



## SFP-28G-AOC1M-EX-SKY

Extreme Networks® Compatible 25GBase-AOC SFP28 Active Optical Cable (850nm, MMF, 1m)

### Product Description

This is an Extreme Networks® compatible 25GBase-AOC SFP28 to SFP28 active optical cable that operates over multi-mode fiber with a maximum reach of 1.0m (3.3ft). At a wavelength of 850nm, it has been programmed, uniquely serialized, and data-traffic and application tested to ensure it is 100% compliant and functional. This active optical cable is built to comply with MSA (Multi-Source Agreement) standards. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

### Features:

- Hot-pluggable SFP28 form factor
- 850nm VCSEL laser and PIN photo-detector
- Supports 25Gbps data rate
- Single 3.3V power supply
- Power dissipation < 1W
- Internal CDR on both Transmitter and receiver channel
- Operating Case temperature: 0 to 70 Celsius
- Digital diagnostics functions are available via the I2C interface
- RoHS Compliant and Lead-Free



### Applications:

- 25Gbase-SR Ethernet

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*For your product safety, please read the following information carefully before any manipulation of the transceiver:*



#### **ESD**

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 / JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



#### **LASER SAFETY**

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

*The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.*

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## General Specifications

| Parameter                  | Symbol           | Min  | Typ. | Max. | Unit |
|----------------------------|------------------|------|------|------|------|
| Storage Temperature        |                  | -40  |      | 85   | °C   |
| Operating Case Temperature | T <sub>c</sub>   | 0    |      | 70   | °C   |
| Power Supply Voltage       | V <sub>cc</sub>  | 3.13 | 3.3  | 3.47 | V    |
| Supply Voltage             | V <sub>cc</sub>  | 0    |      | 3.6  | V    |
| Storage Temperature        | T <sub>stg</sub> | -40  |      | 85   | °C   |
| Operating Humidity         |                  | 5    |      | 85   | %    |

## Optical Characteristics

| Parameter                      |         | Symbol              | Min. | Typ.  | Max.            | Unit | Notes |
|--------------------------------|---------|---------------------|------|-------|-----------------|------|-------|
| Transmitter                    |         |                     |      |       |                 |      |       |
| Data Rate                      |         | BR                  |      | 25.78 |                 | Gbps |       |
| Centre Wavelength              |         | λ <sub>c</sub>      | 840  | 850   | 860             | nm   |       |
| Spectral Width (-20dB)         |         | σ                   |      |       | 0.6             | nm   |       |
| Average Output Power           |         | P <sub>avg</sub>    | -8.4 |       | 2.4             | dBm  |       |
| Optical Power OMA              |         | P <sub>OMA</sub>    | -6.4 |       | 3               | dBm  |       |
| Extinction Ratio               |         | ER                  | 2    |       |                 | dB   |       |
| Differential data input swing  |         | V <sub>IN,PP</sub>  | 40   |       | 1000            | mV   |       |
| Input Differential Impedance   |         | Z <sub>IN</sub>     | 90   | 100   | 110             | Ω    |       |
| TX Disable                     | Disable |                     | 2.0  |       | V <sub>cc</sub> | V    |       |
|                                | Enable  |                     | 0    |       | 0.8             | V    |       |
| TX Fault                       | Fault   |                     | 2.0  |       | V <sub>cc</sub> | V    |       |
|                                | Normal  |                     | 0    |       | 0.8             | V    |       |
| Receiver                       |         |                     |      |       |                 |      |       |
| Data Rate                      |         | BR                  |      | 25.78 |                 | Gbps |       |
| Centre Wavelength              |         | λ <sub>c</sub>      | 840  | 850   | 860             | nm   |       |
| Receiver Sensitivity (OMA)     |         | P <sub>sens</sub>   |      |       | -10             | dBm  |       |
| Stressed Sensitivity (OMA)     |         |                     |      |       | -5.2            | dBm  |       |
| Receiver Power (OMA)           |         |                     |      |       | 3               | dBm  |       |
| LOS De-Assert                  |         | LOS <sub>D</sub>    |      |       | -13             | dBm  |       |
| LOS Assert                     |         | LOS <sub>A</sub>    | -30  |       |                 | dBm  |       |
| LOS Hysteresis                 |         |                     | 0.5  |       |                 | dB   |       |
| Differential data output swing |         | V <sub>out,PP</sub> | 500  |       | 1130            | mV   |       |
| LOS                            | High    |                     | 2.0  |       | V <sub>cc</sub> | V    |       |
|                                | Low     |                     |      |       | 0.8             | V    |       |

## Pin Descriptions

| Pin | Logic      | Symbol   | Name/Description                 | Notes |
|-----|------------|----------|----------------------------------|-------|
| 1   |            | VeeT     | Transmitter Ground.              |       |
| 2   | LV-TTL-O   | TX_Fault | N/A                              | 1     |
| 3   | LV-TTL-I   | TX_DIS   | Transmitter Disable.             |       |
| 4   | LV-TTL-I/O | SDA      | 2-Wire Serial Data.              |       |
| 5   | LV-TTL-I   | SCL      | 2-Wire Serial Clock.             |       |
| 6   |            | MOD_DEF0 | Module present, connect to VeeT. |       |
| 7   | LV-TTL-I   | RS0      | N/A                              | 1     |
| 8   | LV-TTL-O   | LOS      | LOS of Signal.                   |       |
| 9   | LV-TTL-I   | RS1      | N/A                              | 1     |
| 10  |            | VeeR     | Receiver Ground.                 |       |
| 11  |            | VeeR     | Receiver Ground.                 |       |
| 12  | CML-O      | RD-      | Receiver Data Inverted.          |       |
| 13  | CML-O      | RD+      | Receiver Data Non-inverted.      |       |
| 14  |            | VeeR     | Receiver Ground.                 |       |
| 15  |            | VccR     | Receiver Supply +3.3V.           |       |
| 16  |            | VccT     | Transmitter Supply +3.3V.        |       |
| 17  |            | VeeT     | Transmitter Ground.              |       |
| 18  | CML-I      | TD+      | Transmitter Data Non-Inverted.   |       |
| 19  | CML_I      | TD-      | Transmitter Data Inverted.       |       |
| 20  |            | VeeT     | Transmitter Ground.              |       |

### Note:

1. Signals not supported in SFP28 Copper pulled-down to VeeT with 30kΩ resistor.

Host Board



Mechanical Specification



# About Skylane Optics

Skylane is a leading provider of transceivers for optical communication.

We offer an extensive portfolio for the enterprise, access, datacenter and metropolitan fiber optical market as well as for smart home applications and home networks.

We cover the European, South American and North American market with a strong partner network and have offices in Belgium, Brazil, Sweden and USA.

Our offerings are characterized by high quality and performance. In combination with our strong technical support, we enable our customers to build cost optimized network solutions.

We offer an extensive range of high-quality products including transceivers (Optical and copper), Active Optical Cable (AOC), Direct Attach Cable (DAC), Mux/Demux, Coding Box.

