

Rev	Date	Modified by	Description
A0	2023		

Product Specifications

GPON Class C+++ SFP OLT Transceiver

PN: EGP4321-3SCDCE2x

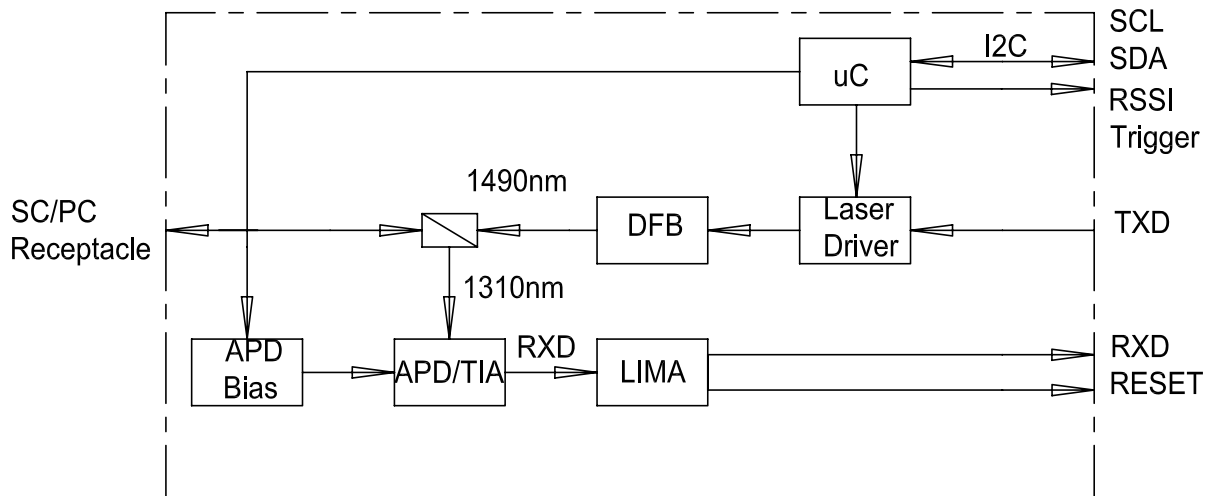
Features

- SFP with SC/PC Connector Transceiver
- 1490 nm DFB Tx with isolator
- 1310 nm APD Rx
- Digital diagnostics SFF-8472 Compliant
- 2488 Mbps continuous mode Transmission
- 1244 Mbps Burst mode receiver Data Rate
- RX Fast Burst Mode Detection
- Provide fast RSSI function
- Operation case temperature: 0~70° C
- Class C+++ link budget
- Comply with ITU-T G984.2 Amendment 1
- Complies with RoHS directive (2002/95/EC)

Application

- GPON OLT Class C+++
- FTTx

Function Diagram



Recommended Operating Conditions

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	T _{STG}	-40	85	°C
Operating Case Temperature	T _C	0	70	°C
Power Supply Voltage	V _{CC}	3.1	3.5	V
Total Power Supply Current	I _{CC}	-	600	mA

Transmitter Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Optical Transmitter Power	P _O	9	-	11	dBm	1
Optical Transmitter Power off	P _{OFF}	-	-	-39	dBm	
Output Center Wavelength	λ	1480	-	1500	nm	
Output Spectrum Width	Δλ	-	-	1.0	nm	
Side Mode Suppression Ratio	SMSR	30	-	-	dB	
Extinction Ratio	ER	8.2	-	-	dB	
Optical Rise Time	-	-	-	160	ps	
Optical Fall Time	-	-	-	160	ps	

Optical Eye Diagram	Compliant with ITU-T G.984.2 Mask					
Tolerance to Tx Back Reflection	-	-15	-	-	dB	
Data Rate	-	-	2.488	-	Gb/s	
Differential Input Voltage	V _{PP}	300	-	1200	mV	
Differential Input Impedance	Z _{IN}	80	100	120	ohm	
Tx_fault Output Voltage- High	V _{IH}	2.4	-	-	V	
Tx_fault Output Voltage- Low	V _{IL}	-	-	0.4	V	
Tx_Dis Input Voltage- High	V _{IH}	2.0	-	-	V	
Tx_Dis Input Voltage- Low	V _{IL}	-	-	0.8	V	

Note 1: 2.488Gbps continuous-mode , PRBS²³-1.

Receiver Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Wavelength of Operation	-	1260	-	1360	nm	-
Data Rate	-	-	1.244	-	Gb/s	-
Sensitivity	Sen	-	-	-32	dBm	1
Saturation Optical Power	Sat	-12	-	-	dBm	1
Burst Packet Detect sensitivity	-	-	-	-32	dBm	1
Receiver Reflectance	-	-	-	-12	dB	
Receiver Burst-mode Dynamic Range	-	15	-	-	dB	2
Data Output Voltage - High	V _{OH}	V _{ccR} -1.05	-	V _{ccR} -0.85	V	-
Data Output Voltage - Low	V _{OL}	V _{ccR} -1.84	-	V _{ccR} -1.60	V	-
Data Output Differential Swing	-	400	-	1600	mV	
RSSI accuracy	-	-3	-	3	dB	3
BPD Output Voltage- High	V _{IH}	2.4	-	-	V	4
BPD Output Voltage- Low	V _{IL}	-	-	0.4	V	4
Guard Time	T _{GUARD}	-	32	-	bits	-
Rest Width	T _{RESET}		16	-	bits	

Reset-Low		0		0.8	V	
Reset-High		2.0		Vcc	V	
Receiver Amplitude Recovery Time	T _{RECOVERY}	-	24	32	bits	
Signal Detect De-Assert Time				12.8	ns	
Signal Detect Assert Time				50	ns	
Optical Signal During Time	T _{ONT} EN_DUR	525	-	-	ns	5
RSSI Trigger Delay	T _D	25	-	-	ns	6
RSSI Trigger Width	T _W	500	-	-	ns	

Note 1: Measured with 1310nm, 1.244Gbps PRBS2²³-1 burst-mode optical input, ER= 10dB, BER= 1x10⁻⁴(PRE-FEC); Single burst packet length is 40us and packet interval is 40us.

Note 2: Input optical power level difference of adjacent burst packets.

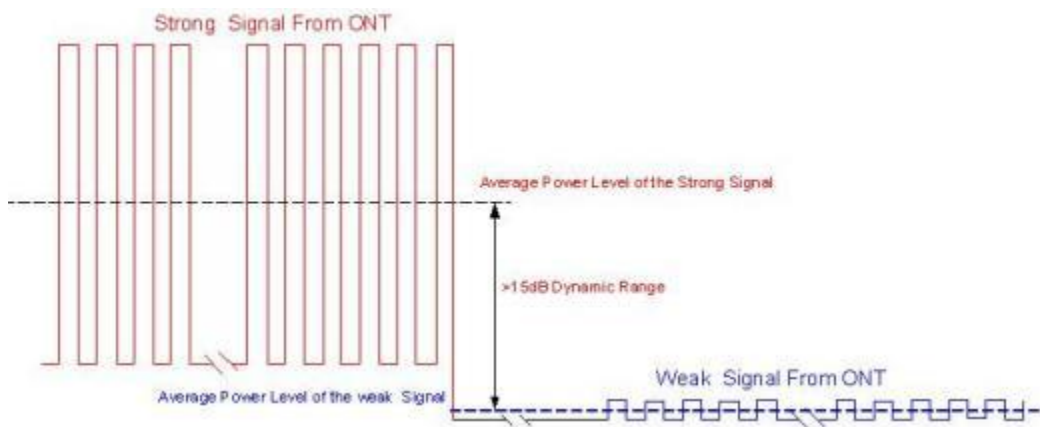
Note 3: Receiver optical power ranged from -8dBm to -28dBm, measured with 1310nm, 1.244Gbps PRBS2⁷-1 burst-mode optical input, ER= 10dB, 50% duty cycle.

Note 4: BPD assert low when module receive "Reset" signal, assert high when burst package is detected and latch to high state until next "Reset" signal.

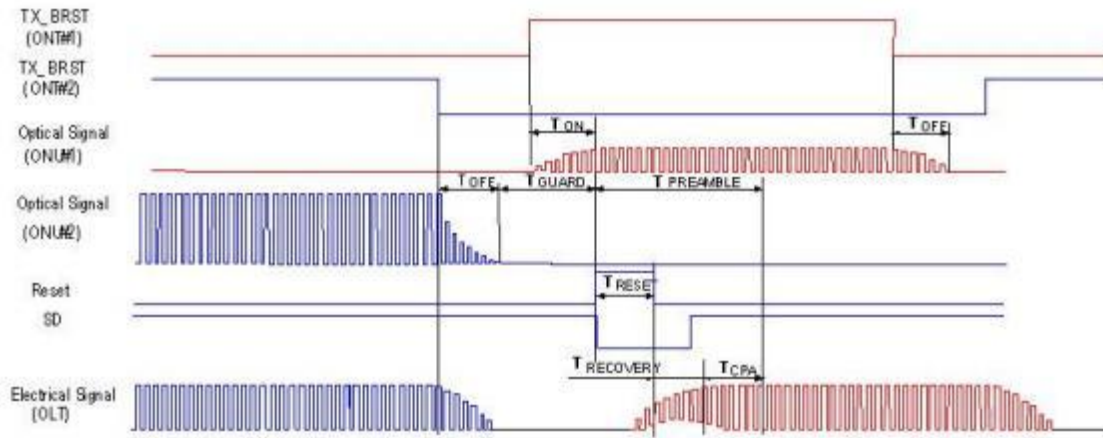
Note 5: For RSSI Measurement

Note 6: Refer to first bit of the preamble

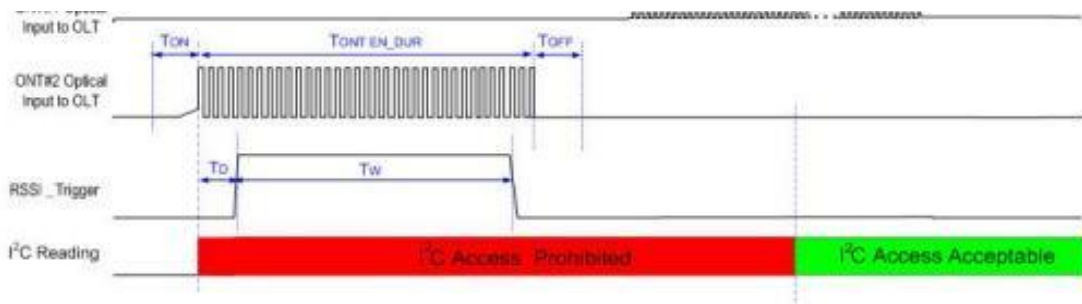
Burst Mode Receiver Dynamic Range



Timing Parameter Definitions in Burst Mode Sequence



RSSI Timing Sequence



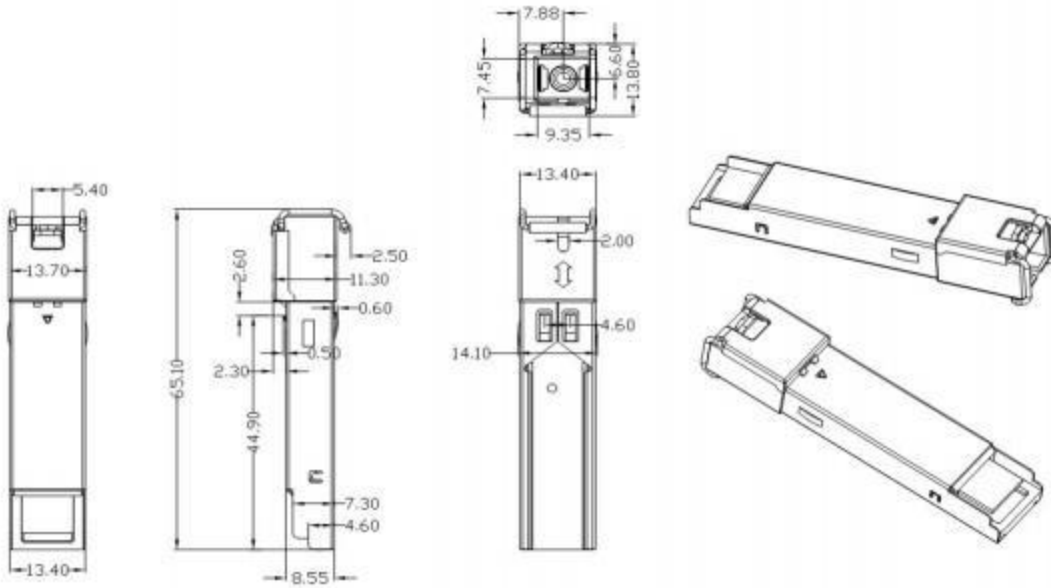
Digital Diagnostic Monitoring Accuracy

Parameter	Accuracy	Units	Notes
Transceiver Temperature	±3	°C	Temperature sensor
Power Supply Voltage	±3	%	V _{CC} =3.13~3.47V
TX Bias Current	±10	mA	
TX Optical Power	±3	dB	Average Power
Rx Power	±3	dB	

Pin Definitions

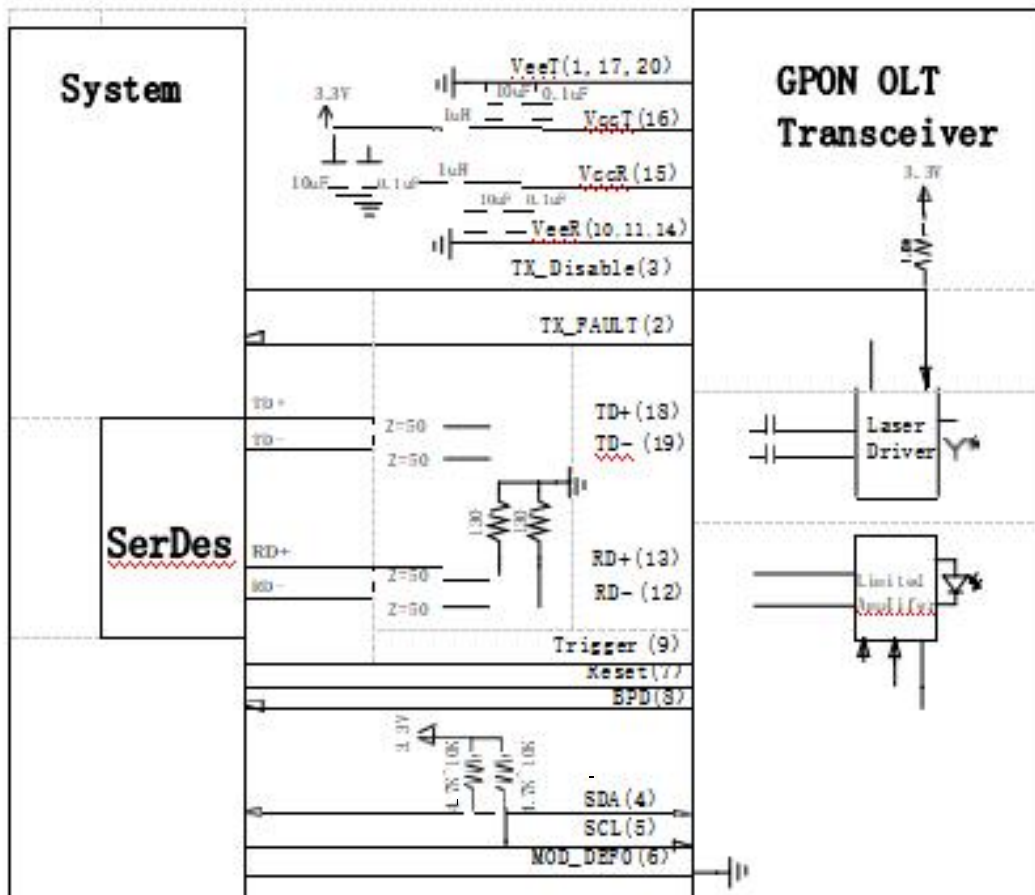
Pin#	Name	Function
1	VeeT	Transmitter Ground
2	TX_Fault	Transmitter Fault Indication, LVTTTL Output, Active High
3	TX_Disable	Transmitter Disable, LVTTTL Input. Optical output power is off when this PIN is high or left unconnected.
4	SDA	I2C Data
5	SCL	I2C Clock
6	MOD-DEF(0)	Internally grounded
7	Reset	Receiver Reset , LVTTTL Input. Set "Reset" high at the end of previous burst, 2 bytes in duration
8	BPD	Burst Packet Detect, LVTTTL output. BPD assert low when module receives "reset" signal, assert high when incoming burst is present.
9	RSSI_Trigger	RSSI Trigger Signal from Host, LVTTTL input.
10	VeeR	Receiver Ground
11	VeeR	Receiver Ground
12	RD-	Inv. Received Data Out, LVPECL,DC coupled
13	RD+	Received Data Out, LVPECL,DC coupled
14	VeeR	Receiver Ground
15	VccR	Receiver Power
16	VccT	Transmitter Power
17	VeeT	Transmitter Ground
18	TD+	Transmit Data In, LVPECL or CML (AC coupled; internally 100 ohms differential termination)
19	TD-	Inv. Transmit Data In, LVPECL or CML (AC coupled; internally 100 ohms differential termination)
20	VeeT	Transmitter Ground

Outline Drawing



Unit:mm

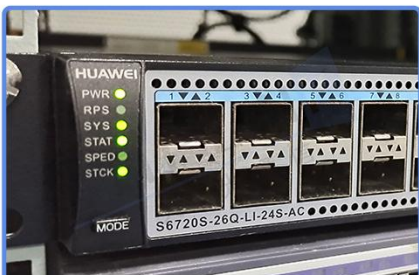
Recommended Application Circuit



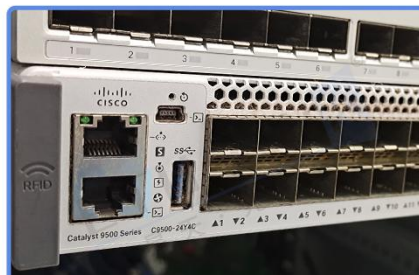
Compatibility Test

In order to ensure the product compatibility, our products will be tested on the switch before shipment. Our modules can compatible with many mainstream brand switches, such as Cisco, Juniper, Extreme, Brocade, IBM, H3C, HP, Huawei, D-Link, Mikrotik, ZTE, TP-Link...

Our test equipment: VOLKTEK MEN-4110, HP 2530-8G, CRS226-24G-25+RM, Catalyst 2960G Series, Catalyst 3850 XS 10G SFP+, Catalyst 3750-E Series, HUAWEI S5700Series, H3C S3100V2 Series, Juniper-EX4200, etc.



HUAWEI S6720S



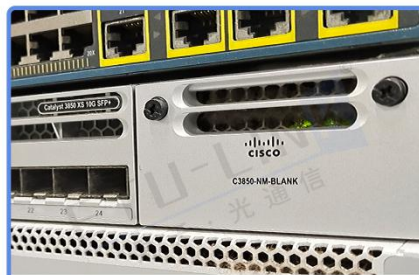
CISCO Catalyst 9500



DELL S5048F



H3C S3100V2



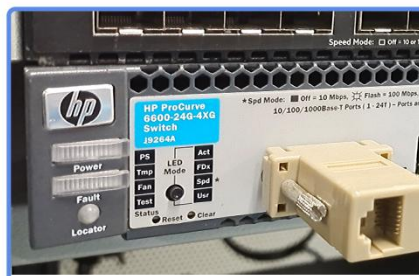
CISCO C3850



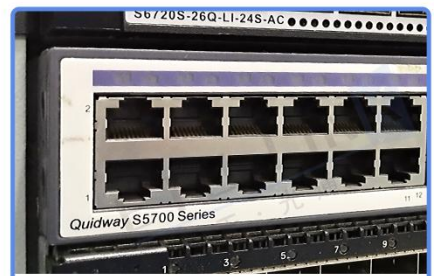
Aruba 2930F



Juniper EX 4200



HP J9264A

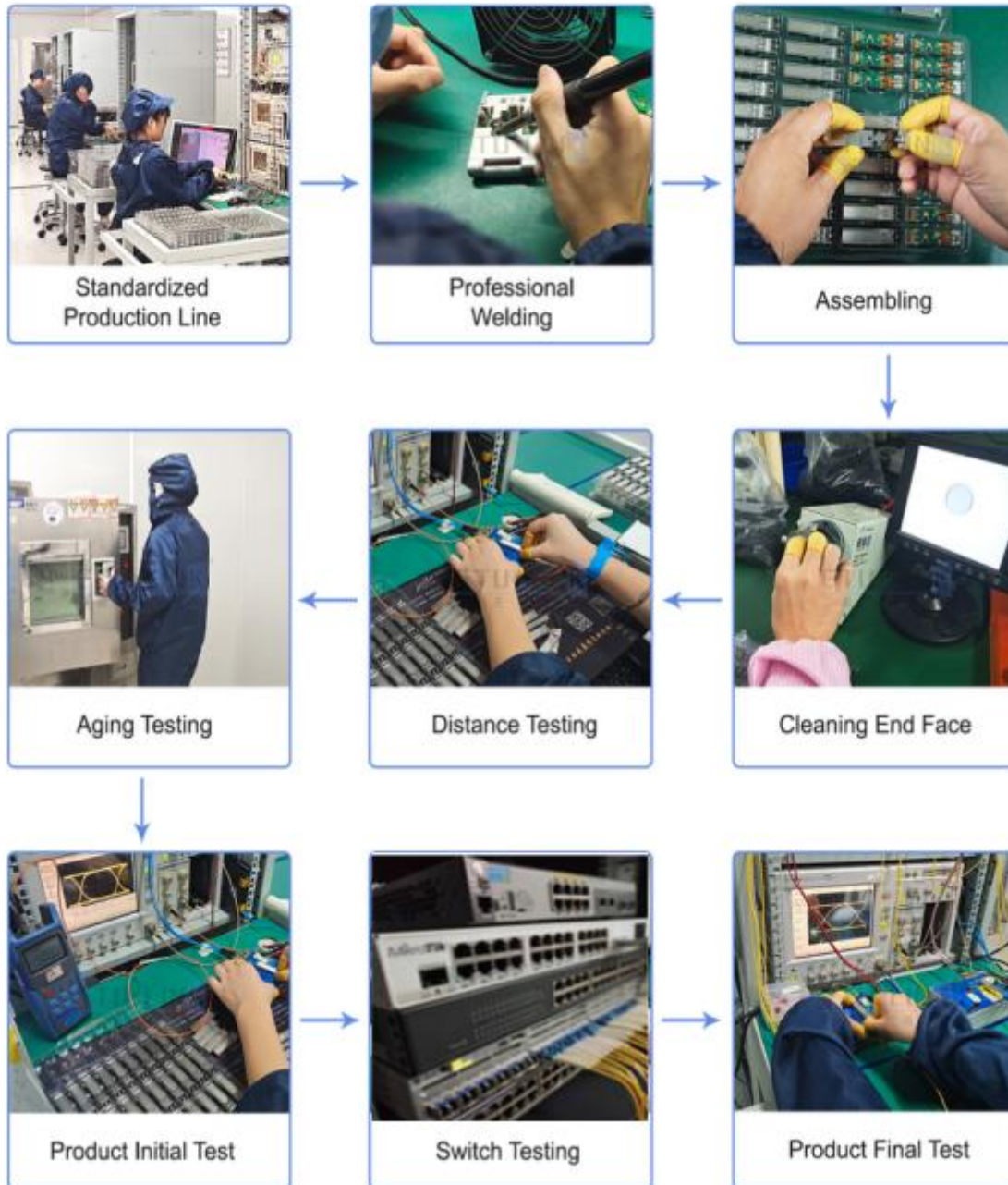


Quidway S5700

Product Production Process

Quality Assurance

Continuous introduction of new equipment,
produced by strict standards, strict quality inspection,
to guarantee the high quality standard of each product.



Packaging

ETU-Link provides two kinds of packaging, 10pcs/Tray and individual package.



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