| TITLE<br>1.6T OSFP Active Electrical Cable - PAM4 | DOC No. RFD-20260115001-002 | |
|---|---|---|
| | REVISION：01 | AUTHORIZED BY：Hawk Rong |
| | DATE：2026.01.15 | CLASSIFICATION：Active Electrical Cable |

## 1. Product Features

- Compliant with IEEE 802.3dj
- Compliant to OSFP MSA Rev 2.0
- Compliant with CMIS 5.0
- Transmission data rate up to PAM4 212.5Gbps per channel
- Single +3.3V power supply
- BER (Pre-FEC) <1E-8
- BER (Post-FEC) <1E-15
- Copper link up to max length 4.5m
- Support Integrated Heat Sink and Removable Heat Sink
- Supports device programming by MCU with I2C

## 2. Product Applications

- Switches, servers and routers
- Data Center networks
- Storage area networks
- High performance computing
- Telecommunication and wireless infrastructure
- Medical diagnostics and networking
- Test and measurement equipment
- Infiniband Interconnect

## 3. Industry Standards

- 1600G Ethernet(IEEE 802.3dj)
- InfiniBand XDR
- Compliant with CMIs 5.0

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## 4. Product Description

OSFP active electrical cable assembly feature sixteen differential copper pairs, providing eight data transmission channels at speeds up to 200Gbps(PAM4) per channel, and meets 1600G Ethernet and InfiniBand XDR requirements. Available in 25AWG to 30AWG wire gauges, this 1600G copper cable assembly features low insertion loss and low crosstalk.

### 4.1 Product Name And Series Number(s)

**1.6T OSFP Active Electrical Cable - PAM4**

| JPC P/N | Length(m) | Cable AWG | Description |
|---|---|---|---|
| PAT**7W0a**M-1 | 1.0m – 2.0m | 30 AWG | 1600G (1.6T) OSFP AEC PAM4 30AWG **m |
| PAT**7X0a**M-1 | 1.0m – 3.0m | 28 AWG | 1600G (1.6T) OSFP AEC PAM4 28AWG **m |
| PAT**7Z0a**M-1 | 4.0m – 4.5m | 25 AWG | 1600G (1.6T) OSFP AEC PAM4 25AWG **m |

**Note-1：** ** **Indicates the customer code.**

**Note-2：** a **Indicates the Housing Heat Sink**

**e.g. A means IHS-IHS, C means IHS-RHS**

**Note-3：** ** **Indicates the length.**

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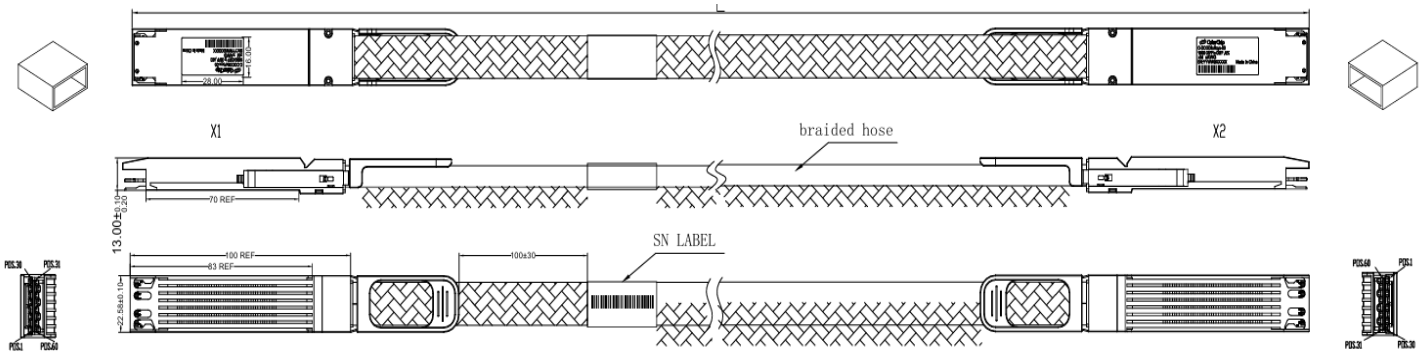
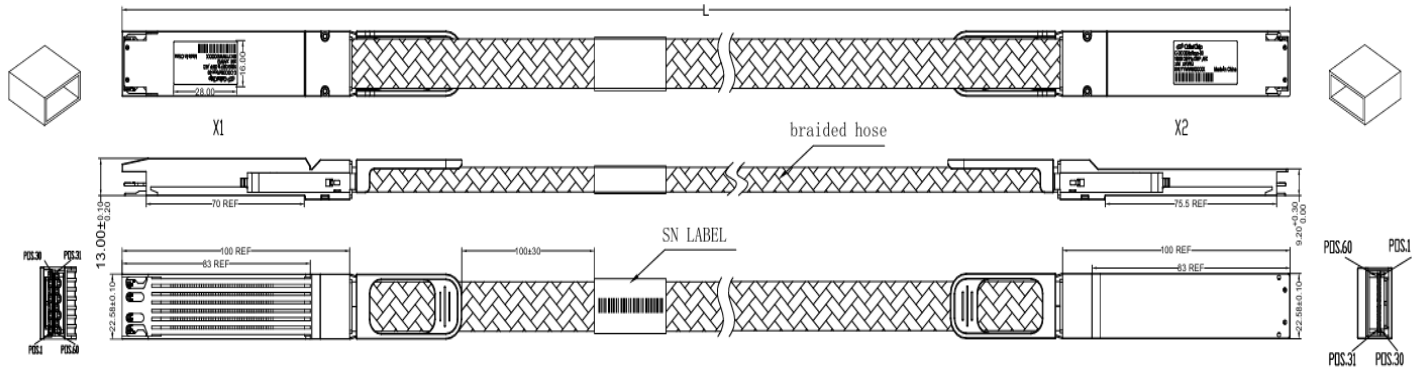
## 4.2 DIMENSIONS, MATERIALS, PLATINGS AND MARKING




**IHS to IHS Mechanical Dimensions**




**IHS to RHS Mechanical Dimensions**

| Length (m) | Cable AWG |
|---|---|
| 0.5m – 2.0m | 30/28 |
| 2.0m – 3.0m | 28 |
| 4.0m - 4.5m | 25 |

Unit is millimeter. All dimensions are ±0.1mm unless otherwise specified

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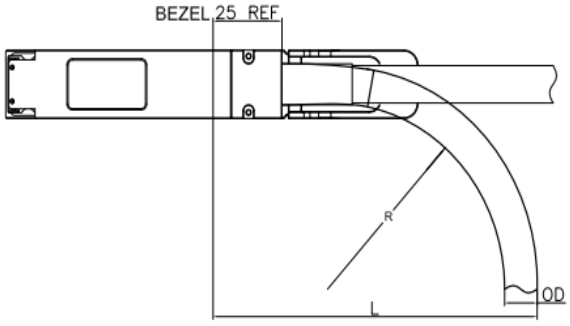
**Bending Radius Specifications**

| Wire gauge | OD(Ref) | Min. bend radius | Bend space |
|---|---|---|---|
| **30AWG** | 9.5mm | 19mm | 64mm |
| **28AWG** | 10.2mm | 20.4mm | 65mm |
| **25AWG** | 11.4mm | 28.5mm | 73mm |




## 5. General Product Characteristics

| 1600G OSFP AEC Specifications | |
|---|---|
| Number of Lanes | Tx8 & Rx8 |
| Channel Data Rate | 212.5Gbps |
| Operating Temperature | 0 to + 70°C |
| Humidity | 5 to 95% |
| Storage Temperature | -40 to + 85°C |
| Supply Voltage | 3.3 V nominal |
| Electrical Interface | 60pins edge connector |
| Management Interface | Serial, $I^2C$ |

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## 6. Recommended Operating Conditions

| Parameter | Symbol | Min | Typical | Max | Unit |
|---|---|---|---|---|---|
| Case Temperature- Operating | $T_{CASE}$ | 0 | | 70 | $^0$C |
| Supply Voltage | Vcc | 3.135 | 3.3 | 3.465 | V |
| Power Consumption | $P_{DISS}$ | | | 19 | W |
| Pre-FEC Bit Error Ration | | | | $1x10^{-8}$ | |
| Pre-FEC Bit Error Ration | | | | $1x10^{-15}$ | |
| Date Rate | | | 1600 | | Gbps |

## 7. Regulatory Compliance

| Feature | Test Method | Performance |
|---|---|---|
| Electrostatic Discharge (ESD) to the Electrical | MIL-STD-883C Method 3015.7 | Class 1(>2000 Volts) |
| Electromagnetic Interference(EMI) | FCC Class B<br>CENELEC EN55022 Class B<br>CISPR22 ITE Class B | Compliant with Standards |
| RF Immunity(RFI) | IEC61000-4-3 | Typically Show no Measurable Effect from a 10V/m Field Swept from |
| RoHS Compliance | RoHS Directive 2011/65/EU and it's Amendment Directives （EU） 2015/863 | RoHS （EU）2015/863 compliant |
| REACH Compliance | REACH Regulation (EC) No 1907/2006 | REACH (EC) No 1907/2006 compliant |

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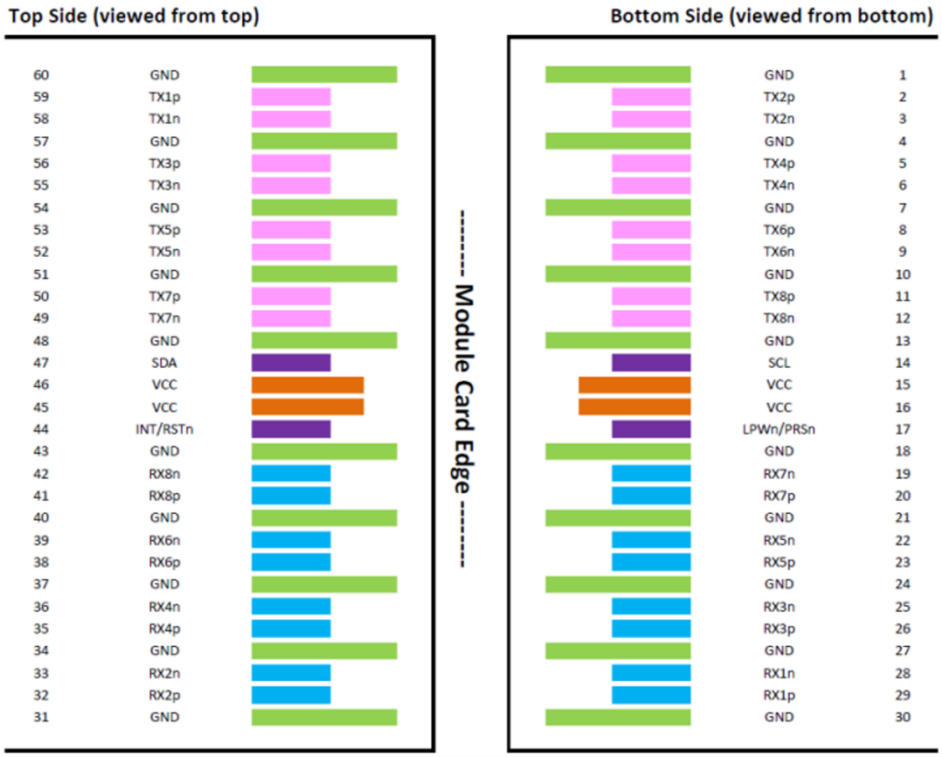
## 8. Applications Note:

### Pin Definitions




### Pin Function Definitions

| Pin | Logic | Symbol | Description |
|---|---|---|---|
| 1 | | GND | Ground |
| 2 | CML-I | Tx2p | Transmitter Non-Inverted Data Input |
| 3 | CML-I | Tx2n | Transmitter Inverted Data Input |
| 4 | | GND | Ground |
| 5 | CML-I | Tx4p | Transmitter Non-Inverted Data Input |
| 6 | CML-I | Tx4n | Transmitter Inverted Data Input |
| 7 | | GND | Ground |
| 8 | CML-I | Tx6p | Transmitter Non-Inverted Data Input |
| 9 | CML-I | Tx6n | Transmitter Inverted Data Input |
| 10 | | GND | Ground |

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| | | | |
|---|---|---|---|
| 11 | CML-I | Tx6p | Transmitter Non-Inverted Data Input |
| 12 | CML-I | Tx6n | Transmitter Inverted Data Input |
| 13 | | GND | Ground |
| 14 | LVCMOS-I/O | SCL | 2-wire serial interface clock |
| 15 | | VCC | +3.3V Power supply |
| 16 | | VCC | +3.3V Power supply |
| 17 | | LPWn/PRSn | Low-Power Mode / Module Present |
| 18 | | GND | Ground |
| 19 | CML-O | Rx7n | Receiver Inverted Data Output |
| 20 | CML-O | Rx7p | Receiver Non-Inverted Data Output |
| 21 | | GND | Ground |
| 22 | CML-O | Rx5n | Receiver Inverted Data Output |
| 23 | CML-O | Rx5p | Receiver Non-Inverted Data Output |
| 24 | | GND | Ground |
| 25 | CML-O | Rx3n | Receiver Inverted Data Output |
| 26 | CML-O | Rx3p | Receiver Non-Inverted Data Output |
| 27 | | GND | Ground |
| 28 | CML-O | Rx1n | Receiver Inverted Data Output |
| 29 | CML-O | Rx1p | Receiver Non-Inverted Data Output |
| 30 | | GND | Ground |
| 31 | | GND | Ground |
| 32 | CML-O | Rx2p | Receiver Non-Inverted Data Output |
| 33 | CML-O | Rx2n | Receiver Inverted Data Output |
| 34 | | GND | Ground |
| 35 | CML-O | Rx4p | Receiver Non-Inverted Data Output |
| 36 | CML-O | Rx4n | Receiver Inverted Data Output |
| 37 | | GND | Ground |
| 38 | CML-O | Rx6p | Receiver Non-Inverted Data Output |
| 39 | CML-O | Rx6n | Receiver Inverted Data Output |
| 40 | | GND | Ground |
| 41 | CML-O | Rx8p | Receiver Non-Inverted Data Output |
| 42 | CML-O | Rx8n | Receiver Inverted Data Output |
| 43 | | GND | Ground |
| 44 | | INT/RSTn | Module Interrupt / Module Reset |
| 45 | | VCC | +3.3V Power supply |
| 46 | | VCC | +3.3V Power supply |
| 47 | LVCMOS-I/O | SDA | 2-wire serial interface data |
| 48 | | GND | Ground |
| 49 | CML-I | Tx7n | Transmitter Inverted Data |

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| | | | |
|---|---|---|---|
| 50 | CML-I | Tx7p | Input Transmitter Non-Inverted Data Input |
| 51 | | GND | Ground |
| 52 | CML-I | Tx5n | Transmitter Inverted Data |
| 53 | CML-I | Tx5p | Input Transmitter Non-Inverted Data Input |
| 54 | | GND | Ground |
| 55 | CML-I | Tx3n | Transmitter Inverted Data |
| 56 | CML-I | Tx3p | Input Transmitter Non-Inverted Data Input |
| 57 | | GND | Ground |
| 58 | CML-I | Tx1n | Transmitter Inverted Data |
| 59 | CML-I | Tx1p | Input Transmitter Non-Inverted Data Input |
| 60 | | GND | Ground |

## 9. Modification History

| Rev. | Comments | Date | Originator | Approval |
|---|---|---|---|---|
| 01 | Initial | 2026.01.15 | Hawk Rong | Mike Sun |
| | | | | |