

# SO-TXFP-10G-ZR-DWDM-A

SFP+, 10G Multirate, DWDM, 50GHz Tunable, 25dB, 80km, D9135-D9610 (96ch)

## OVERVIEW

The SO-TXFP-10G-ZR-DWDM-A is a high performance DWDM XFP-transceiver that is tunable to 96 channels in the 50GHz C-band grid as specified in ITU-T 694.1.

The mechanical characteristics are compliant with the XFP MSA-specification. Wavelength and frequency tuning modes are supported in accordance with SFF-8477.

The transceiver supports data rates from 9.95 to 11.3 Gbps, covering a series of Ethernet, OTN, SDH/SONET and other protocols.

This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification. The transceiver module is compliant to RoHS-6/6.

## TECHNICAL DATA

<b>Technology</b>	DWDM 50GHz XFP	
<b>Transmission media</b>	SM (2x LC)	
<b>Typical reach</b>	80 km	
<b>Bit rate range</b>	9.95 - 11.35 Gbps	
<b>Protocols</b>	Eth:	10GbE-LAN
		10GbE-WAN
	OTN:	OTU2
		OTU2e
	SDH/SONET	STM-64/OC-192
	FC:	10G FC
	CPRI:	Opt 7 (9.8304 Gbps) Opt 8 (10.1376 Gbps)
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CPRI:	Opt 7 (9.8304 Gbps) Opt 8 (10.1376 Gbps)	
<b>Power budget</b>	8.0 - 25.0 dB <sup>1)+2)</sup>	
<b>Temperature range</b>	-5°C to +70°C	
<b>Power consumption</b>	< 2.5W	

<b>Transmitter data</b>	Output power:	Min: -1.0 dBm Max: +3.0 dBm
	Tx wavelength:	191.35 - 196.10 THz in 50GHz steps, 96ch (G.694.1)
	Tuning speed	< 50ms
<b>Receiver data</b>	Min input power:	-26.0 dBm <sup>1)</sup>
	Max input power:	-5.0 dBm <sup>1)</sup>
	Wavelength range:	1525 – 1575 nm
<b>DDM</b>	Yes	
<b>MSA compliance</b>	SFF-8477 XFP INF 8077i	

### Regulatory compliance

<b>RoHS</b>	RoHS 6/6
<b>Safety</b>	Class 1 IEC 60825-1 Ed3.0 (2014)

<b>Storage temp.</b>	-40°C to +85°C
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<sup>1)</sup> @ 10.709 Gbps, 1E-12, OSNR > 35dB.

### System performance

Parameter	Min	Max	OSNR	BER	Remarks
Noise loaded	-400 ps/nm	1500 ps/nm	19 dB	1E-04	10.709Gb/s, -10 to -20dBm, 0.25nm filter BW
Unamplified links	0 ps/nm	1600 ps/nm	>35 dB	1E-12	10.709Gb/s, -22dBm, 0.25nm filter BW

## ORDERING INFORMATION

Part number	Description
SO-TSFP-10G-ZR-DWDM-A	SFP+, 10G Multirate, DWDM, 50GHz Tunable, 25dB, 80km, D9135-D9610 (96ch)

## DEFINITIONS

Technology:	Grey; Transceiver type for non-WDM applications. Electrical or optical. CWDM; Transceiver type for CWDM applications using G.694.2 channel grid. DWDM; Transceiver type for DWDM applications using G.694.1 channel grid. BiDi; Transceiver pair using two different wavelength channels operating on a single-fiber. DAC: Direct Attach Cable. Electrical or optical cable with attached connectors.
Transmission Media:	Type of fiber, e.g. Multimode (MM) or Singlemode (SM). Number of and connector type within brackets (e.g. 2x LC, 1x MPO).
Typical reach:	Nominal distance performance based on dispersion and power budget properties, i.e. w/o dispersion compensation and optical amplification.
Bit rate range:	Supported bit rate range in Gigabit or Megabit per second (Gbps or Mbps).
Protocols:	Protocols within supported bit rate range.
Nominal wavelength:	Typical wavelength from transmitter.
Interface standards:	Referenced interface standards e.g. IEEE 802.3 standard for 10GbE services.
Power budget:	Min and max power budget between Transmitter and Receiver. Excluding any dispersion penalty.
Dispersion tolerance/penalty:	Maximum amount of tolerated dispersion and required reduction of power budget to maintain BER better than $1E^{-12}$ . Defined at a specific bit rate.
Temperature range:	Max operating case temperature range. Standard temperature range: Typically 0°C to +70°C (32°F to +158°F) Extended temperature range (E-temp): Typically -20°C to +75°C (-4°F to +167°F) Industrial temperature range (I-temp): -40°C to +85°C (-40°F to +185°F)
Power consumption:	Worst case power consumption.
Transmitter Output power:	Average output power. Provided in min and max values.
Receiver minimum input power:	Minimum average input power at specified BER, normally $1E^{-12}$ .
Receiver max input power:	Maximum average input power at specified BER, normally $1E^{-12}$ .
DDM:	Digital Diagnostic Monitoring functionality as defined in SFF-8472 MSA.