



# 40GBASE SR4 QSFP+ Optical Engine Preliminary

## Features:

High-speed and high-performance Data Communication applications  
Fiber Channel Networking/Storage applications

## Applications:

40GBASE SR4 QSFP+ Transceiver and Active Optical Cable

## Specifications:

### Absolute Maximum Ratings

| Parameter               | Symbol      | Min | Max. | Unit |
|-------------------------|-------------|-----|------|------|
| LD Reverse Voltage      | $V_{r(LD)}$ | --  | 5    | V    |
| LD Forward Current      | $I_{f(LD)}$ | --  | 12   | mA   |
| Operating Temperature   | $T_{op}$    | -0  | 70   |      |
| Storage Temperature     | $T_{stg}$   | -40 | 85   |      |
| Lead Solder Temperature | --          | --  | 260  |      |
| Lead Soldering Time     | --          | --  | 2    | s    |

### Transmitter Optical & Electrical Characteristics (T=25°C)

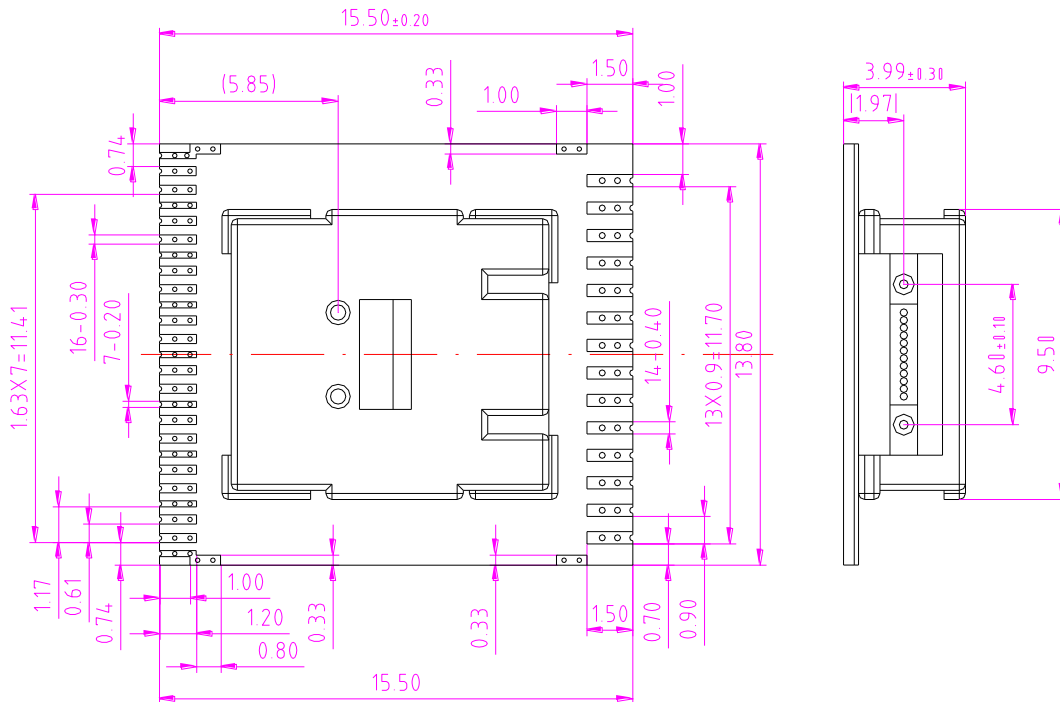
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
|-----------|--------|----------------|-----|-----|-----|------|
|-----------|--------|----------------|-----|-----|-----|------|



### Receiver Optical/Electrical Characteristics

| Parameter                                     | Symbol | Test Condition  | Min  | Typ | Max | Unit |
|---|--------|---|------|-----|-----|------|
| Damage threshold                              | --     |   | 3.4  | --  | --  | dBm  |
| Average power at receiver input, each lane    |        | 10.3125Gbps, PRBS31, BER=1*E-12 , ER=4.5dB, Output Differential Voltage = Min.290mV | -9.5 | --  | 2.4 | dBm  |
| Optical Return Loss                           | ORL    | --  | --   | --  | -12 | dB   |
| Optical Modulation Amplitude (OMA), each lane | --     | --  | --   | --  | 3   | dBm  |
| Peak Power, each lane                         | --     | --  | --   | --  | 4   | dBm  |

### Outline Dimension(mm) :





**Electrical IO Assignment:**

**Optical IO Assignment:**

**Top View**

**Front View**

| Pin Number | Pin Name | Description  |
|------------|----------|--|
| 1          | DOUT4N   | Differential high-speed Data Output pads, P is the positive (non- inverted) node and N is the negative (inverted) node.      |
| 2          | DOUT4P   |  |
| 3          | DOUT3N   |  |
| 4          | DOUT3P   |  |
| 5          | DOUT2N   |  |
| 6          | DOUT2P   |  |
| 7          | DOUT1N   |  |
| 8          | DOUT1P   |  |
| 9          |          | Differential high-speed Data Input pin P is the positive (non- inverted) node and pin N is the negative (inverted) node. The |
| 10         |          |  |
| 11         |          |  |
| 12         |          |  |
| 13         |          |  |
| 14         |          |  |
| 15         |          |  |
| 16         |          |  |

---



|    |         |  |
|----|---------|--|
| 21 | LDIS    | <p>The Laser Disable pin (LDIS) is a global output disable signal that will set Iavg and Imod to 0 when it is high, regardless of other settings.</p> <p>The pin can be left unconnected and the device will operate normally. The state of the pin may be read through the management interface.</p>  |
| 22 | VCCT    | Positive supply of driver stages and VCSEL anodes  |
| 23 | GNDT    | Negative supply, substrate   |
| 24 | GNDR    | Negative supply, substrate   |
| 25 |         |  |
| 26 | VCCR    | Positive supply of TIA stage and Limiting amplifier stage  |
| 27 | RSSI    | <p>The Receiver Signal Strength Indicator output (RSSI) pad is an analog output that sources a current proportional to the average photo-detector current on the selected channels. The output is used during manufacturing for active alignment.</p> <p>As well, the output can be configured to produce a temperature proportional output.</p> |
| 28 | NOTINTR | <p>The active- low Interrupt (NOTINT) signals notifies the microcontroller about signal detect events such as signal detect and loss of signal when the events are unmasked.</p> <p>In systems using polling-based firmware, this input may be left unconnected.</p>   |
| 29 | SCLR    | The Serial Clock pad (SCL) is the clock input signal of the serial interface. The pad can be tied to VDD of 3.3V or 2.5V via a resistor. The SCL input is I <sup>2</sup> C-bus compatible and operates at up to 1000kHz. If the serial interface is unused, this pad should be left unconnected.   |
| 30 | SDAR    | The Serial Data pad (SDA) is a bidirectional pad for the serial data signal. The pad can be tied to VDD of 3.3V or 2.5V via a resistor. The SDA pad is I <sup>2</sup> C-bus compatible and operates at up to 1000kHz. If the serial interface is unused, this pad should be left unconnected.  |



|    |      |                            |
|----|------|----------------------------|
| 31 | GNDR | Negative supply, substrate |
| 32 |      |                            |
| 33 |      |                            |
| 34 |      |                            |
| 35 |      |                            |
| 36 | GNDT | Negative supply, substrate |
| 37 |      |                            |
| 38 |      |                            |
| 39 |      |                            |
| 40 |      |                            |
| 41 |      |                            |

## Order Information:

### 40GBASE SR4 QSFP+ Optical Engine Preliminary

#### Statement:

SAN-U owns the authority for final explanation of all information contained in this document, which is subject to change without notice. All the information was obtained in particular environments; and SAN-U will not be responsible for the performance of the

reference and shall not be considered as warranted characteristics. SAN-U will not be liable for damages arising directly or indirectly which from any use of the information contained in this document.

---

#### Contact Information:

Address: N501-505 Weiye Bldg., Xiamen Pioneering Park For Overseas Chinese Scholars, Xiamen, Fujian, China

Tel: +86-592-3898601, 3898608, 5318000

Fax: +86-592-5703588

Email: sales@san-u.com

<http://www.san-u.com>