

## SNR-XFP-SR Series

850nm XFP single-Mode Transceiver, With Diagnostic Monitoring

Duplex XFP Transceiver

RoHS 6 Compliant



### Features

- ◆ Fully compliant to XFP MSA Rev.4.5
- ◆ Supports 9.95Gb/s to 11.3Gb/s data rates
- ◆ Compliance to Fibre Channel 1200-M5-SN-I, 1200-M5E-SN-I, 1200-M6-SN-I at 10.51875Gbit/s
- ◆ Transmission distance up to 300m with OM3 MMF 82m with OM2 MMF 33m with OM1 MMF
- ◆ Low power consumption 1.5W(typ.)
- ◆ Wide operating temperature range: Standard: 0 to +70
- ◆ Laser Class 1M compliant
- ◆ Vertical Cavity Surface Emitting Laser at 850nm(VCSEL)
- ◆ LC duplex connector
- ◆ XFI loopback supported
- ◆ Lead free and RoHS Compliant
- ◆ Excellent EMI performance
- ◆ High reliability

### Ordering information

Part No.	Data Rate	Laser	Temp.	Distance	CDR	DDMI
SNR-XFP-SR* <small>Note1</small>	Up to 11.3Gbps	VCSEL 850nm	Standard	300m	Yes	YES

Note1: Standard version

## Regulatory Compliance

Product Certificate	Certificate Number	Applicable Standard
TUV	R50135086	EN 60950-1:2006+A11+A1+A12
		EN 60825-1:2007
		EN 60825-2:2004+A1+A2
UL	E317337	UL 60950-1
		CSA C22.2 No. 60950-1-07
EMC CE	AE 50135430 0001	EN 55022:2006
		EN 55024:1998+A1+A2
CB	JPTUV-024038-M1	IEC 60825-2
		IEC 60950-1
FCC	WTF13F0503735E	47 CFR PART 15 OCT., 2010
	WTF13F0503732E	47 CFR PART 15 OCT., 2010
FDA	1230816-000	CDRH 1040.10
ROHS	RLSZF00163462	2011/65/EU

## Product Description

The SNR-XFP-SR series single mode transceiver is small form factor pluggable module for duplex optical data communications of 10G. It is with the XFP 20-pin connector to allow hot plug capability.

This module is designed for multimode fiber and operates at a nominal wavelength of 850nm. The transmitter section uses a 850nm VCSEL, which is class 1 laser compliant according to International Safety Standard IEC-60825.

The receiver section uses an integrated InGaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

## Absolute Maximum Ratings<sup>\*note2</sup>

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	$T_s$	-40	+85	°C
Supply Voltage	$V_{CC}$	-0.5	3.6	V

\*Note2: Exceeding any one of these values may destroy the device permanently.

## Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Operating Case Temperature	$T_c$	0		+70	°C
Power Supply Voltage	$V_{CC}$	3.135	3.3	3.465	V
Power Supply Current	$I_{CC}$			600	mA
Surge Current	$I_{Surge}$			+30	mA
Baud Rate				11.3	Gbit/s

# SNR-XFP-SR

XFP SR series

## Performance Specifications - Electrical

Parameter	Symbol	Min.	Typ.	Max	Unit	Notes
<b>Transmitter</b>						
CML Inputs(Differential)	Vin	150		1200	mVpp	AC coupled inputs
Input Impedance (Differential)	Zin	85	100	115	ohms	Rin > 100 kohms @ DC
Tx_DISABLE Input Voltage - High		2		Vcc+0.3	V	
Tx_DISABLE Input Voltage - Low		0		0.8	V	
Tx_FAULT Output Voltage - High		2		Vcc+0.3	V	Io = 400µA; Host Vcc
Tx_FAULT Output Voltage - Low		0		0.5	V	Io = -4.0mA
<b>Receiver</b>						
CML Outputs (Differential)	Vout	350		700	mVpp	AC coupled outputs
Output Impedance (Differential)	Zout	85	100	115	ohms	
Rx_LOS Output Voltage - High		2		Vcc+0.3	V	Io = 400µA; Host Vcc
Rx_LOS Output Voltage - Low		0		0.8	V	Io = -4.0mA
MOD_DEF ( 2:0 )	VoH	2.5			V	With Serial ID
	VoL	0		0.5	V	

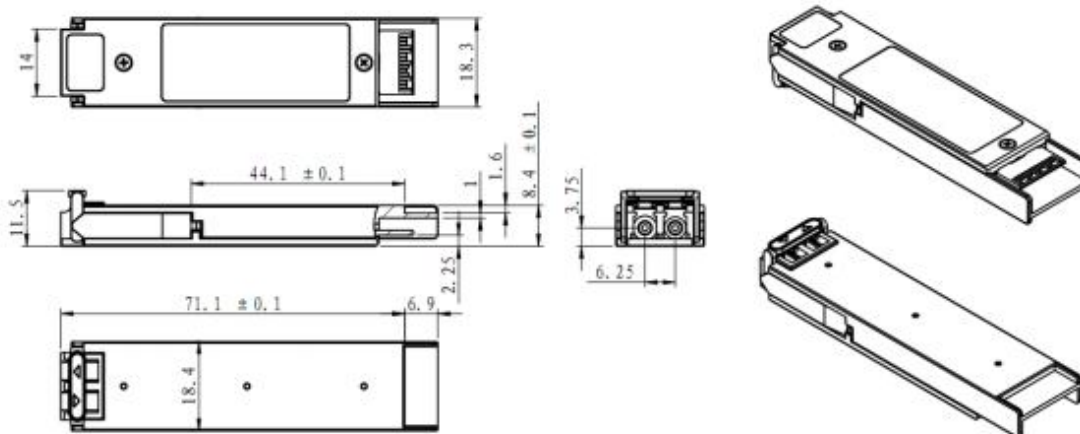
## Optical Transmitter

Parameter	Conditions	Symbol	Min	Typ	Max	Units
Nominal Wavelength		$\lambda_{TRP}$	840	850	860	nm
Spectral Width		$\Delta\lambda$		0.4	0.45	nm
Operating Range	62.5/125µm MMF, 160 MHz*km				26	m
	50/125µm MMF, 400 MHz*km				66	
	62.5/125µm MMF, 200 MHz*km				33	
	50/125µm MMF, 500 MHz*km				82	
	50/125µm MMF, 2000MHz*km				300	
Nominal Signalling Speed		$f_{OPT}$	9.95		11.3	Gbps
Average Launch Power		Po	-7.3	-2.6	-1	dBm
Extinction Ratio		ER	3.5	5.5		dB
Transmitter and Dispersion Penalty		TDP			3.9	Db
Relative Intensity Noise		RIN			-128	Db/Hz

## Optical Receiver

Parameter	Conditions	Symbol	Min	Typ	Max	Units
Center Wavelength		$\lambda_c$	840	850	860	nm
Receiver Sensitivity	BER $10^{-12}$ @ $2^{31} - 1^1$	$P_{IN}$		-13.5	-11.1	dBm
Receiver Sensitivity	in OMA				-11.1	
Stressed Receiver Sensitivity	in OMA	$P_{IN}$			-7.5	dBm
Saturation Input Power		$P_{SAT}$	1			dBm

## Mechanical Specifications\*



## Eye Safety

This single-mode transceiver is a Class 1 laser product. It complies with IEC-60825 and FDA 21 CFR 1040.10 and 1040.11. The transceiver must be operated within the specified temperature and voltage limits. The optical ports of the module shall be terminated with an optical connector or with a dust plug.

## GUARANTEE:



## CONTACT:

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