

## SNR-X2-SFP+

Converter Module converts a 10 Gigabit Ethernet X2 port into a 10 Gigabit Ethernet SFP+ port. With this Converter Module, customers have the flexibility to use the 10 Gigabit X2 interface port of a switch with X2 modules or SFP+ modules. This flexibility is critical when the specific type of interface is not available in one or the other form factor or when customers want to use the same form factor for interfaces across multiple platforms deployed in their network.

### Features

- ◆ Support all SFP+ modules
- ◆ Compatible with X2 MSA Rev.2.0b
- ◆ Hot-pluggable
- ◆ I/O Connector designed for high speed differential signal application
- ◆ Improved Pluggable FormFactor(IPF) compliant for enhanced EMI/EMC performance
  
- ◆ Lower Power Consumption < 0.5W
- ◆ Compatible to SFP+ MSA
- ◆ Temperature Range: 0~ 70°C
- ◆ RoHS6 Compatible



### Applications

- ◆ Ethernet
- ◆ Networking
- ◆ Data center cabling infrastructure
- ◆ Hubs, switches, routers, servers, NICs

### Order Information

Part No.	Data Rate	Temperature	DDM
SNR-X2-SFP+	Up to 10.5G	Standard	YES

## Regulatory Compliance

Feature	Standard	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883G Method 3015.7	Class 1C (>1000 V)
Electrostatic Discharge to the enclosure	EN 55024:1998+A1+A2 IEC-61000-4-2 GR-1089-CORE	Compatible with standards
Electromagnetic Interference (EMI)	FCC Part 15 Class B EN55022:2006 CISPR 22B :2006 VCCI Class B	Compatible with standards Noise frequency range: 30MHz to 6GHz. Good system EMI design practice required to achieve Class B margins. System margins are dependent on customer host board and chassis design.
Immunity	EN 55024:1998+A1+A2 IEC 61000-4-3	Compatible with standards. 1 KHz sine-wave, 80% AM, from 80MHz to 1 GHz. No effect on transmitter/receiver performance is detectable between these limits.
Component Recognition	UL and CUL EN60950-1:2006	UL file E317337 TQV Certificate No. 50135086 (CB scheme )
RoHS6	2002/95/EC 4.1&4.2 2005/747/EC 5&7&13	Compliant with standards* <sup>note3</sup>

Note2: For update of the equipments and strict control of raw materials, NAG has the ability to supply the customized products since Jan 1th, 2007, which meet the requirements of RoHS6 (Restrictions on use of certain Hazardous Substances) of European Union.

In light of item 5 in RoHS exemption list of RoHS Directive 2002/95/EC, Item 5: Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.

In light of item 13 in RoHS exemption list of RoHS Directive 2005/747/EC, Item13: Lead and cadmium in optical and filter glass. The three exemptions are being concerned for NAG transceivers, because NAG's transceivers use glass, which may contain Pb, for components such as lenses, windows, isolators, and other electronic components.

## Product Description

SNR-X2-SFP+ Assemblies modules are based on the X2 Multi Source Agreement (MSA). It is compliant with the Ethernet and Fiber Channel standards.

## Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Units
Maximum Supply Voltage	V <sub>cc</sub>	-0.5		4.0	V
Storage Temperature	T <sub>s</sub>	-40		85	°C

# SNR-X2-SFP+

Modules X2 series

## Normal operating condition

Parameter	Symbol	Min	Typ	Max	Units	Ref.
Operating Case Temperature	Top	0		70	°C	
Supply Voltage	Vcc	3.14	3.3	3.46	V	
Power Consumption	P	0.5			W	

## MDIO Interface

DC Characteristics

Characteristic	Condition	Sym	Minimum	Maximum	Unit
Input high voltage		V <sub>H</sub>	0.84	1.5	V
Input low voltage		V <sub>L</sub>	-0.3	0.36	V
MDIO Input current	MMD Driver in tri-state	I <sub>MDIO</sub>	-10	8	pA
MDC Input current		I <sub>MDC</sub>	-5	5	pA
Output low voltage	I <sub>OL</sub> = 100pA	V <sub>QL</sub>	-0.3		V
	I <sub>OL</sub> = 4mA	V <sub>QL</sub>		0.2	V
Output high voltage	RPULL-Up = 357Ω ±1% VPULL-Up = 1.14~1.5V	V <sub>QH</sub>	1.136	1.5	V
Output low current	V <sub>I</sub> = 0.2V	I <sub>QL</sub>	4		mA
MDIO Input capacitance	V <sub>I</sub> = 0~1.5V	C <sub>in</sub>		10	pF

## GUARANTEE:



## CONTACT:

**Address:** Building 57/2, Predelnaya Street, Yekaterinburg, Russia

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

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

**E-mail:** [info@nag.ru](mailto:info@nag.ru)

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