



### **SFP-10GB-BX-D-HW-I-OPC**

Huawei® Compatible TAA 10GBase-BX SFP+ Transceiver (SMF, 1330nmTx/1270nmRx, 10km, LC, DOM, -40 to 85C)

#### **Features**

- SFF-8432 and SFF-8472 Compliance
- Simplex LC Connector
- Single-mode Fiber
- Industrial Temperature -40 to 85 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



#### **Applications:**

- 10GBase-BX Ethernet
- 8x/10x Fibre Channel
- Access, Metro and Enterprise

#### **Product Description**

This Huawei® compatible SFP+ transceiver provides 10GBase-BX throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1330nmTx/1270nmRx via an LC connector. This bidirectional unit must be used with another transceiver or network appliance of complementing wavelengths. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 85C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Huawei®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

OptioConnect's transceivers are RoHS compliant and lead-free.

## Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4.
- ESD to the LC Receptacle: compatible with IEC 61000-4-3.
- EMI/EMC: compatible with FCC Part 15 Subpart B Rules, EN55022:2010.
- Laser Eye Safety: compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1, 2.
- RoHS: compliant with EU RoHS 2.0 directive 2015/863/EU.

## Absolute Maximum Ratings

| Parameter                  | Symbol | Min. | Typ. | Max.              | Unit | Notes |
|----------------------------|--------|------|------|-------------------|------|-------|
| Maximum Supply Voltage     | Vcc    | -0.5 |      | 4.0               | V    | 1     |
| Storage Temperature        | Tstg   | -40  |      | 85                | °C   | 2     |
| Operating Case Temperature | Tc     | -40  |      | 85                | °C   | 3     |
| Data Rate                  | DR     | 9.83 |      | 11.3              | Gbps | 4     |
| Bit Error Rate             | BER    |      |      | 10 <sup>-12</sup> |      |       |
| Supply Current             | Icc    |      | 200  | 350               | mA   | 1     |

## Notes:

1. For electrical power interface.
2. Ambient temperature.
3. Case Temperature.
4. IEEE 802.3ae.

## Electrical Characteristics

| Parameter                                | Symbol            | Min. | Typ. | Max.     | Unit | Notes |
|------------------------------------------|-------------------|------|------|----------|------|-------|
| Power Supply Voltage                     | Vcc               | 3.14 | 3.3  | 3.46     | V    |       |
| Power Dissipation                        | P <sub>DISS</sub> |      | 0.65 | 1.2      | W    |       |
| Transmitter                              |                   |      |      |          |      |       |
| Input Differential Impedance             | RIN               |      | 100  |          | Ω    |       |
| Differential Data Input Swing            | VIN,pp            | 180  |      | 700      | mV   |       |
| Transmit Disable Voltage                 | VD                | 2.0  |      | Vcc      | V    |       |
| Transmit Enable Voltage                  | VEN               | Vee  |      | Vee+0.8  | V    |       |
| Receiver                                 |                   |      |      |          |      |       |
| Differential Data Output Swing           | VOUT,pp           | 300  |      | 850      | mV   |       |
| Data Output Rise Time/Fall Time (20-80%) | Tr/Tf             | 28   |      |          | ps   |       |
| LOS Assert                               | LOSA              | 2    |      | Host_Vcc | V    |       |
| LOS De-Assert                            | LOSD              | Vee  |      | Vee+0.5  | V    |       |

## Optical Characteristics

| Parameter                       | Symbol                                | Min. | Typ. | Max.  | Unit  | Notes |
|---------------------------------|---------------------------------------|------|------|-------|-------|-------|
| Transmitter                     |                                       |      |      |       |       |       |
| Output Optical Power            | Ptx                                   | -8.2 |      | 0.5   | dBm   | 1     |
| Optical Center Wavelength       | λC                                    | 1320 | 1330 | 1340  | nm    |       |
| Extinction Ratio                | ER                                    | 3.5  |      |       | dB    |       |
| Spectral Width (-20dB)          | Δλ                                    |      |      | 0.6   | nm    |       |
| Side-Mode Suppression Ratio     | SMSR                                  | 30   |      |       | dB    |       |
| Relative Intensity Noise        | RIN                                   |      |      | -128  | dB/Hz |       |
| Transmitter Dispersion Penalty  | TDP                                   |      |      | 3.2   | dB    |       |
| Launch Power of Off Transmitter | Poff                                  |      |      | -30   | dBm   | 1     |
| Transmitter Jitter              | According to IEEE 802.3ae Requirement |      |      |       |       |       |
| Receiver                        |                                       |      |      |       |       |       |
| Receiver Overload               |                                       | 0.5  |      |       | dBm   |       |
| Optical Center Wavelength       | λC                                    | 1260 | 1270 | 1280  | nm    |       |
| Receiver Sensitivity            | S                                     |      |      | -14.4 | dBm   | 2     |
| Receiver Reflectance            | TRrx                                  |      |      | -12   | dB    |       |
| LOS Assert                      | LOSA                                  | -30  |      |       | dBm   |       |
| LOS De-Assert                   | LOSD                                  |      |      | -17   | dBm   |       |
| LOS Hysteresis                  | LOSH                                  | 0.5  |      |       | dB    |       |

### Notes:

1. Average.
2. Average. Measured with worst ER: BER <  $10^{-12}$  and  $2^{31}-1$  PRBS.

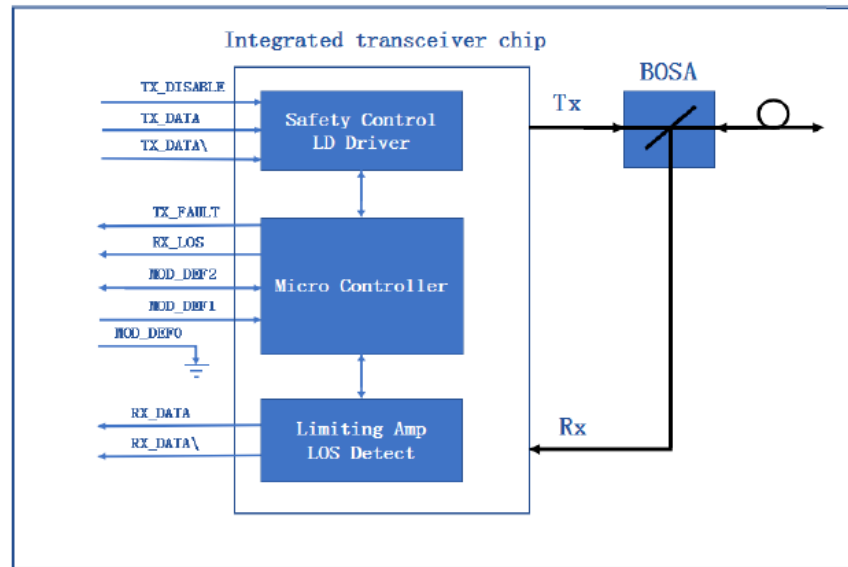
## Pin Descriptions

| Pin | Symbol     | Name/Descriptions                                                | Notes |
|-----|------------|------------------------------------------------------------------|-------|
| 1   | VeeT       | Transmitter Ground. Common with receiver ground.                 | 1     |
| 2   | Tx_Fault   | Transmitter Fault.                                               | 2     |
| 3   | Tx_Disable | Transmitter Disable. Laser output disabled on "high" or "open."  | 3     |
| 4   | SDA        | 2-Wire Serial Interface Data.                                    | 4     |
| 5   | SCL        | 2-Wire Serial Interface Clock.                                   | 4     |
| 6   | MOD_ABS    | Module Absent. Grounded within the module.                       | 4     |
| 7   | RS0        | No connection required.                                          |       |
| 8   | LOS        | Loss of Signal indication. "Logic 0" indicates normal operation. | 5     |
| 9   | RS1        | No connection required.                                          | 1     |
| 10  | VeeR       | Receiver Ground. Common with transmitter ground.                 | 1     |
| 11  | VeeR       | Receiver Ground. Common with transmitter ground.                 | 1     |
| 12  | RD-        | Receiver Inverted Data Out. AC coupled.                          |       |
| 13  | RD+        | Receiver Non-Inverted Data Out. AC coupled.                      |       |
| 14  | VeeR       | Receiver Ground. Common with transmitter ground.                 | 1     |
| 15  | VccR       | Receiver Power Supply.                                           |       |
| 16  | VccT       | Transmitter Power Supply.                                        |       |
| 17  | VeeT       | Transmitter Ground. Common with receiver ground.                 | 1     |
| 18  | TD+        | Transmitter Non-Inverted Data In. AC coupled.                    |       |
| 19  | TD-        | Transmitter Inverted Data In. AC coupled.                        |       |
| 20  | VeeT       | Transmitter Ground. Common with receiver ground.                 | 1     |

## Notes:

1. Circuit ground is isolated from the chassis ground.
2. Tx\_Fault is the open collector output and should be pulled up with 4.7k $\Omega$ -10k $\Omega$  on the host board to a voltage between 2V and Vcc+0.3V.
3. Disabled: TDIS>2V or open. Enabled TDIS<0.8V.
4. Should be pulled up with the 4.7k $\Omega$ -10k $\Omega$  on the host board to a voltage between 2V and Vcc+0.3V.
5. LOS is open collector output and should be pulled with 4.7k $\Omega$ -10k $\Omega$  on the host board to a voltage between 2V and Vcc+0.3V. The logic "0" indicated normal operation, and the logic "1" indicates that the receiver signal is lost.

## Transceiver Block Diagram

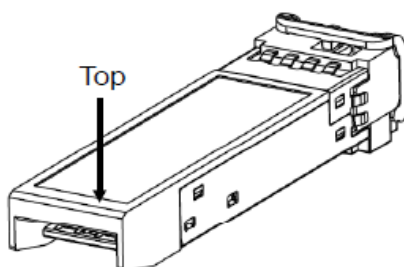


## Electical Pad Layout

Top view



Bottom view



Mechanical Specifications



## **OptioConnect**

### **Innovation for the Future of High-Speed Networking**

#### **Who We Are**

OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

#### **What We Do**

At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

#### **Smarter Networks by Design**

Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

#### **Our Team**

Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

#### **Our Mission**

To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

#### **Let's Connect**

Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.

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