

SNR-CFP100-LR4-10

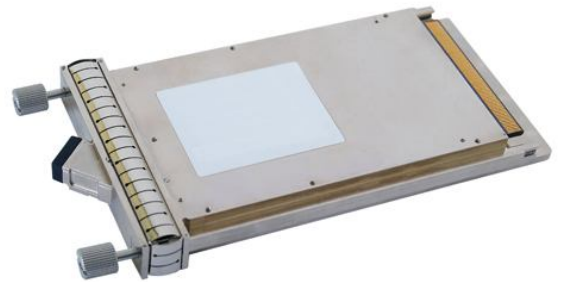
CFP 100G series

SNR-CFP100-LR4-10 Series

Single-Mode OTU4 4I1-9D1F CFP Transceiver
Single-Mode 100GBASE-LR4 CFP Transceiver
RoHS6 Compliant

Features

- ◆ Supports 103Gbps and 112Gbps aggregate bit rates
- ◆ Single 3.3V Power Supply and Power dissipation < 16W
- ◆ Up to 10km transmission on SMF
- ◆ Hot-Pluggable CFP Footprint Duplex LC Connector Interface
- ◆ Class 1 FDA and IEC60825-1 Laser Safety Compliant
- ◆ RoHS6 Compliant
- ◆ Operating Case Temperature Standard: 0°C~+70°C
- ◆ Compliant with CFP MSA Specification
- ◆ MDIO interface with integrated Digital Diagnostic Monitoring
- ◆ XLAUI electrical interface



Applications

- ◆ 100GBASE-LR4 Ethernet
- ◆ OTU4 4I1-9D1F

Ordering Information

Part No.	Data Rate	Fiber	Distance ^{*(note2)}	Interface	Temp.	DDMI
SNR-CFP100-LR4-10 ^{*(note1)}	103Gbps	SMF	10km	LC	Standard	Yes
SNR-CFP100-LR4-10-A	112Gbps	SMF	10km	LC	Standard	Yes

Note1: Standard version

Note2: 10km with 9/125µm SMF

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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

Absolute Maximum Ratings^{*note3}

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _s	-40	+85	°C
Supply Voltage	V _{cc}	-0.5	3.6	V
Operating Relative Humidity	RH	5	85	%

Note3: Exceeding any one of these values may destroy the device immediately.

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}		4000		mA

OTU4 411-9D1F Operation

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Signaling Speed per Lane	BR _{AVE}		27.95		Gbps
Lane_0 Center Wavelength	λ _{C0}	1294.53	1295.56	1296.59	nm
Lane_1 Center Wavelength	λ _{C1}	1299.02	1300.05	1301.09	nm
Lane_2 Center Wavelength	λ _{C2}	1303.54	1304.58	1305.63	nm

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Lane_3 Center Wavelength	λ_{C3}	1308.09	1309.14	1310.19	nm
Total Average Output Power ^{*(Note4)}	Po	-		8.9	dBm
Average Launch Power per Lane	Peach	-2.5		2.9	dBm
Side Mode Suppression Ratio	SMSR	30			dB
Optical Return Loss Tolerance				20	dB
Extinction Ratio ^{*(Note5)}	ER	7			dB
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3} ^{*(Note5)}		G.959.1 Compliant			
TX Disable Assert Time	t _{off}			100	us
Receiver					
Signaling Speed per Lane	BR _{AVE}		27.95		Gbps
Lane_0 Center Wavelength	λ_{C0}	1294.53	1295.56	1296.59	nm
Lane_1 Center Wavelength	λ_{C1}	1299.02	1300.05	1301.09	nm
Lane_2 Center Wavelength	λ_{C2}	1303.54	1304.58	1305.63	nm
Lane_3 Center Wavelength	λ_{C3}	1308.09	1309.14	1310.19	nm
Average Receive Power per Lane	Rpow	-8.8		2.9	dBm
Receive Sensitivity per Lane ^{*(Note7)}	Pmin			-10.3	dBm
Receiver Overload	Pmax	5.5			dBm
Optical Return Loss	ORL			-26	dB
LOS Assert	LOSA	-12.7			dBm
LOS De-Assert	LOSD			-10.7	dBm
LOS Hysteresis		0.5			dB

100GBASE-LR4 Operation

Parameter	Symbol	Min.	Typical	Max.	Unit
Transmitter					
Signaling Speed per Lane	BR _{AVE}		25.78		Gbps
Lane_0 Center Wavelength	λ_{C0}	1294.53	1295.56	1296.59	nm
Lane_1 Center Wavelength	λ_{C1}	1299.02	1300.05	1301.09	nm
Lane_2 Center Wavelength	λ_{C2}	1303.54	1304.58	1305.63	nm
Lane_3 Center Wavelength	λ_{C3}	1308.09	1309.14	1310.19	nm
Total Average Output Power ^{*(Note4)}	Po			10.5	dBm
Average Launch Power per Lane	Peach	-4.3		4.5	dBm
Side Mode Suppression Ratio	SMSR	30			dB
Optical Return Loss Tolerance				20	dB
Extinction Ratio ^{*(Note10)}	ER	4			dB
Transmitter eye mask definition {X1, X2, X3, Y1, Y2, Y3} ^{*(Note10)}		IEEE 802.3ba-2010 Compliant			
TX Disable Assert Time	t _{off}			100	us
Receiver					

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Signaling Speed per Lane	BR _{AVE}		25.78		Gbps
Lane_0 Center Wavelength	λ_{C0}	1294.53	1295.56	1296.59	nm
Lane_1 Center Wavelength	λ_{C1}	1299.02	1300.05	1301.09	nm
Lane_2 Center Wavelength	λ_{C2}	1303.54	1304.58	1305.63	nm
Lane_3 Center Wavelength	λ_{C3}	1308.09	1309.14	1310.19	nm
Average Receive Power per Lane	Rpow	-10.6		4.5	dBm
Receive Sensitivity in OMA per Lane ^{*(Note7)}	Pmin			-8.6	dBm
Receiver Overload	Pmax	5.5			dBm
Optical Return Loss	ORL			-26	dB
LOS Assert	LOSA	-13.6			dBm
LOS De-Assert	LOSD			-11.6	dBm
LOS Hysteresis ^{*(Note9)}		0.5			dB

Note4: Output is coupled into a 9/125 μ m single-mode fiber.

Note5: Filtered, measured with a PRBS 2³¹-1 test pattern @27.95Gbps

Note6: High speed I/O, internally AC coupled.

Note7: Minimum average optical power measured at BER less than 1E-12, with a 2³¹-1 PRBS.

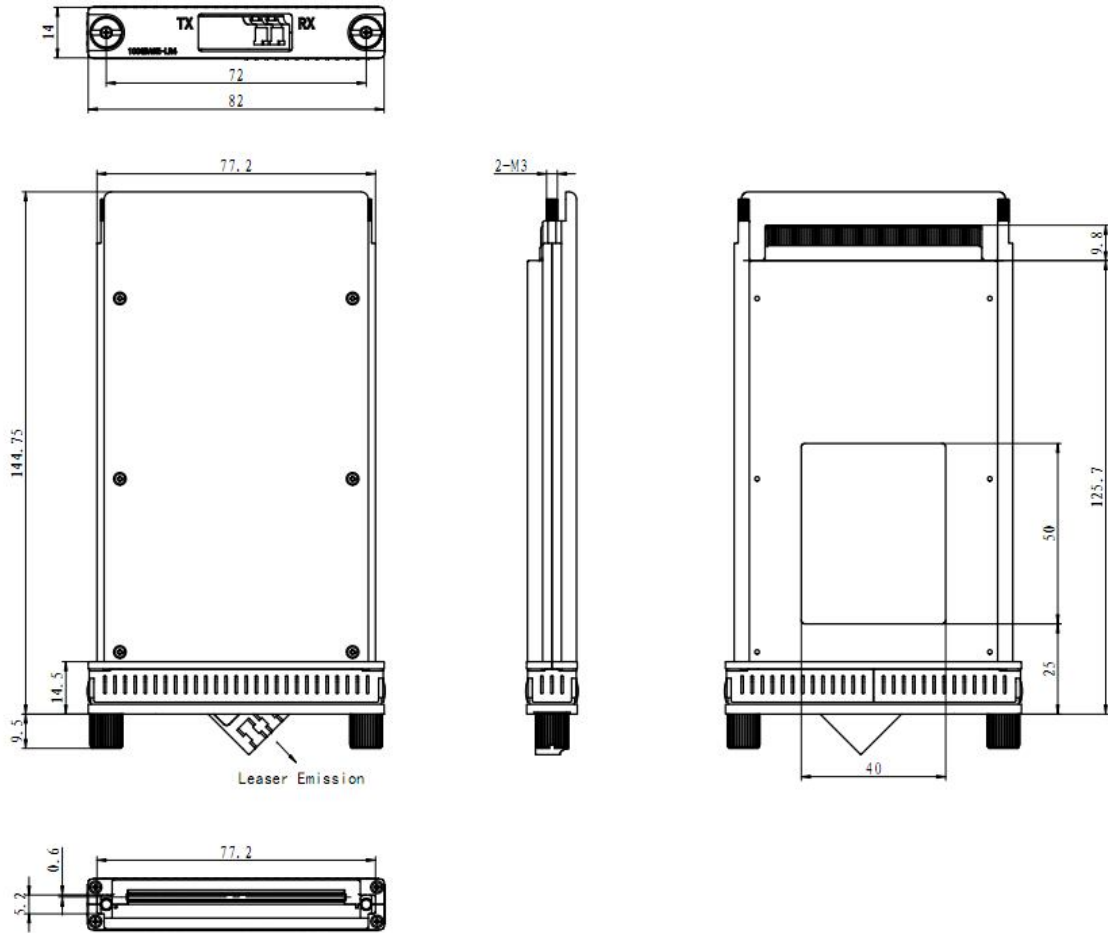
Note8: Eye Pattern Mask

Note9: LOS Hysteresis

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Mechanical Specifications



GUARANTEE:



CONTACT:

Address: Building 56/2, Predelnaya Street, Yekaterinburg, Russia

Tel: +7(343) 379-98-38

Fax: +7(343) 379-98-38

E-mail: info@nag.ru

Online shop: <http://shop.nag.ru>