SO-SFP-10GE-BX80D-4955/-5549

SFP+, BiDi, 10G Multirate 9.8-11.3Gbps, Tx/Rx=1490/1550nm, SM, 80km 22dB, LC

OVERVIEW

The SO-SFP-10GE-BX80D is a bi-directional transceiver solution operating directly on a single-fiber without the need for a separate optical filter. This is achieved by having two transceivers that inject different wavelengths into the same single-fiber. The solution thus consists of two transceivers; SO-SFP-10GE-BX80D-4955 and SO-SFP-10GE-BX80D-5549, operating at transmit channels 1490nm and 1550nm respectively. Using a single-fiber solution provides a cost-efficient solution for interconnect and it simplifies the patching since no separate transmit/receive direction has to be taken into account.

The distance performance of the transceiver pair is according to IEEE 802.3ae ZR-standard, providing a bridgeable distance of up to 80km for 10GbE-LAN and 10GbE-WAN services. The transceiver pair supports the 10G Ethernet protocols as well as CPRI rates in the bit rate range.

This transceiver provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification.

TECHNICAL DATA

Parameter	Value
Technology	BiDi SFP+
Transmission media	SM (1x LC)
Typical reach	80km
Nominal wavelength Tx/Rx	1490nm/1550nm & 1550nm/1490nm
Bit rate support	9.8Gbps to 11.3Gbps
Interface standards	10GBASE-ZR, 10GBASE-ZW
Protocol support	10GbE-LAN, 10GbE-WAN
	CPRI Opt, 7, 8
Power budget	10 – 22dB
Dispersion penalty	Max 3dB
Power consumption	< 2.0W
Operating temperature	0°C to +70°C
Storage temperature	-40°C to +85°C

Parameter	Value
Transmitter data:	
Output power	Min -1.0dBm [3]
	Max +4.0dBm [3]
Transmit wavelength	1480 – 1500nm [1]
	1540 – 1560nm [2]
Receiver data:	
Minimum input power	-23.0dBm [3] [4]
Overload (max power)	-6.0dBm [3] [4]
Wavelength range	1540 – 1560nm [1]
	1480 – 1500nm [2]
LOS assert	Min -38dBm
LOS de-assert	Max -24dBm
DDM	Yes
MSA compliance	SFF-8431, -8432, -8472

[1] SO-SFP-10GE-BX80D-4955.

[2] SO-SFP-10GE-BX80D-5549.

[3] Average power.

[4] @ 10.3Gbps, BER ≤ $1x10^{-12}$, PRBS 2^{31}-1, back-to-back.

Safety/regulatory compliance:
TUV/UL/FDA (contact Smartoptics for latest certification information)
RoHS compliance

Note: IEEE 802.3ae 10GBASE-ER/EW is defined only at 1550 nm. The standard is referred to from bridgeable distance perspective.

ORDERING INFORMATION

Ordering code	Description
SO-SFP-10GE-BX80D-4955	SFP+, BiDi, 10G Multirate 9.8-11.3Gbps, Tx/Rx=1490/1550nm, SM, 80km 22dB, LC
SO-SFP-10GE-BX80D-5549	SFP+, BiDi, 10G Multirate 9.8-11.3Gbps, Tx/Rx=1550/1490nm, SM, 80km 22dB, LC

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 100G4WDM-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.