SO-SFP-155M-O-Cxx-E
SFP, OSC/OTDR, 155Mbps, CWDM, SM, 100km, LC, E-temp

OVERVIEW

The SO-SFP-155M-O-Cxx-E is an SFP form-factor transceiver for OSC (Optical Supervisory Channel) and OTDR (Optical Time Domain Reflectometer) applications. The transceiver operates as a OSC transceiver at 100Mbps Ethernet and STM1/OC3 rates up to 100km distances. Upon disruption of the data link, or failure to connect, the transmitter section of the SFP switches into OTDR mode.

The SFPs measures the optical fiber link optical return loss during the OTDR start-up "handshaking" routine of the SFPs, before the data link is made. The receiver also measures the signal received.

The SO-SFP-155M-O-Cxx-E is provided in three different wavelength versions according to the CWDM wavelength grid plus one at 1625nm. The transceiver is intended to be used together with the Smartoptics Open Line System products.

TECHNICAL DATA

Parameter	Value
Technology	CWDM SFP
Transmission media	SM (2x LC)
Typical reach	100km
Nominal wavelengths	1491nm [3]
	1511nm [4]
	1611nm [5]
	1625nm [6]
Bit rate support	125Mbps / 155Mbps
Protocol support	100M Ethernet / STM1/OC3
Power budget	0 – 34dB [7]
Power consumption	< 0.9W
Operating temperature	-20°C to +70°C
Storage temperature	-40°C to +85°C

OTDR data:	
Dynamic range	Typ: 65dB
Dead zone	Max 30m
Resolution	Max 10m
Accuracy	Max 50m

[3] SO-SFP-155M-O-C49-E		[5] SO-SFP-155M-O-C61-E	
[4] SO-SFP-155M-O-C51-E		[6] SO-SFP-155M-O-C62-E	

Parameter	Value
Transmitter data:	
Output power	Min: -2dBm [1]
	Max: +1dBm [1]
Transmit wavelengths	1484.5 – 1497.5nm [3]
	1504.5 – 1517.5nm [4]
	1604.5 – 1617.5nm [5]
	1618.5 – 1631.5nm [6]
Receiver data:	
Minimum input power	-36dBm [1] [2]
Overload (max power)	+1dBm [1] [2]
Wavelength range	1260 – 1635nm
DDM	Yes
LOS Assert	Typ: -25dBm [7]
LOS De-Assert	Typ: -24dBm [7]
LOS Hysteresis	Min: 1dB
MSA compliance	SFP MSA

[1] Average power

[2] at 125Mbps PRBS7 and BER 1×10^{-12}

[7] The transceiver DDM reports Rx power reliably down to -25dBm. Beyond -25dBm the transceiver will report unreliably and assert Rx_LOS. Even if the Rx_LOS is asserted, the Rx sensitivity is still valid down to -36dBm.

Safety/regulatory compliance:

TUV/UL/FDA (contact Smartoptics for latest certification information).

RoHS compliance

smartoptics
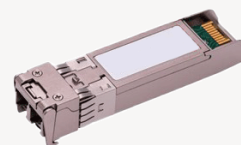
Pull tab colors:

1491nm: Blue

1511nm: White

1611nm: Brown

1625nm: Magenta

ORDERING INFORMATION

Ordering number	Description
SO-SFP-155M-O-C49-E	SFP FE/155M 34dB, OTDR 65dB, E-temp, LC, 1490nm
SO-SFP-155M-O-C51-E	SFP FE/155M 34dB, OTDR 65dB, E-temp, LC, 1510nm
SO-SFP-155M-O-C61-E	SFP FE/155M 34dB, OTDR 65dB, E-temp, LC, 1610nm
SO-SFP-155M-O-C62-E	SFP FE/155M 34dB, OTDR 65dB, E-temp, LC, 1625nm

GENERAL DEFINITIONS

Parameter	Description
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 cable with attached connectors. AOC: Active Optical Cable. 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 typical fiber dispersion, fiber loss and power budget properties, i.e. w/o dispersion compensation and optical amplification. Actual distance is dependent on actual optical path loss and dispersion properties.
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(s) from transmitter.
Interface standards	Referenced interface standards or MSA's, e.g. IEEE 802.3 standard for 10GbE services or 100G 4WDM-10 etc.
Power budget	Min and max power budget between Transmitter and Receiver w/o optical path penalties.
Dispersion tolerance/penalty	Maximum amount of tolerated dispersion and required reduction of power budget to maintain stipulated Bit Error Rate (BER) and at a given bit rate.
Temperature range	Max operating case temperature range. Standard temperature range (C-temp): 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. Will vary over temperature.
Transmitter Output power	Average output power. Provided in min and max values.
Receiver minimum input power	Minimum average input power at specified BER, normally $1E^{-12}$. Note that some protocols require FEC to achieve sufficient BER.
Receiver max input power	Maximum average input power giving a BER, normally $1E^{-12}$.
DDM	Digital Diagnostic Monitoring functionality as defined in e.g. SFF-8472 MSA.