# SPLC-20-F-1-D Optical Transceiver 

4x / 2x / 1x Fiber Channel Applications 850nm SFP w/ DDMI 4.25 / 2.125 / 1.0625 GBaud



## Applications

The Cinch Connectivity Solutions SPLC-20-F-1-D pluggable transceiver module is a high performance integrated duplex data link for bi-directional communication over multimode optical fiber. It is compliant with the Small Form Factor Pluggable (SFP) Multi-Source Agreement (MSA) transceiver specification. The SPLC-20-F-1-D is specifically designed for high speed data links up to 4.25GBaud.

The Stratos Lightwave SFP transceiver is hot pluggable which allows a suitably designed enclosure to be changed from one type of external interface to another simply by plugging in a SFP having the alternative external interface. This optoelectronic transceiver module is a Class 1 Laser product compliant with FDA Radiation Performance Standards, 21 CFR Subchapter J. This component is also Class 1 Laser compliant according to International Safety Standard IEC-825-1/EN 60825.

## Features

- 4.25GBaud Fiber Channel Compliant
- 2.125GBaud Fiber Channel Compliant
- 1.0625GBaud Fiber Channel Compliant
- Digital Diagnostics Monitoring Interface (DDMI)
- Compliant with SFP MSA Specification
- 100 Differential AC Coupled Inputs/Outputs
- Metal Housing
- Serial ID Functionality
- Hot pluggable
- Single +3.3V Power Supply
- RoHS Compliant
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optical technologies


## Ordering Information

SPLC - 20 - F - 1 - D

Module Specifications - Electrical: $0^{\circ} \mathrm{C}<\mathrm{Tc}<+70^{\circ} \mathrm{C}$; $+3.0 \mathrm{~V}<\mathrm{Vcc}<+3.6 \mathrm{~V}$

| Parameter | Symbol | MIN | Typical | MAX | Unit | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Supply Current |  |  |  | 300 | mA | $0^{\circ} \mathrm{C}<\mathrm{Tc}<+70^{\circ} \mathrm{C} ;+3.0 \mathrm{~V}<\mathrm{Vcc}<+3.6 \mathrm{~V}$ |
| Transmitter |  |  |  |  |  |  |
| Input Swing (Differential) | Vin | 500 |  | 2400 | mVpp | Rin $>100 \mathrm{~K} \Omega$ @ DC |
| Input Impedance (Differential) | Rin | 85 | 100 | 115 | $\Omega$ |  |
| TX_DISABLE Input Voltage - High | $\mathrm{V}_{\mathrm{IH}}$ | 2 |  | 3.465 | V |  |
| TX_DISABLE Input Voltage - Low | $\mathrm{V}_{1 L}$ | 0 |  | 0.8 | V |  |
| TX_FAULT Output Voltage - High | VtoH | Vcc-0.5 |  | $\mathrm{V}_{\mathrm{cc}}+0.3$ | V | $\mathrm{lo}=400 \mu \mathrm{~A}$; Host Vcc |
| TX_FAULT Output Voltage - Low | VtoL | 0 |  | 0.8 | V | $\mathrm{lo}=4.0 \mathrm{~mA}$ |
| Receiver |  |  |  |  |  |  |
| Output Swing (Differential) |  | 300 |  | 1200 | mVpp | AC Coupled Outputs |
| Output Impedance (Differential) | Rout | 85 | 100 | 115 | $\Omega$ |  |
| RX_LOS Output Voltage - High | VroH | Vcc-0.5 |  | Vcc+0.3 | V | $\mathrm{lo}=400 \mu \mathrm{~A}$; Host Vcc |
| RX_LOS Output Voltage - Low | VroL | 0 |  | 0.8 | V | $\mathrm{lo}=-4.0 \mathrm{~mA}$ |
| Rate Select (1.0625GBaud) | RS ${ }_{\text {Low }}$ | 0 |  | 0.8 | V | In Accordance to SFF Committee |
| Rate Select (2 / 4 GBaud) | $\mathrm{RS}_{\text {HIGH }}$ | 2 |  | 3.465 | V | SFF-80-79 |

Module Specifications - Optical: $0^{\circ} \mathrm{C}<\mathrm{Tc}<+70^{\circ} \mathrm{C} ;+3.0 \mathrm{~V}<\mathrm{Vcc}<+3.6 \mathrm{~V}$

| Parameter | Symbol | MIN | Typical | MAX | Unit | Notes |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 50 $\mu \mathrm{m}$ Core Diameter MMF |  | $\begin{aligned} & 150 \\ & 300 \\ & 550 \end{aligned}$ | $\begin{aligned} & 250 \\ & 500 \\ & 1000 \end{aligned}$ |  | m | BER<1.0E-12 @ 4.25GBaud <br> BER<1.0E-12 @ 2.125GBaud <br> BER<1.0E-12 @ 1.25/1.0625GBaud |
| 62.5pm Core Diameter MMF |  | $\begin{aligned} & 70 \\ & 150 \\ & 300 \end{aligned}$ | $\begin{aligned} & 150 \\ & 300 \\ & 500 \end{aligned}$ |  | m | BER<1.0E-12 @ 4.25GBaud <br> BER<1.0E-12 @ 2.125GBaud <br> BER<1.0E-12 @ 1.25/1.0625GBaud |
| Transmitter <br> Optical Center Wavelength <br> Spectral Width <br> Optical Transmit Power <br> Optical Modulation Amplitude <br> Relative Intensity Noise Output Eye | $\lambda$ <br> $\Delta \lambda$ <br> Popt <br> OMA <br> RIN <br> Complies | $\begin{aligned} & 830 \\ & \\ & -9 \\ & 247 \\ & 196 \\ & 196 \\ & \text { ANSI } \end{aligned}$ | $850$ <br> specification | $\begin{aligned} & 860 \\ & 0.85 \\ & -3 \\ & \\ & \\ & -118 \\ & \text { nd Cla } \end{aligned}$ | nm <br> nm <br> dBm <br> $\mu \mathrm{W}$ <br> dB/Hz <br> aser eye | RMS <br> Average @ 850nm <br> pk-pk @ 4.125GBaud <br> pk-pk @ 2.125GBaud <br> pk-pk @ 1.0625GBaud <br> Measured with -12dB optical return loss <br> y |
| Receiver Optical Input Wavelength | $\lambda$ | $\begin{aligned} & 770 \\ & -15 \\ & -18 \\ & -20 \end{aligned}$ |  | $\begin{aligned} & 860 \\ & 0 \\ & 0 \\ & 0 \end{aligned}$ | nm dBm | BER<1.0E-12 @ 4.25GBaud BER<1.0E-12 @ 2.125GBaud BER<1.0E-12 @ 1.0625GBaud |
| Optical Return Loss <br> RX_LOS - Asserted | $\begin{aligned} & \text { ORL } \\ & \mathrm{Pa} \end{aligned}$ | $\begin{aligned} & 12 \\ & -29 \end{aligned}$ |  | -15 | dB <br> dBm | Measured on transition - Low to High High to Low @ 4.25GBaud |
| RX_LOS - Deasserted | Pd |  |  | $\begin{aligned} & -18 \\ & -20 \end{aligned}$ | dBm | High to Low @ 2.125GBaud High to Low @ 1.25/1.0625GBaud |
| RX_LOS - Hysteresis | $\mathrm{Pa}-\mathrm{Pd}$ |  | 1.5 | 5 | dB |  |

For more information on this product consult the SPLC-20-F-1-D product data sheet.

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