

GPON OLT SFP 1490nm-TX/1310nm-RX 2.5G-TX/1.25G-RX Class B+ 20km SC SMF Transceiver

GSFP-43-20B



Features

- Compliant with ITU-T G.984.2 GPON OLT B+/C+/C++/D application
- Single fiber bi-directional data links with symmetric 2.488Gbps Tx and 1.244Gbps Rx
- 1490nm continuous-mode transmitter with DFB LD
- 1310nm burst-mode receiver with APD-TIA
- 2-wire interface for integrated digital diagnostic monitoring
- Receiver RESET, Signal Detect, RSSI function indication (RESET, RX_SD, RSSI)
- SFP package with SC/UPC receptacle optical interface
- Single +3.3V power supply
- Operation case temperature: 0~70°C for Commercial temperature, and -40~85°C for Industrial temperature
- RoHS compliant

Products Specifications

I. Recommended Operating Conditions

Parameter	Unit	Min.	Typical	Max.	Notes
Storage Temperature	°C	-40		85	
Operating Case Temp	°C	0		70	Ctemp
Operating Case Temp	°C	-40		85	Itemp
Operating Relative Humidity	%	5		85	
Storage Relative Humidity	%	5		90	
Power Supply Voltage	V	3.135	3.3	3.465	
Power Supply Current	mA			500	
Bit Rate for Tx	Gbps		2.488		
Bit Rate for Rx	Gbps		1.244		

II. Optical Characteristics

All performance is specified at whole working temperature and conditions

Parameter	Unit	Min.	Typical	Max.	Notes
Transmitter					
TX Central Wavelength	nm	1480	1490	1500	
Spectral Width(-20dB)	nm			1	
Side Mode Suppression Ratio	dB	30			

Parameter	Unit	Min.	Typical	Max.	Notes
Mean Launched Power(B+)	dBm	1.5		5	
Mean Launched Power(C+)	dBm	3		7	
Mean Launched Power(C++)	dBm	4.5		10	
Mean Launched Power(D)	dBm	6		10	
Mean Launched Power (TX Off)	dBm			-45	
Extinction Ratio	dB	8.2			
Optical Return Loss Tolerance	dB	-15			
Transmitter and dispersion Penalty	dB			1	

Transmitter Mask(PRBS2²³-1@2.488G)

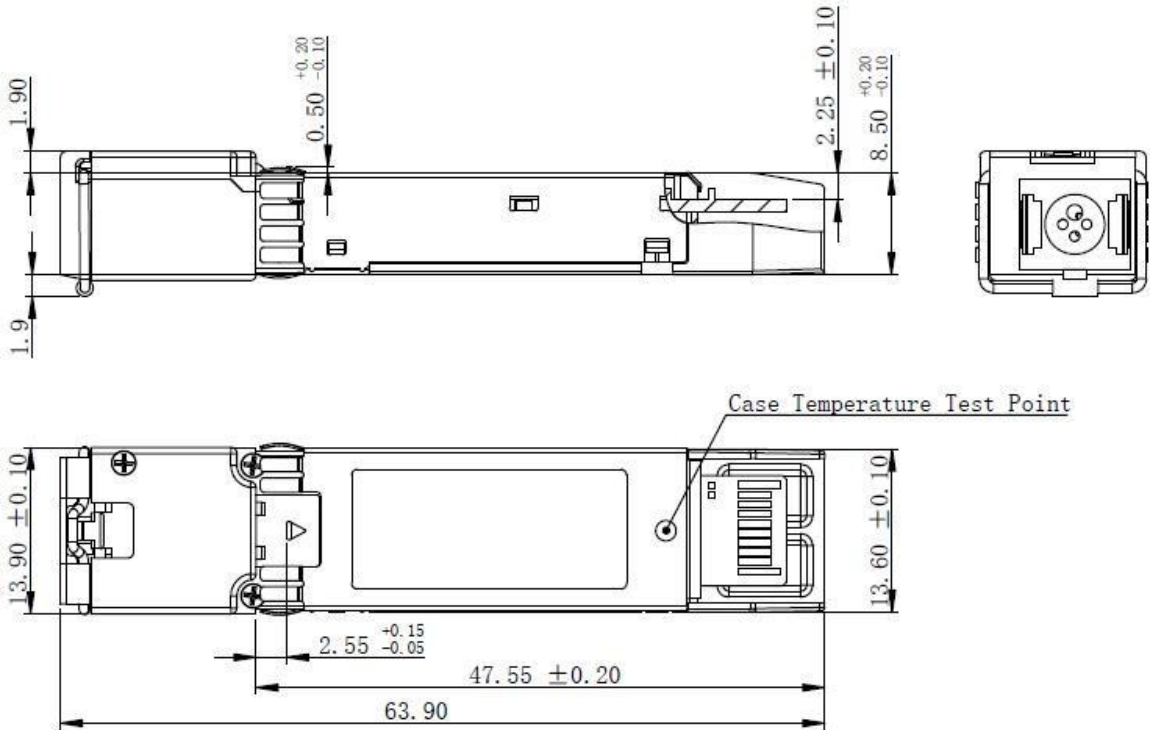
Compliant With ITU-T G.984.2

Receiver

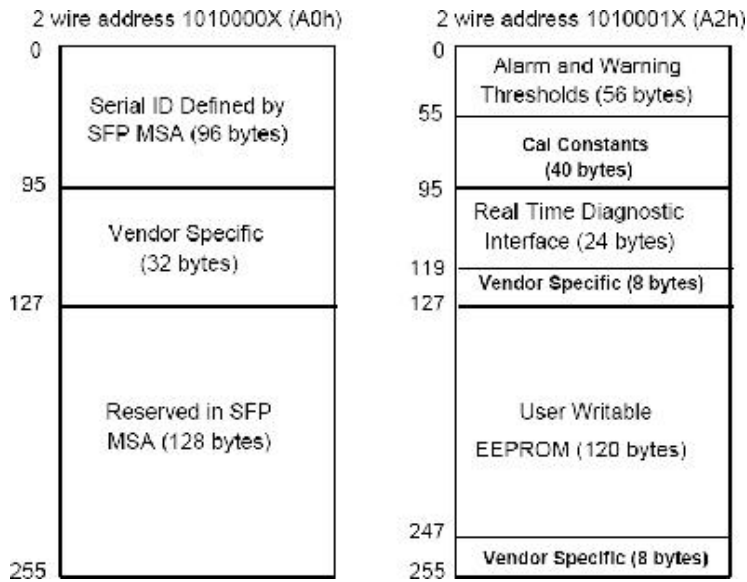
Receive Wavelength	nm	1290	1310	1330	
Sensitivity(B+) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm			-28	
Sensitivity(C+) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm			-30	
Sensitivity(C+) (PRBS223-1@1.244G,ER=10,BER<10-4)	dBm			-32	
Sensitivity(D) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm			-33	
Sensitivity(D) (PRBS223-1@1.244G,ER=10,BER<10-4)	dBm			-35	
Overload(B+) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm	-8			

Parameter	Unit	Min.	Typical	Max.	Notes
Overload(C+) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm	-12			
Overload(C++) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm	-12			
Overload(D) (PRBS223-1@1.244G,ER=10,BER<10-10)	dBm	-15			
Receiver Burst Mode Dynamic Range	dB	15			
SD Assert Level	dBm			-33	
SD De-assert Level	dBm	-45			
SD Hysteresis	dB	0.5		6	
WDM Filter isolationto 1550nm	dB	38			
WDM Filter isolationto 1650nm	dB	35			
Electrical Interface Characteristics					
Data Input Swing Differential/TX	mV	600	-	1600	
Data Output Swing Differential/RX	mV	400		1600	
Data Differential Impedance	Ω	90	100	110	
LVTTL Output High	V	2.4		V _{cc}	
LVTTL Output Low	V	0		0.4	
LVTTL Input High	V	2.0		V _{cc} +0.3	
LVTTL Input Low	V	0		0.8	
Timing Characteristics					
RSSI Trigger Delay(Ttd)	ns	25			
RSSI Trigger Pulse Width(Tw)	ns	500			
Internal I2C Delay(Twait)	us			500	

III. Diagram Mechanical Drawing



IV. EEPROM Information



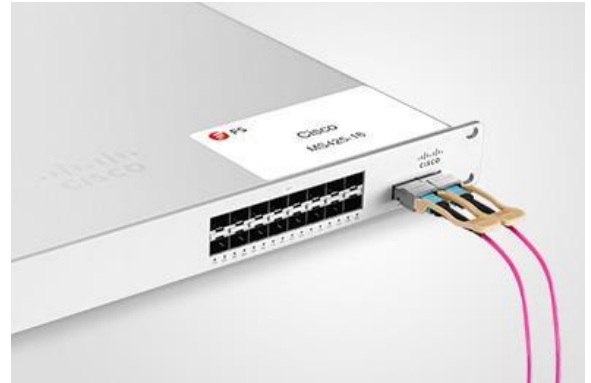
Test Center

I. Compatibility Testing

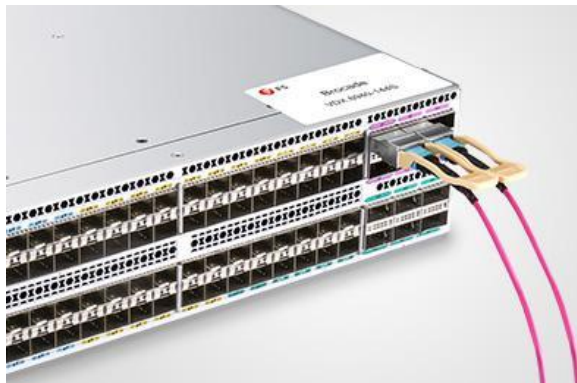
Each fiber optical transceiver has been tested in host device on site in FS Assured Program to ensure full compatibility with over 200 vendors.



Cisco Catalyst C9500-24Y4C



Cisco MS425-16



Brocade VDX 6940-144S



Dell EMC Networking Z9100-ON



Force10 S60-44T

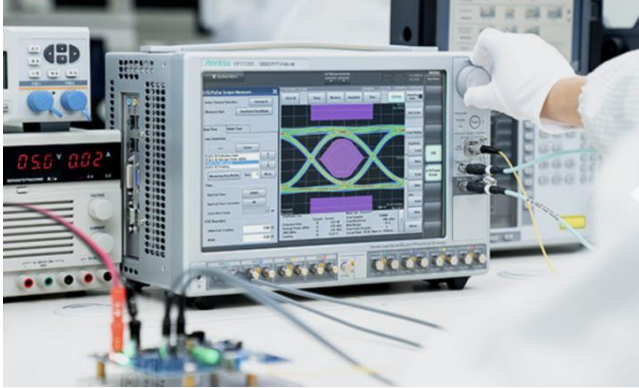


HUAWEI S6720-30L-HI-24S

Above is part of our test bed network equipment. For more information, please click the [Test Bed](#) PDF. It will be updated in real time as we expand our portfolio.

II. Performance Testing

Each fiber optical transceiver has been fully tested in FS Assured Program equipped with world's most advanced analytical equipment to ensure that our transceivers work perfectly on your device.



1. TX/RX Signal Quality Testing

Equipped with the all-in-one tester integrated 4ch BERT & sampling oscilloscope, and variable optical attenuator to ensure the input and output signal quality.

- Eye Pattern Measurements: jitter, Mask Margin, etc
- Average Output Power
- OMA
- Extinction Ratio
- Receiver Sensitivity
- BER Curve

2. Reliability and Stability Testing

Subject the transceivers to dramatic changes in temperature on the thermal shock chamber to ensure reliability and stability of the transceivers.

- Commercial: 0 °C to 70 °C
- Extended: -5 °C to 85 °C
- Industrial: -40 °C to 85 °C



3. Transfer Rate and Protocol Testing

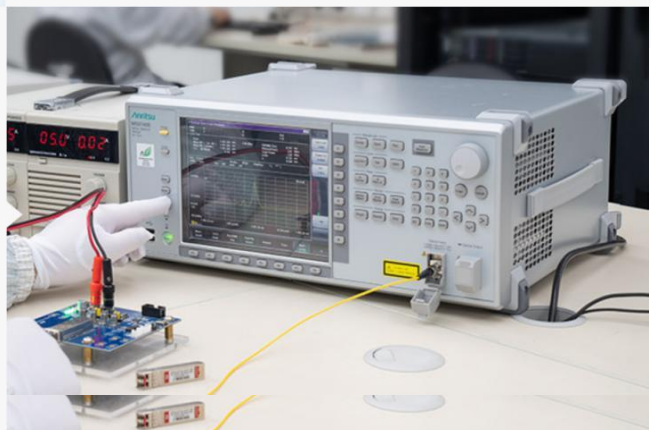
Test the actual transfer data rate and the transmission ability under different protocols with Network Master Pro.

- Ethernet
- Fibre Channel
- SDH/SONET
- CPRI

4. Optical Spectrum Evaluation

Evaluate various important parameters with the Optical Spectrum Analyzer to meet the industry standards.

- Center Wavelength, Level
- OSNR
- SMSR
- Spectrum Width



Order Information

Part Number	Description
GSFP-43-20B	2.5G-TX/1.25G-RX GPON Transceiver Module (SMF, 1490nm-TX/1310nm-RX, 20km, SC)
GSFP-43-20C	2.5G-TX/1.25G-RX GPON Transceiver Module (SMF, 1490nm-TX/1310nm-RX, 20km, SC)
GPON-ONU-34-20BI	1.25GTx/2.5GRx GPON Stick with MAC (SMF, 1310nmTx/1490nmRx, 20km, SC/APC, Industrial, DDM)
ESFP-43-20	1.25G EPON Transceiver Transceiver Module (SMF, 1490nm-TX/1310nm-RX, 20km, SC)



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