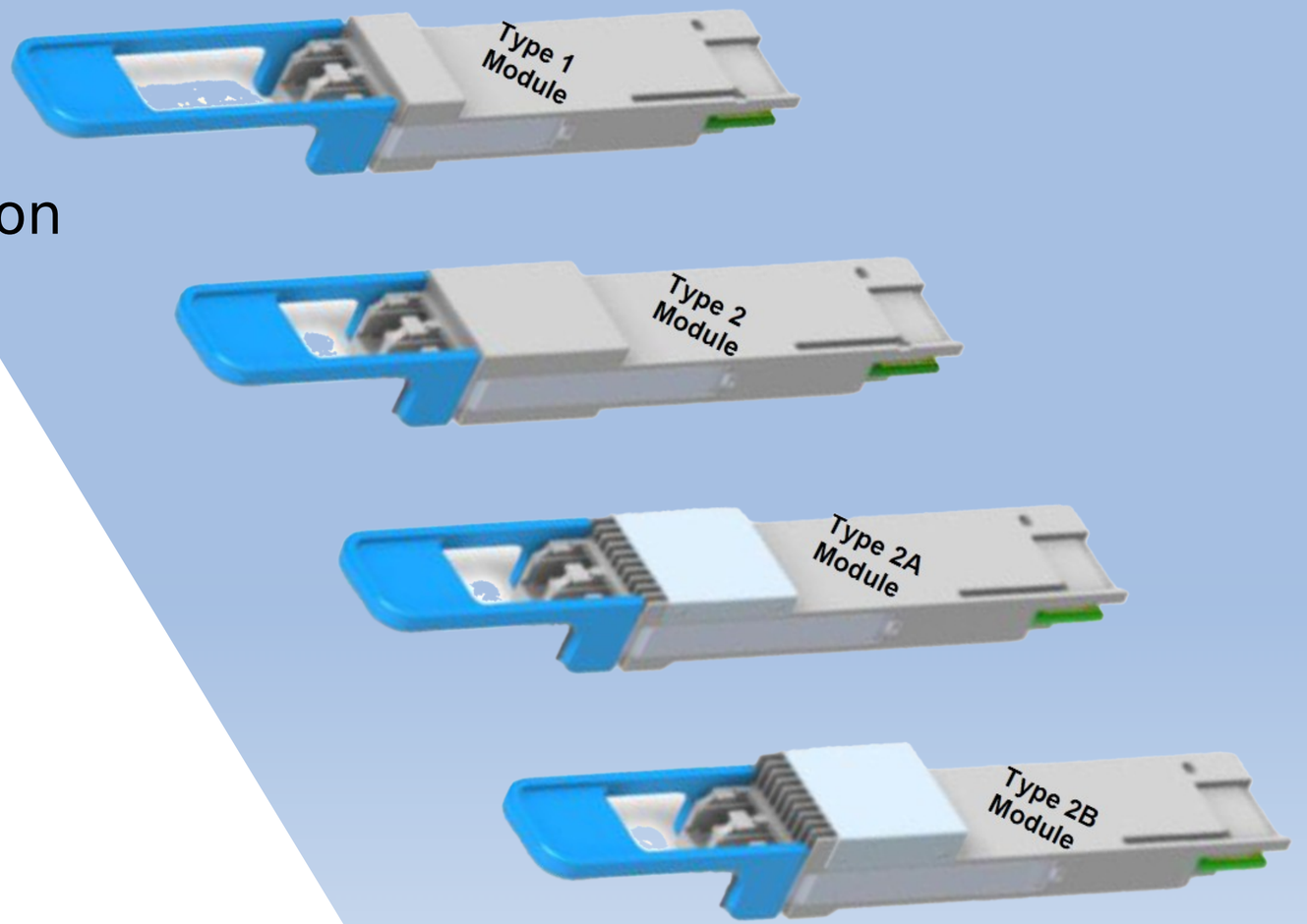
QSFP-DD112

- Type 1 and 2 form factors

used for normal power consumption transceiver types

- Type 2A and 2B form factors

used for high power consumption transceiver types



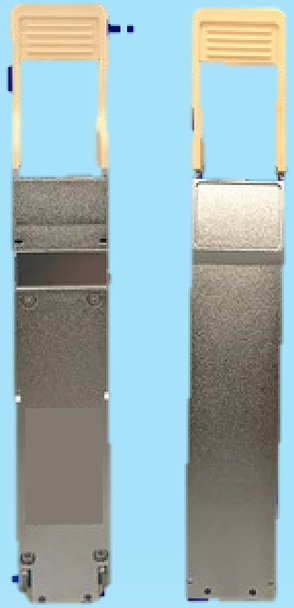
OSFP112

- Supports up to 400G data transmission using four 112Gpbs electrical lanes
- PAM4 modulation
- Cage connector similar to 800G OSFP
- CMIS management interface
- The host port is not backward compatible with the 8x50G 400G OSFP
- **Supports a wide range of connector types**
- The Standard OSFP Heat Sink (Finned) and RHS (flat top) versions.

OSFP112

MPO-12/APC

FINNED

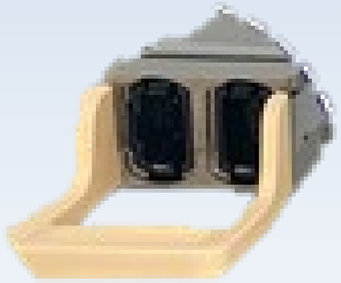


FLAT TOP - RHS

800G OSFP / OSFP-XD

- Supports up to 800G data transmission using eight 112Gpbs electrical lanes
- PAM4 modulation
- 800G Cage connector similar to the 400G OSFP112
- CMIS management interface
- The host port is not backward compatible with the 8x50G 400G OSFP, but is backward compatible with OSFP112
- **Compatible with various connector types**

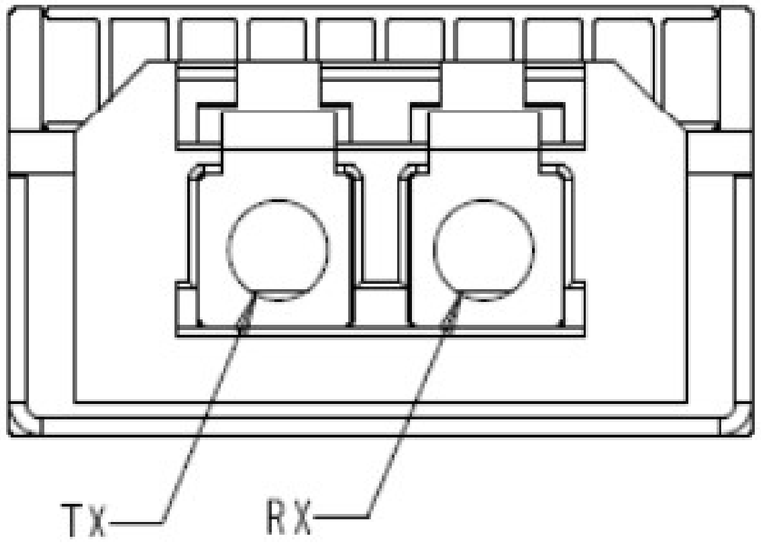
800G OSFP / OSFP-XD



MPO-12/APC

FINNED

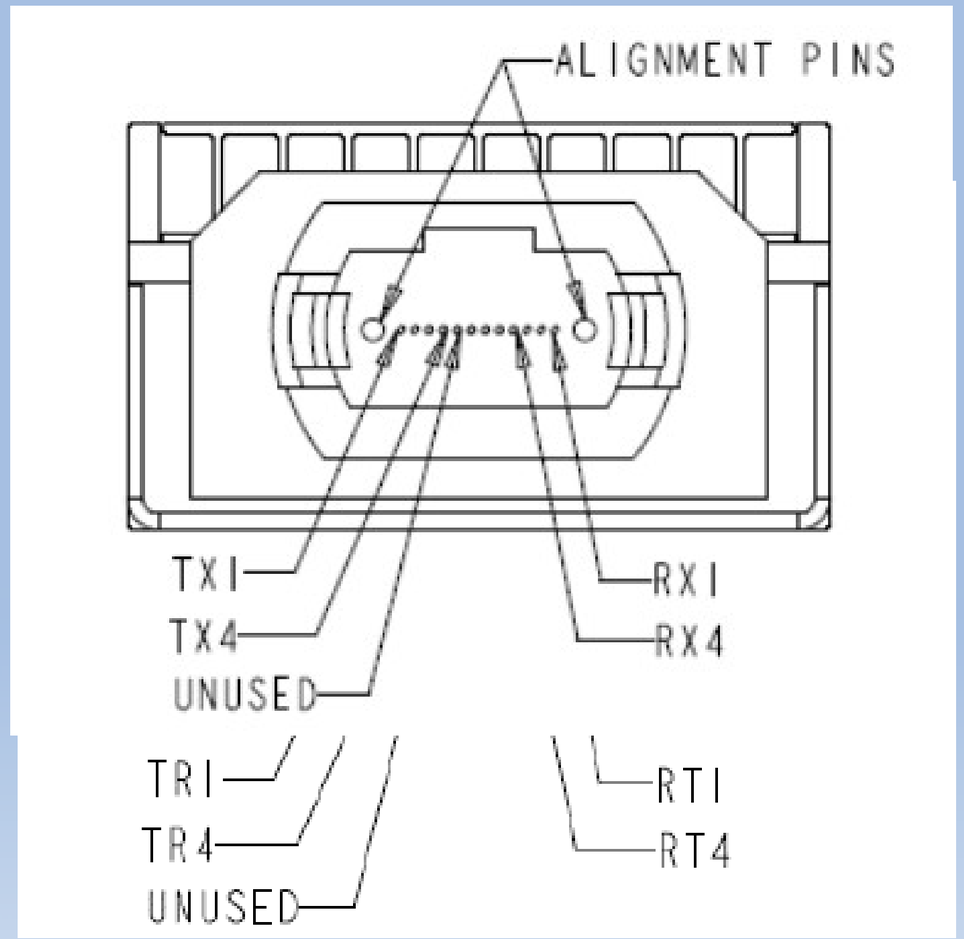
Duplex LC Optical Interface



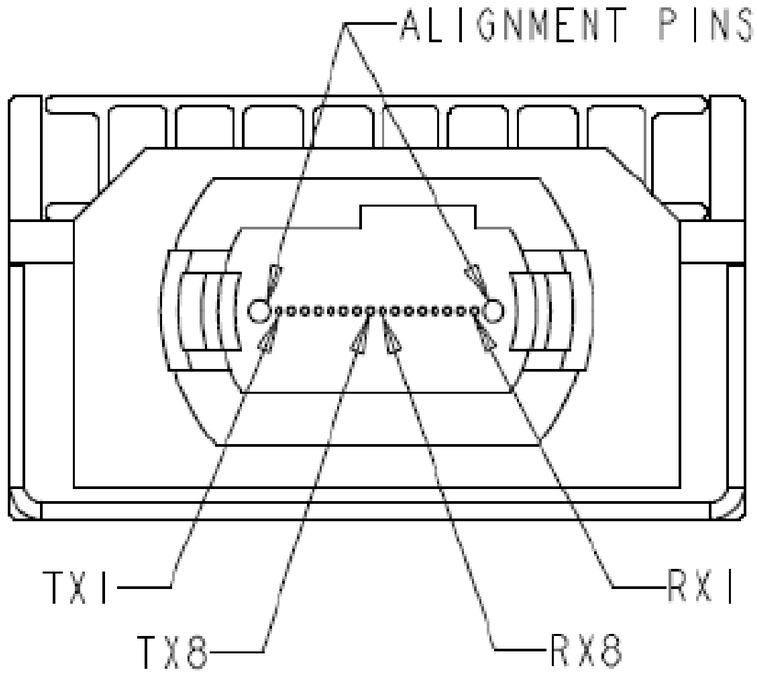
- Duplex LC connector
- 2 fibers
- TX/RX model

MPO-12 Optical Interface

- MPO-12 connector
- 12 fibers – 4 unused
- TX/RX or **TR model**



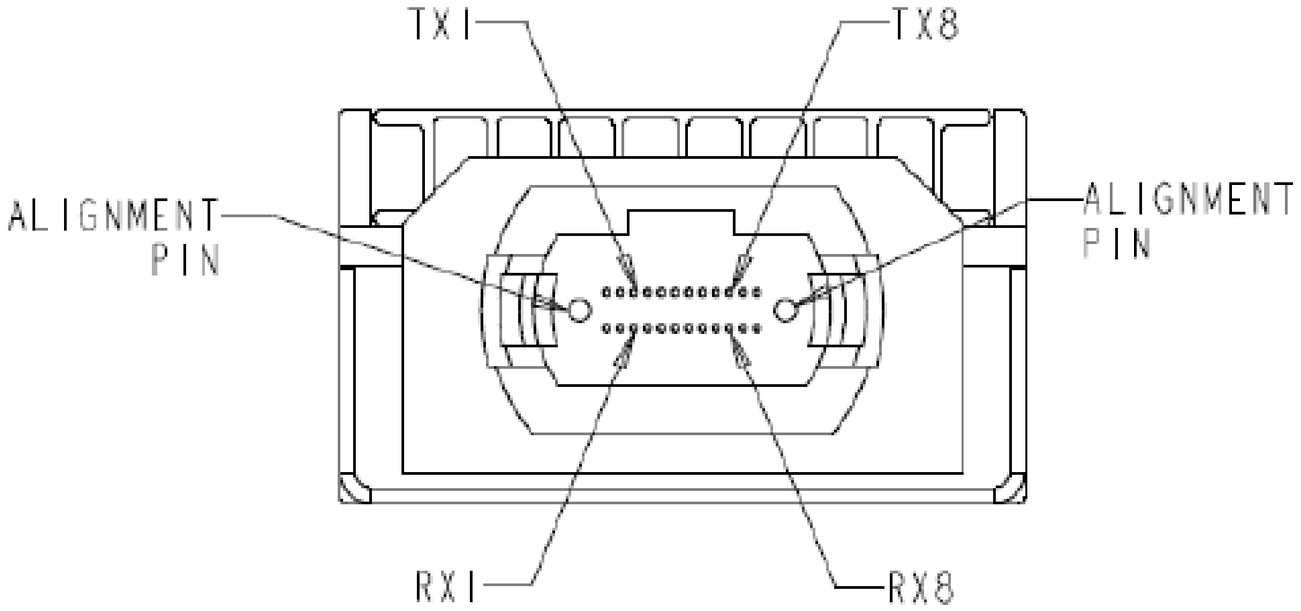
MPO-16 Optical Interface



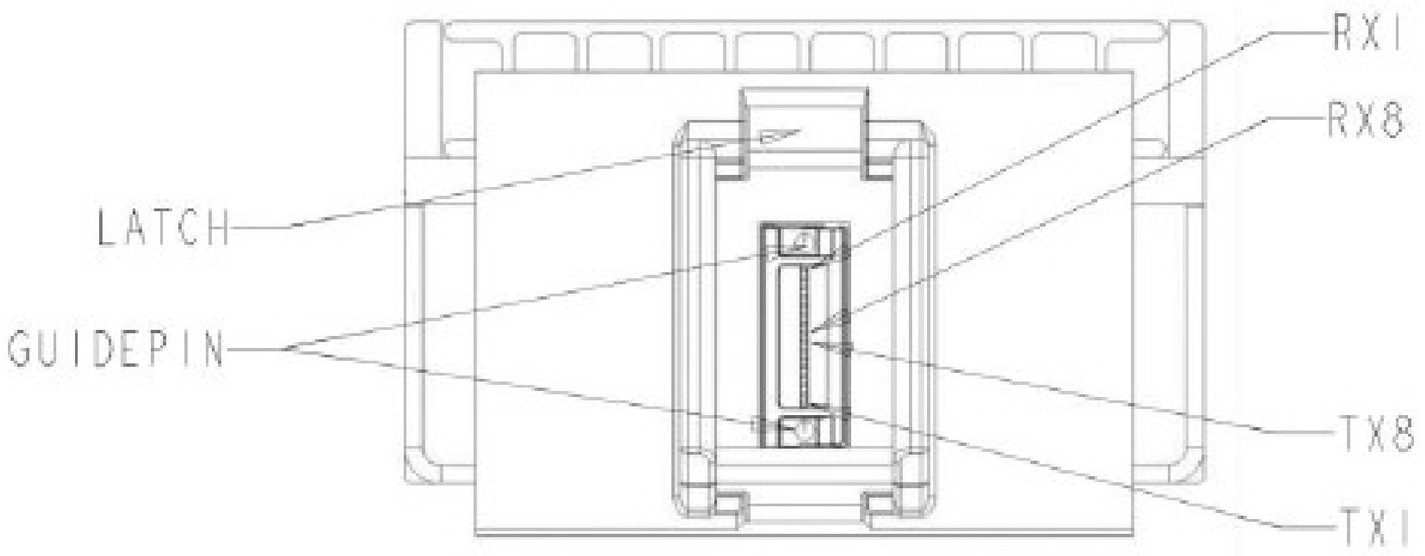
- MPO-16 connector
- 16 fibers
- TX/RX model

MPO-12 Two Row Optical Interface

- MPO-12 two row connector
- 24 fibers – 8 unused
- TX/RX model



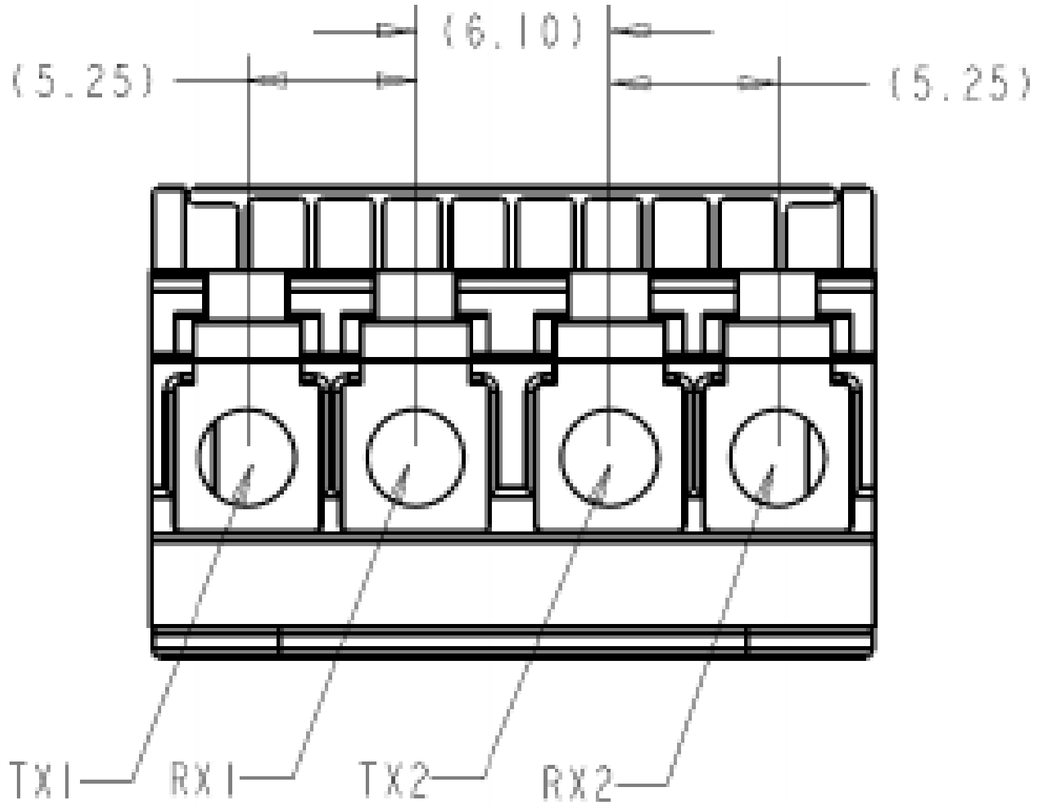
MXC Optical Interface



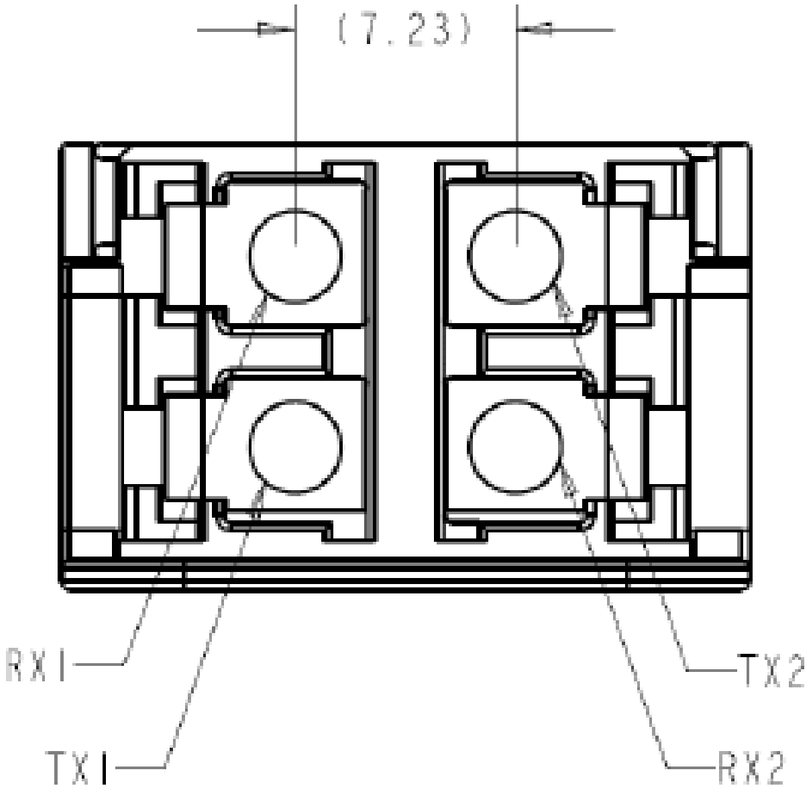
- MXC connector
- 16 fibers
- TX/RX model

Dual Mini-LC Optical Interface

- Dual Mini-LC connector
- 4 fibers
- TX/RX model



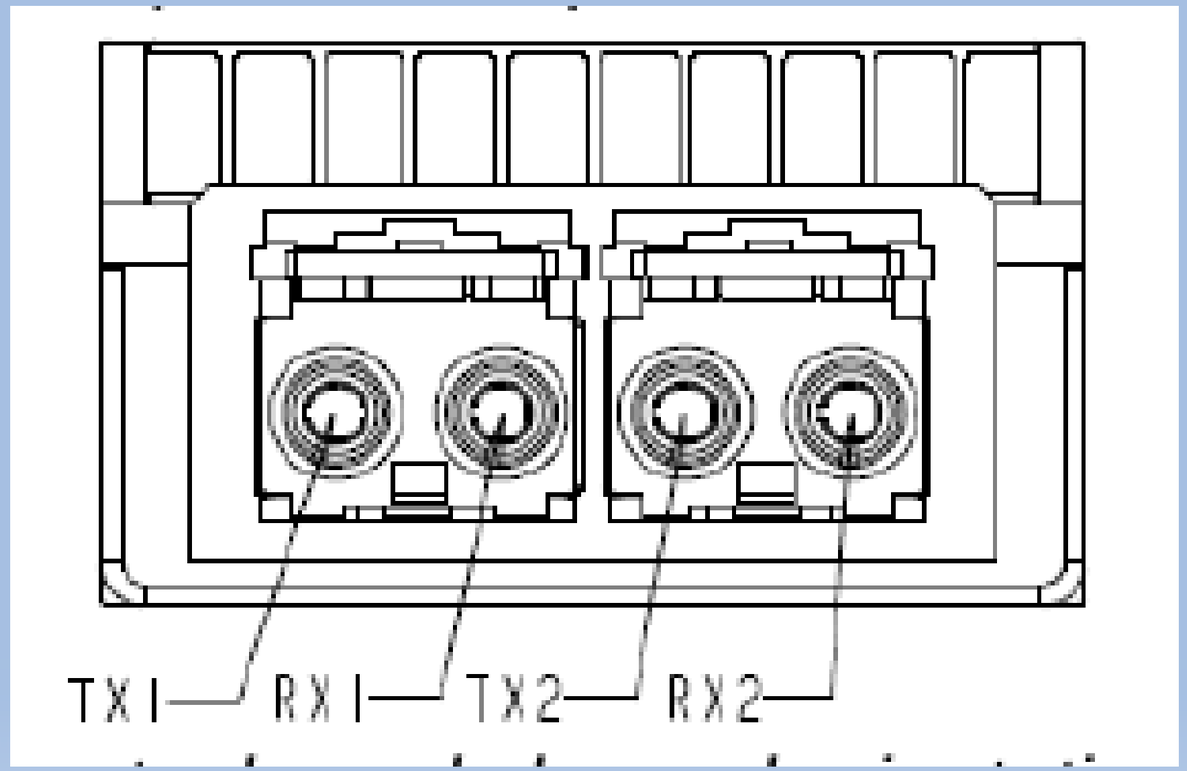
Dual Duplex LC Optical Interface



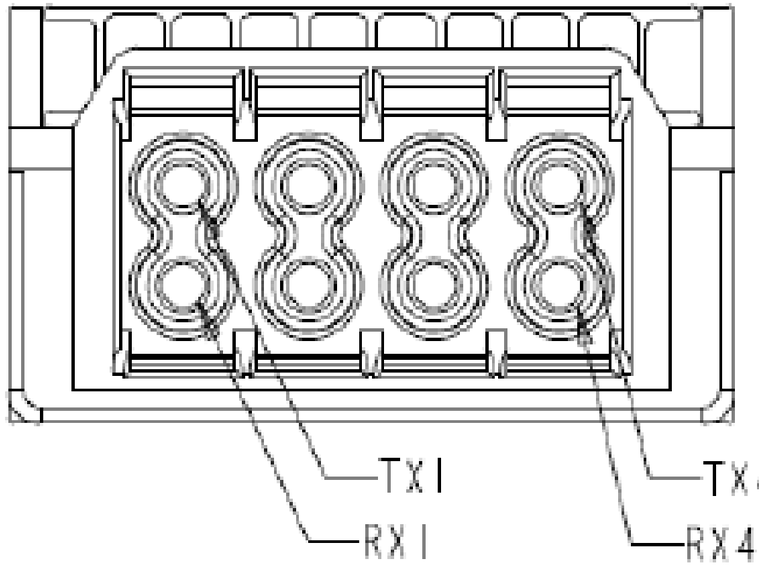
- Two Duplex LC connectors
- 2 x 2 fibers
- TX/RX model

Dual CS® Optical Interface

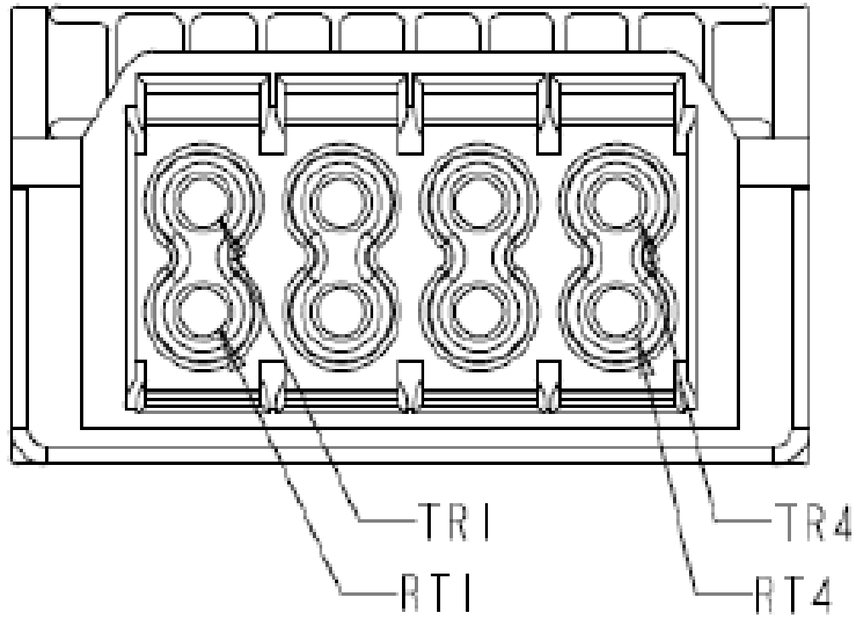
- Dual CS connector
- 4 fibers
- TX/RX model



Quad MDC Optical Interface

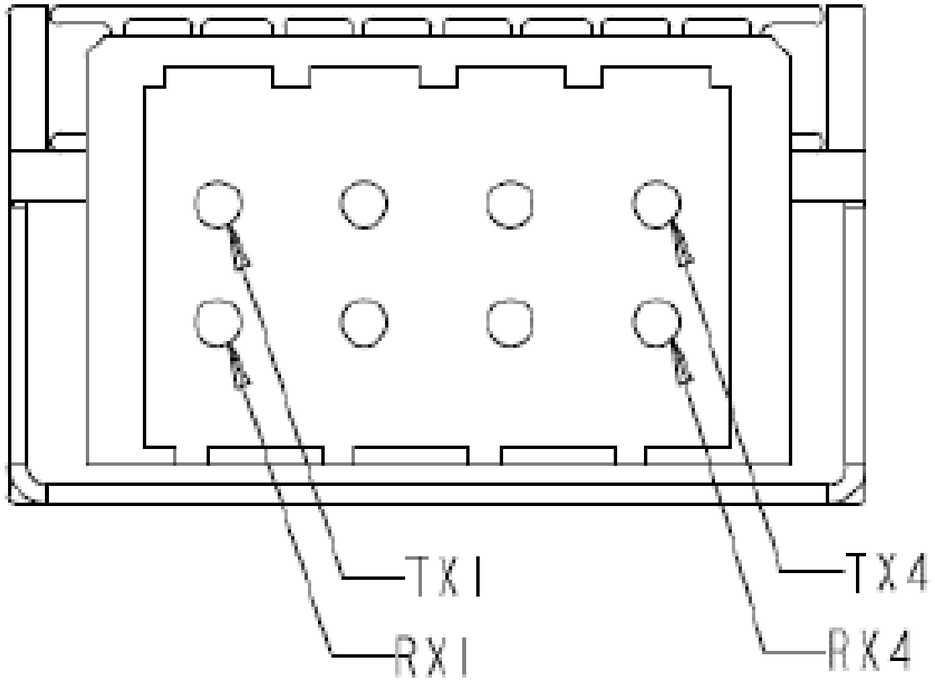


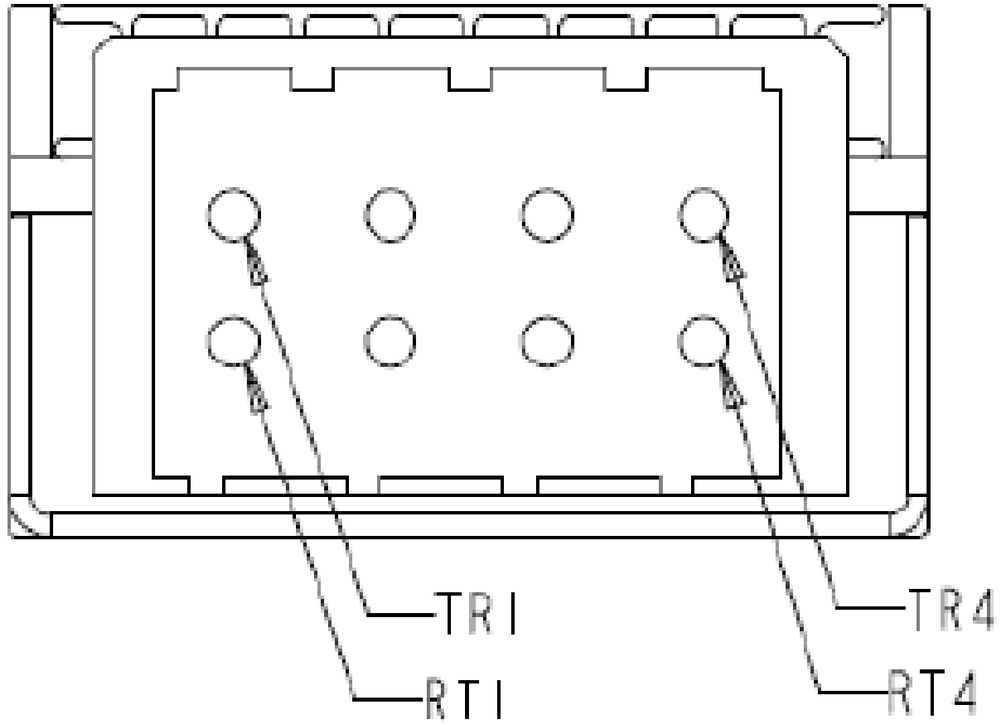
Channels	Tx1	Tx2	Tx3	Tx4
	Rx1	Rx2	Rx3	Rx4



- Quad MDC connector
- 8 fibers
- TX/RX or **TR model**

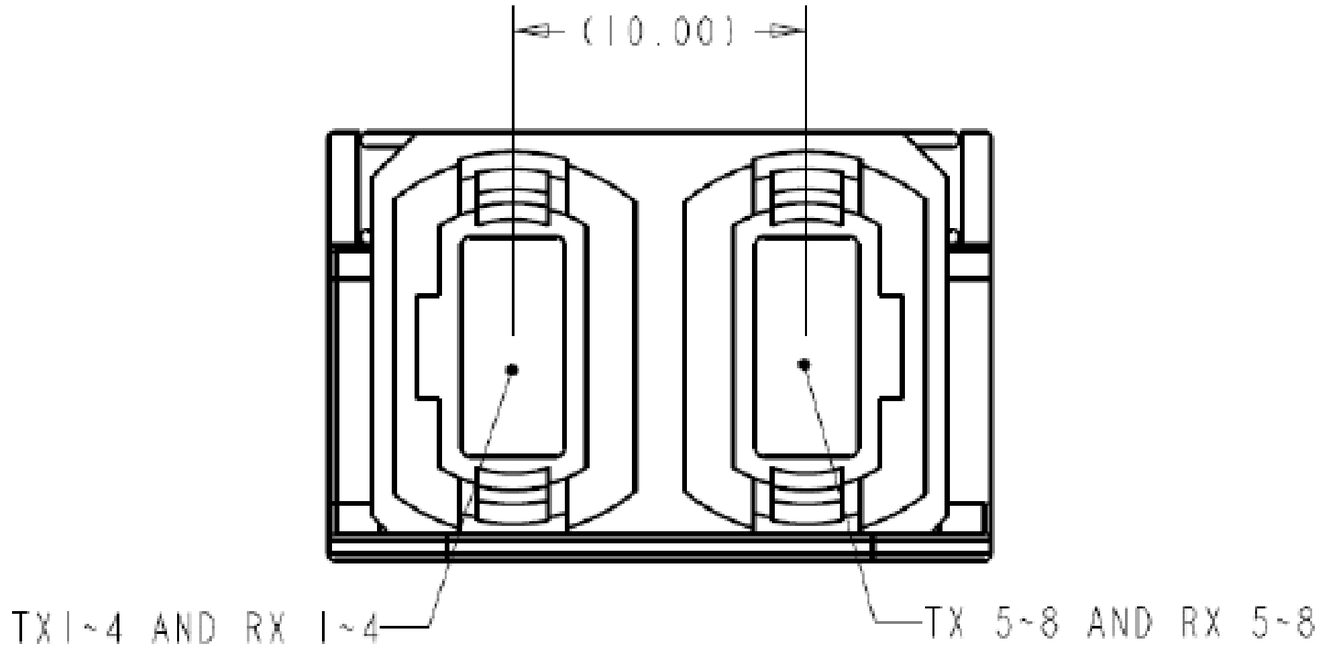
Quad SN® Optical Interface





- Quad SN connector
- 8 fibers
- TX/RX or **TR model**

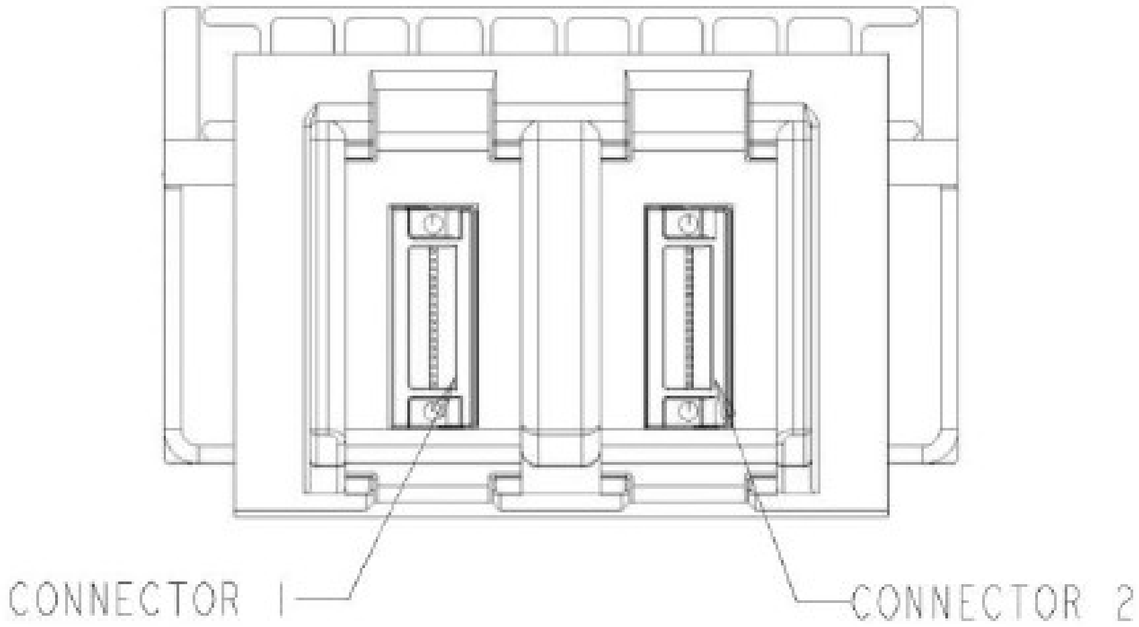
Dual MPO Optical Interface



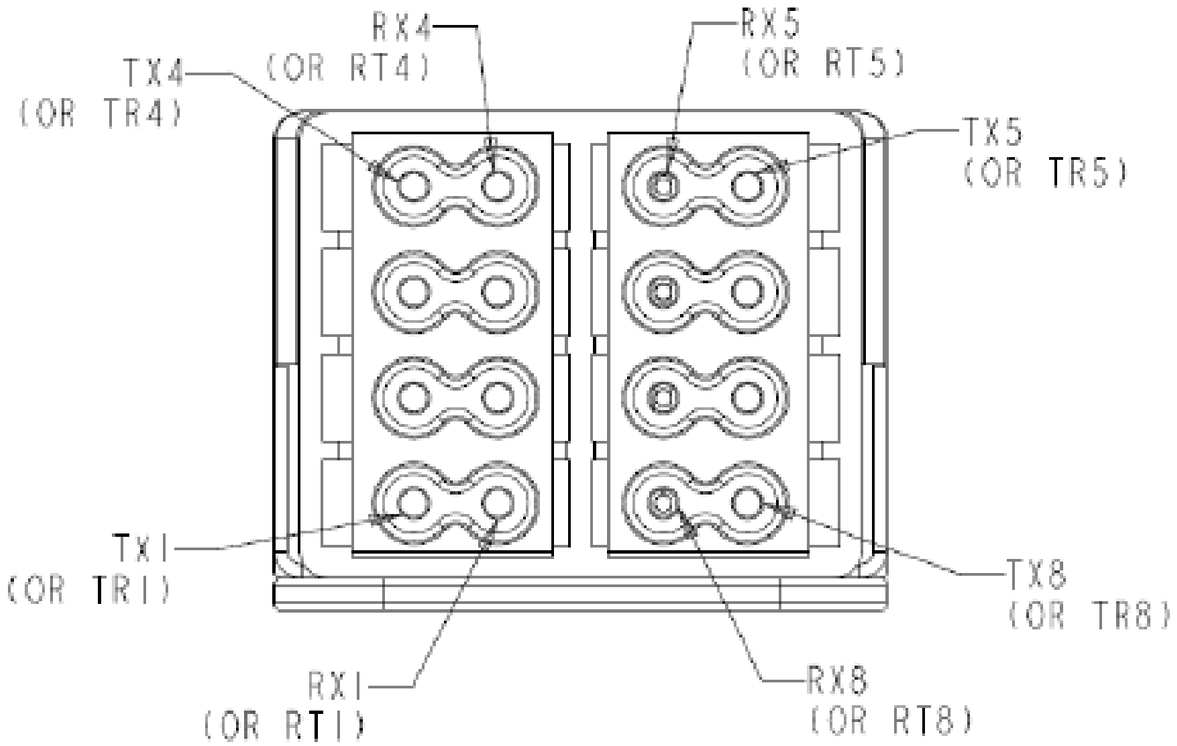
- Two MPO-12 connectors
- 12 + 12 fibers – 4 + 4 unused
- TX/RX model

Dual MXC Optical Interface

- Dual MXC connector
- 32 fibers
- TX/RX model



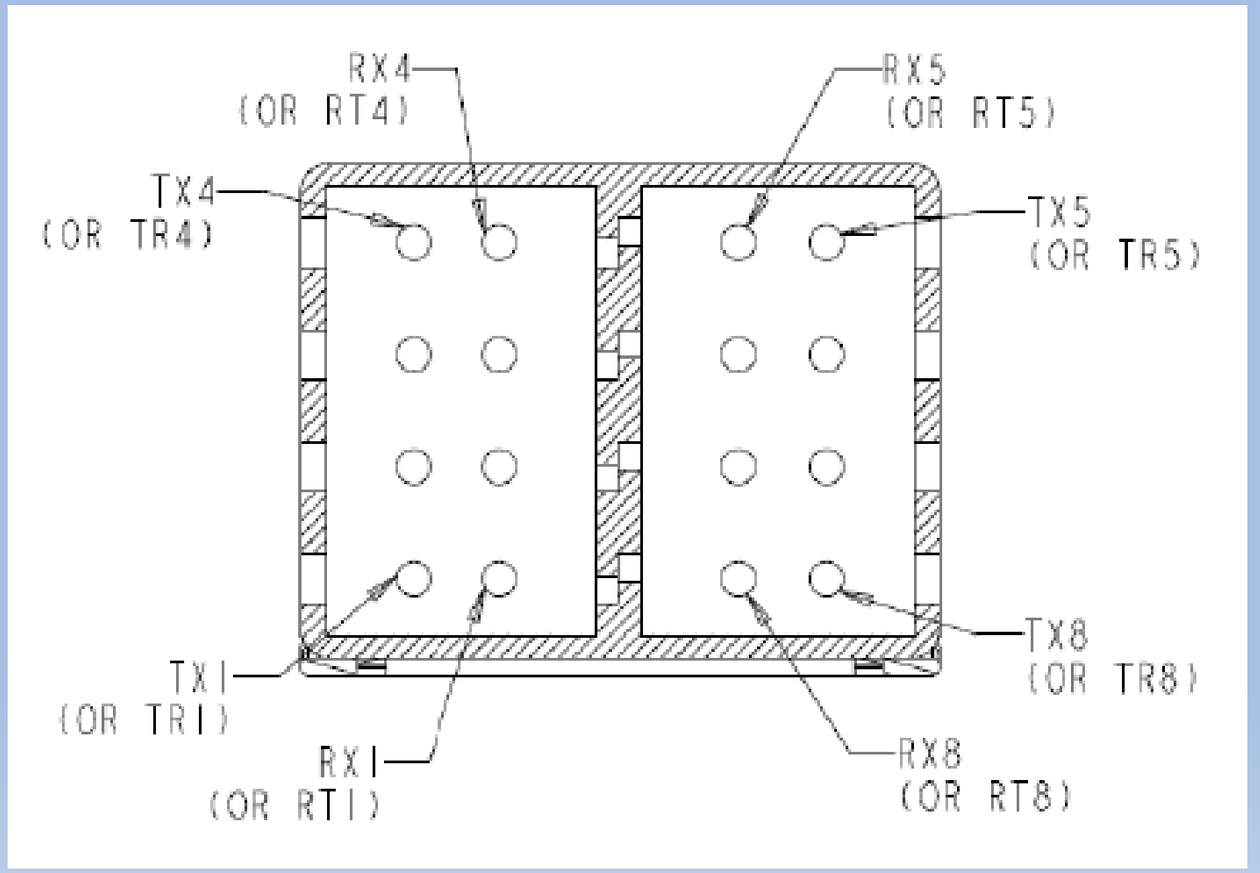
8 x MDC Optical Interface



- Two Quad MDC connectors
- 2 x 8 fibers
- TX/RX model

8 x SN® Optical Interface

- 2 x Quad SN connector
- 2 x 8 fibers
- TX/RX model



THANK YOU!

Amedeo Beck Peccoz

amedeo@alturnanetworks.com

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