

SNR-SFP-W43-GEPON-B+ Series

OLT for IEEE 802.3ah-2004 PX-20+
 Single Fiber Bi-Directional Transceiver
 1.25Gbps Downstream and 1.25Gbps Upstream
 RoHS6 Compliant

Features

- ◆ SFP Package with SC connector
- ◆ 1.25Gbps, 1310nm BM APD Receiver
- ◆ 1.25Gbps, 1490nm Transmitter
- ◆ Compliant With IEEE 802.3ah-2004
- ◆ Up to 20km distance at 9/125μm G.652 SMF
- ◆ BM Rx with Settling Time less than 400ns
- ◆ Operating Case Temperature

Commercial: 0°C~+70°C



Applications

- ◆ EPON 20km OLT Side
- ◆ Access Networks
- ◆ Fiber to the Home, Curb, Office (FTTx)

Ordering information

Part No.	Input/Output	Rx Signal Indicator	JAM	DDM	BM Digital RSSI	Interface	Temp.
SNR-SFP-W43-GEPO N-B+	AC/DC	LOS	YES	YES	NO	SC	0~70°C
SNR-SFP-W43-GEPO N-B+-DB	AC/DC	LOS	NO	YES	NO	SC	0~70°C
SNR-SFP-W43-GEPO N-B+DE	AC/DC	LOS	YES	YES	YES	SC	0~70°C
SNR-SFP-W43-GEPO N-B+DG	AC/DC	LOS	NO	YES	YES	SC	0~70°C

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: 30 MHz to 6 GHz. 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. 1kHz sine-wave, 80% AM, from 80 MHz to 1 GHz. No effect on transmitter/receiver performance is detectable between these limits.
Laser Eye Safety	FDA 21CFR 1040.10 and 1040.11 EN (IEC) 60825-1:2007 EN (IEC) 60825-2:2004+A1	CDRH compliant and Class I laser product. TüV Certificate No. 50135086
Component Recognition	UL and CUL EN60950-1:2006	UL file E317337 TüV Certificate No. 50135086 (CB scheme)
RoHS6	2002/95/EC 4.1&4.2 2005/747/EC 5&7&13	Compliant with standards ^{*note2}

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's transceivers, because NAG's transceivers use glass, which may contain Pb, for components such as lenses, windows, isolators, and other electronic components.

Product Description

NAG's high performance EPON OLT transceiver module is designed for Passive Optical Network application, 1.25Gbps downstream and 1.25Gbps upstream. It is fully compliant with IEEE 802.3ah-2004.

The EPON OLT transceiver is packaged of small form factor pluggable with SC connector. The digital diagnostic monitoring function is fully compliant with SFP MSA.

The module consists of 1490nm DFB Laser, APD detector and WDM filter in a high-integrated optical sub-assembly. It transmits 1.25Gbps at 1490nm, and receives 1.25Gbps at 1310nm in burst mode.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _s	-40	+85	°C
Supply Voltage	V _{CC}	0	4.0	V
Operating Relative Humidity		5	95	%

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

Recommended Operating Conditions

Parameter	Symbol	Min.	Typical	Max.	Unit
Power Supply Voltage	V _{CC}	3.13	3.3	3.47	V
Power Supply Current	I _{CC}			300	mA
Operating Temperature	T _c	0		+70	°C
Relative Humidity	RH	5		95	%
Date Rate	Upstream/Downstream		1.25/1.25		Gbps

Performance Specifications - Electrical

Parameter	Symbol	Min.	Typ	Max	Unit	Notes
Transmitter						
LVPECL Compatible Inputs(Differential)	V _{in}	200		1600	mVpp	AC coupled internally
Power Supply Current	I _{CC_Tx}			200	mA	
Input Impedance (Differential)	Z _{in}	90	100	110	ohms	R _{in} > 100 kohms @ DC
Tx Disable		2		V _{CC}	V	
Tx Enable		0		0.8		
Tx Fault_High		2.4		V _{CC}	V	
Tx Fault_Normal		0		0.4		
Receiver						

SNR-SFP-W43-GEAPON-B+

SFP GEAPON series

LVPECL Outputs (Differential)	Vout	400		1600	mVpp	DC coupled outputs
Power Supply Current	I _{CC_Rx}			150	mA	
Rx_LOS	High		2	Vcc	V	
	Low		0	0.8	V	

Performance Specifications - Optical

Parameter	Symbol	Min.	Typical	Max.	Unit
9µm Core Diameter SMF			20		km
Date Rate (Upstream/Downstream)			1.25/1.25		Gbps
Transmitter					
Centre Wavelength	λ_c	1480	1490	1500	nm
Spectral Width (-20dB)	$\Delta\lambda$			1	nm
Side Mode Suppression Ratio	SMSRR	30			dB
Average Output Power ^{*(note3)}	P _{out}	2.5		7	dBm
Extinction Ratio ^{*(note4)}	ER	9			dB
Tolerance to Tx back reflection		-15			dB
Rise/Fall Time(20%~80%) ^{*(note4)(note5)}	tr/tf			160	ps
Output Optical Eye ^{*(note4)(note6)}	IEEE 802.3ah Compliant				
Optical Output Power with TX OFF	P _{off}			-40	dBm
Receiver					
Centre Wavelength	λ_c	1260	1310	1360	nm
Receiver Sensitivity ^{*(note7)}	P _{min}			-30	dBm
Receiver Overload ^{*(note7)}	P _{max}	-6			dBm
Receiver Burst-Mode Dynamic Range ^{*(note8)}		15	20		dB
Receiver Reflectance	CR			-20	dB
LOSS Assert Level	LOSA	-44			dBm
LOSS De-Assert Level	LOSD			-32	dBm
Signal Detect Hysteresis ^{*(note9)}		0.5		6	dB
Receiver Settling Time	T _s			400	ns
Damage Threshold for Receiver	P _{in, damage}	3			dBm
Maximum Receiver Reflectance	R _{x_r}			-20	dB

Note3: Measured with 9/125µm G.652 SMF.

Note4: Filtered, Measured with PRBS2⁷-1 test pattern @1.25Gbps.

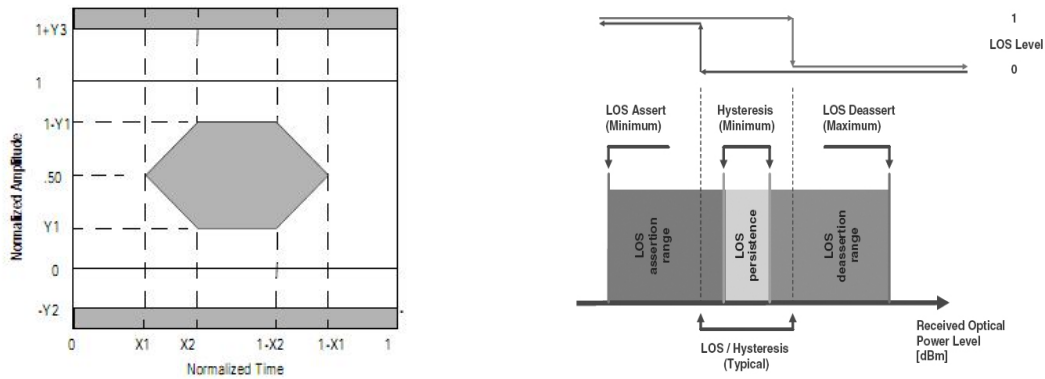
Note5: Measured with the Bessel-Thompson filter OFF.

Note 7: Measured with a PRBS 2⁷-1 test pattern @1.25Gbps, BER 1X10⁻¹².

Note 8: The input power difference between two subsequent high and low burst data.

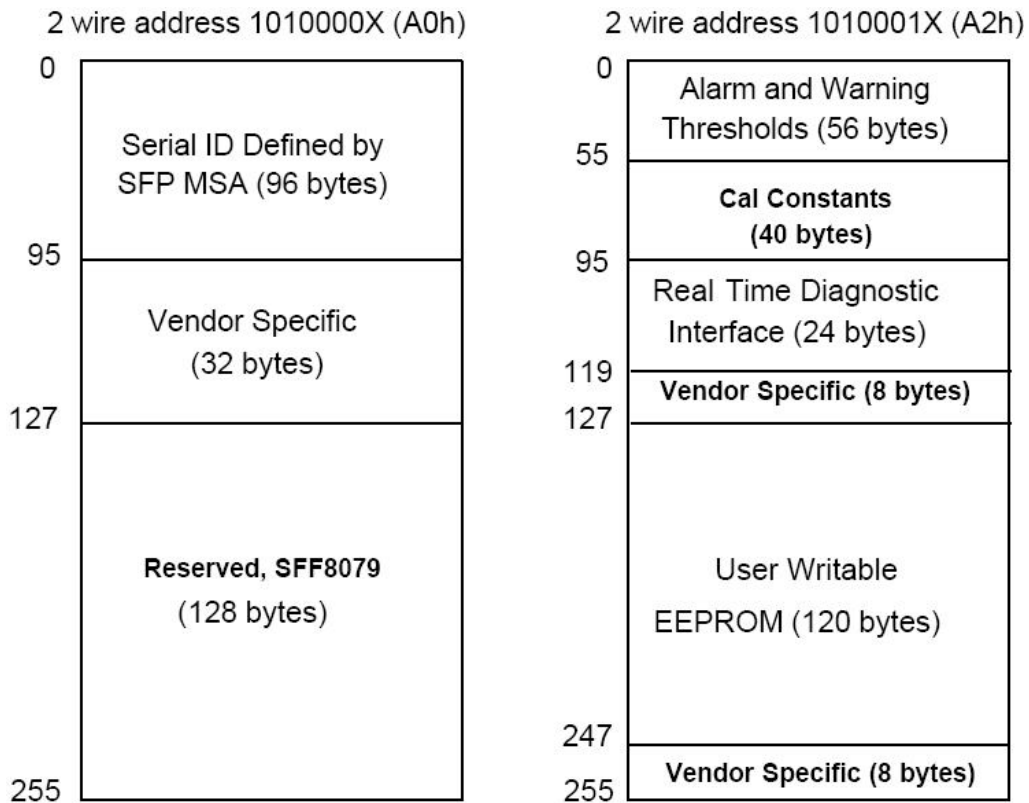
Note6: Eye pattern mask

Note9: LOS Hysteresis

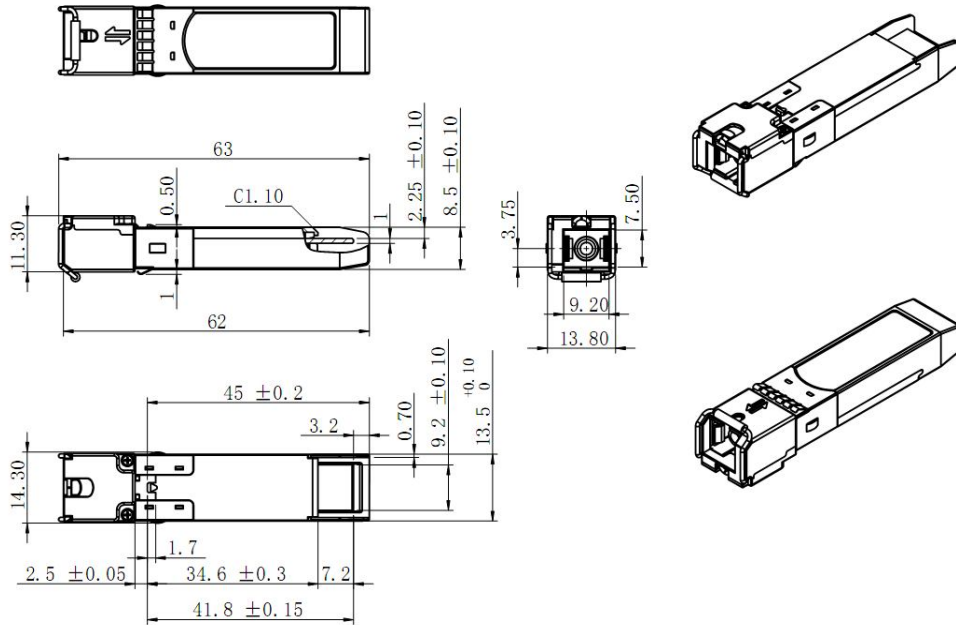


Digital Diagnostic Interface

The memory map in the following describes an extension to the memory map defined in SFP-8472. The enhanced interface uses the two wire serial bus address 1010001X (A2h) to provide diagnostic information about the module's present operating conditions.



Mechanical Specifications



GUARANTEE:



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