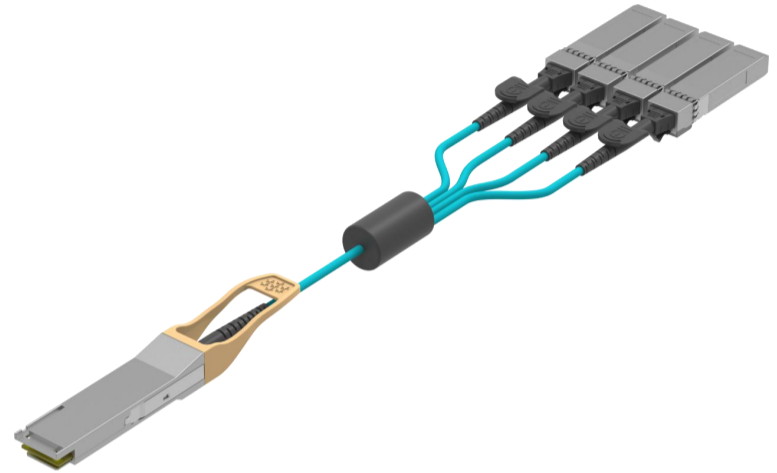


100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cables

Features

- Hot-pluggable QSFP28 and 4x SFP28 form-factor connectors
- 4 channels full-duplex active optical cables
- 4x 850nm VCSEL array and PIN photo-detector array
- Internal CDR circuits on both receiver and transmitter channels
- Support CDR bypass
- Compliant with QSFP28 MSA and IEEE 802.3bm 100GBASE-SR4
- Compliant with SFP28 MSA and IEEE 802.3by 25GBASE-SR
- Data rate up to 103.1Gbps
- Power consumption < 2.5W (100G QSFP28), < 1W (25G SFP28)
- Length up to 70m (OM3) or 100m (OM4) over MMF
- Operating case temperature range from 0°C to 70°C
- 3.3V power supply voltage
- RoHS compliant (lead free)



Applications

- 40 Gigabit Ethernet
- 25GBASE-SR Ethernet
- Fibre Channel Applications
- InfiniBand QDR, SDR, DDR
- High-performance computing clusters
- Servers, switches, storage and host card adapters

Description

FiberStamp QSFP28 to 4x SFP28 breakout Active Optical Cable offers IT professionals a cost-effective interconnect solution for merging 100G QSFP28 and 25G SFP28 enabled host adapters, switches and servers.

For typical applications, users can install this splitter Active Optical cable between an available QSFP28 port on their 100Gbps rated switch and feed up to four upstream 25GbE-SFP28 enabled switches. Each QSFP28-SFP28 splitter Active Optical cable features a single QSFP28 connector (SFF-8436) rated for 100Gbps on one end and (4) SFP28 connectors (SFF-8431), each rated for 25Gb/s, on the other.



QSFP28 interface Specifications

| Parameter | Description |
|-----------------------------|---------------------------|
| Module Form Factor | QSFP28 (Supports SFF8436) |
| Data Rate, Each lane | 25.78125Gbps |
| BER | <10 ⁻¹² |
| Operating Case Temperature | 0 to + 70°C |
| Storage Temperature | -20 to + 85°C |
| Supply Voltage | 3.3V |
| Supply Current | Typical 560mA |
| Power Dissipation | <2.5W, Level 2 |
| Management Interface Serial | I2C (Supports SFF8436) |

Optical and Electrical Characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

| Parameter | Symbol | Min | Typical | Max | Unit | Notes |
|--|--------------------|---|---------|------|------|--------------------------------|
| Transmitter | | | | | | |
| Centre Wavelength | λ_c | 840 | 850 | 860 | nm | - |
| RMS spectral width | $\Delta\lambda$ | - | - | 0.60 | nm | - |
| Average launch power, each lane | P _{out} | -8.4 | - | 2.4 | dBm | - |
| Optical Modulation Amplitude (OMA),each lane | OMA | -6.4 | | 3 | dBm | - |
| Transmitter and dispersion eye closure(TDEC),each lane | TDEC | | | 4.3 | dB | |
| Extinction Ratio | ER | 3 | - | - | dB | - |
| Average launch power of OFF transmitter, each lane | | | | -30 | dBm | - |
| Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3 | | SPECIFICATION VALUES 0.3,0.38,0.45,0.35,0.41,0.5 | | | | Hit Ratio = 5x10 ⁻⁵ |
| Differential data input swing | V _{IN,PP} | 40 | | 1000 | mV | |
| Receiver | | | | | | |
| Centre Wavelength | λ_c | 840 | 850 | 860 | nm | - |
| Stressed receiver sensitivity in OMA, each lane | | | | -5.2 | dBm | 1 |
| Maximum Average power at receiver input, each lane | | | | 2.4 | dBm | - |



| Parameter | Symbol | Min | Typical | Max | Unit | Notes |
|---|--------|-------|---------|------|------|-------|
| Minimum Average power at receiver , each lane | | -10.3 | | | dBm | |
| Receiver Reflectance | | | | -12 | dB | - |
| LOS Assert | | -30 | | | dBm | - |
| LOS Deassert | | | | -7.5 | dBm | - |
| LOS Hysteresis | | 0.5 | | | dB | - |
| Receive Eye Amplitude | | 300 | | 800 | mV | |
| Receive Eye Width | | 25 | | | Ps | |
| Receive Eye Height | | 250 | | | mV | |

Notes:

1. Measured with conformance test signal at TP3 for BER = 10e-12

SFP28 interface Specifications

| Parameter | Description |
|-----------------------------|--|
| Module Form Factor | SFP28 (Supports SFF8431/SFF8432/SFF8472) |
| Channel Data Rate | 25.78125Gbps |
| BER | <10 ⁻¹² |
| Operating Case Temperature | 0 to + 70°C |
| Storage Temperature | -20 to + 85°C |
| Supply Voltage | 3.3V |
| Supply current | Typical 180mA |
| Power Dissipation | <1W,Level I |
| Management Interface Serial | I2C (Supports SFF8472) |

Optical and Electrical Characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

| Parameter | Symbol | Min. | Typical | Max | Unit | Notes |
|--|-------------|---|---------|------|--------------------------------|-------|
| Transmitter | | | | | | |
| Center Wavelength | λ_t | 840 | 850 | 860 | nm | |
| RMS spectral width | Pm | - | - | 0.6 | nm | |
| Average Optical Power | Pavg | -8.4 | - | 2.4 | dBm | |
| Optical Power OMA | POMA | -6.4 | | 3 | dBm | |
| Transmitter and dispersion eye closure(TDEC),each lane | TDEC | | | 4.3 | dB | |
| Extinction Ratio | ER | 2 | - | - | dB | 3 |
| Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3 | | SPECIFICATION VALUES 0.3,0.38,0.45,0.35,0.41,0.5 | | | Hit Ratio = 5x10 ⁻⁵ | |
| Differential data input swing | VIN,PP | 40 | | 1000 | mV | |

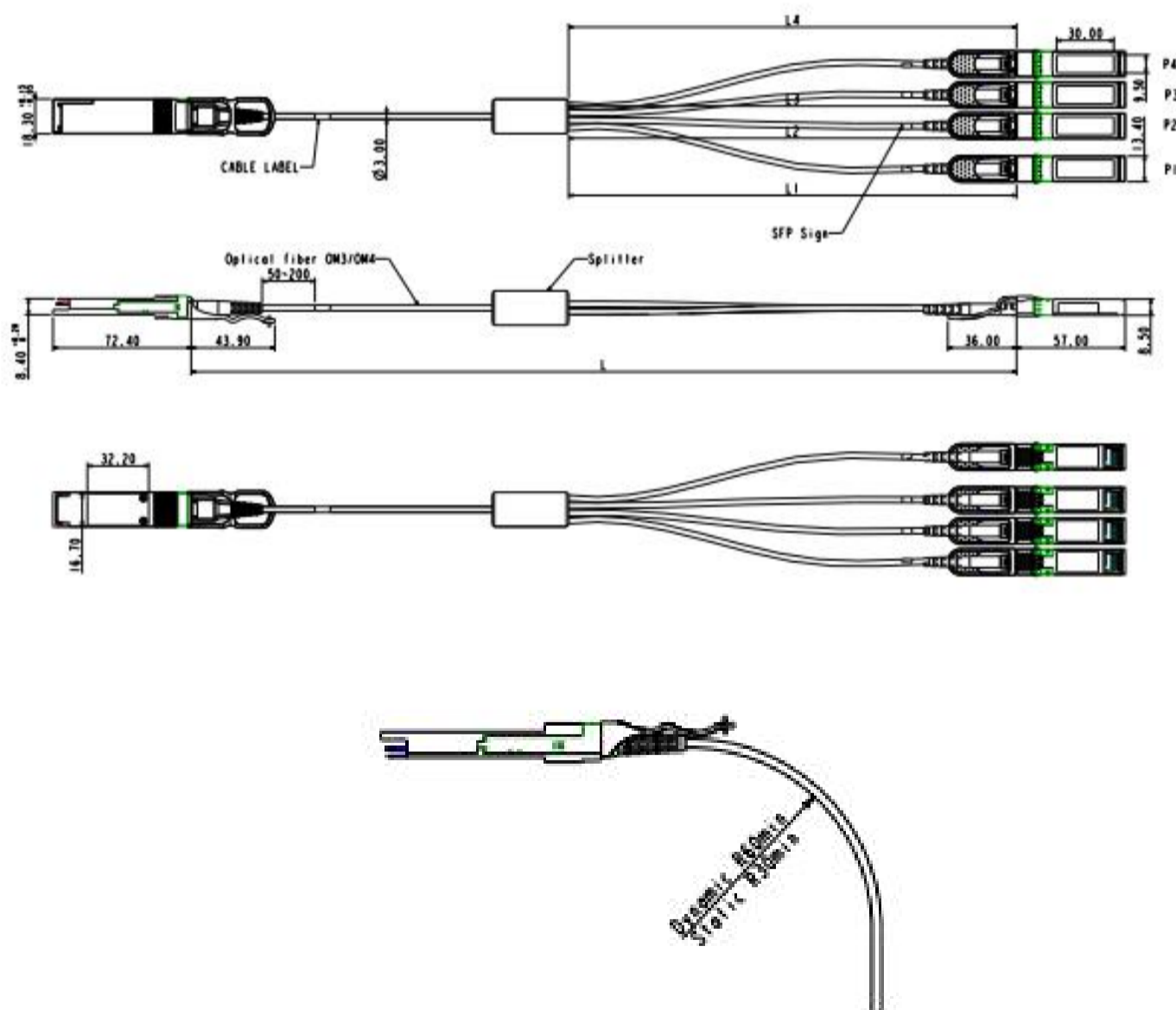


| Parameter | Symbol | Min. | Typical | Max | Unit | Notes |
|--|-------------|-------|---------|------|------|-------|
| Receiver | | | | | | |
| Center Wavelength | λ_r | 840 | 850 | 860 | nm | |
| Stressed receiver sensitivity in OMA, each lane | | | | -5.2 | dBm | |
| Maximum Average power at receiver input, each lane | | | | 2.4 | dBm | |
| Minimum Average power at receiver , each lane | | -10.3 | | | dBm | |
| Receiver Reflectance | | - | - | -12 | dB | |
| LOS De-Assert | LOSD | | | -7.5 | dBm | |
| LOS Assert | LOSA | -30 | | | dBm | |
| LOS Hysteresis | | 0.5 | | | dB | |
| Receive Eye Amplitude | | 500 | | 1300 | mV | |
| Receive Eye Width | | 25 | | | Ps | |
| Receive Eye Height | | 250 | | | mV | |

Notes:

1. Measured with conformance test signal at TP3 for BER = 10e-12

Mechanical Specifications



Ordering information

| Part Number | Product Description |
|----------------|--|
| FSB4-100G-001M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 1-Meter |
| FSB4-100G-002M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 2-Meter |
| FSB4-100G-003M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 3-Meter |
| FSB4-100G-004M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 4-Meter |
| FSB4-100G-005M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 5-Meter |
| FSB4-100G-006M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 6-Meter |
| FSB4-100G-007M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 7-Meter |
| FSB4-100G-008M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 8-Meter |
| FSB4-100G-009M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 9-Meter |
| FSB4-100G-010M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 10-Meter |
| ... | ... |
| FSB4-100G-100M | 100G QSFP28 to 4x 25G SFP28 Breakout Active Optical Cable, 100-Meter |

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by FiberStamp before they become applicable to any particular order or contract. In accordance with the FiberStamp policy of continuous improvement specifications may change without notice.

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