GPON ONU module

The GPON module allows any RouterBOARD device to be used for Fiber to Home installations without any special modems or software. A plug and play solution means you simply plug it into your device, and no special configuration is needed. It is supported by all our SFP products, with any RouterOS version - all configuration will be done on the ISP side.

The GPON ONU integrates GPON OMCI Stack and is fully compliant with ITU-T G.984 standards. The ONU is in a standardized MSA SFP form-factor and is designed to simply plug into a standard SFP port in your router.

The product provides a pluggable GPON ONU interface for networking equipment with an uplink SFP receptacle enabling these devices to be deployed in GPON networks for FTTx, business services, and wireless backhaul applications.

Applications

- Gigabit Passive Optical Network (GPON) ONU for P2MP application
- FTTx WDM Broadband Access Network
- Home-Gateway, Ethernet Switches, Routers, Wireless devices etc.
- Simple plug and play design for generic SFP connectors.

Specifications

- Single 3.3V power supply
- Small form factor pluggable, simplex SC connector
- 1310nm burst-mode transmitter with DFB laser
- 1490nm continuous-mode receiver with APD-TIA
- 1244Mb/s downstream and 2488Mb/s upstream
- Compliant with ITU-T G984.2 Class B+ or C+
- 2-wire interface for integrated digital diagnostic monitoring (SFF-8472)

- ITU-T G984.1 – GPON General Characteristics
- ITU-T G984.2 – GPON Physical Media Dependent (PMD) Layer Specifications
- ITU-T G984.3 – GPON Transmission Convergence Layer Specifications – GEM MAC Layer
- ITU-T G984.4 – GPON ONT Management and Control Interface (OMCI) Specifications

Specifications

Absolute maximum ratings

Parameter	Symbol	Min	Typ.	Max	Unit
Operating Temperature	Tc	0		70	°C
Storage Temperature	Ts	-40		+85	°C
Relative Humidity	RH	5		95	%
Power Supply Voltage		-0.5		3.6	V

Recommended operating conditions

Parameter	Symbol	Min	Typ.	Max	Unit
Ambient Temperature	Ta	0		70	°C
Supply Voltage	Vcc	3.14	3.3	3.46	V
Supply Current	Icc			650	mA
Module Power Dissipation	P			2.0	W

Transmitter operation chracteristic-optical, electrical

Parameter	Symbol	Min	Typ.	Max	Unit
Data Rate	BR	-	1244.16	-	Mb/s
Transmitter Differential Input Voltage	-	200	-	1600	mV
Tx Burst Input	V_{OH}	2.0	-	V_{CC}	V
	V_{OL}	0	-	0.8	
Center Wavelength	λc	1300	1310	1320	nm
Optical Power Output (BOL)	Po	1.5	-	5	dB
Optical Power Output (EOL)		0.5	-	5	
Spectral Width@-20dB	Δλ	-	-	1	nm
SMSR	SMSR	30	-	-	dB
Extinction Ratio	ER	10	-	-	dB
Output Optical Eye	Compliant with ITU-T G984.2 transmitter eye mask deflection				
Output Eye Mask Margin	-	5	-	-	%
Average launch power of OFF transmitter	P_{off}	-	-	-45	dBm
Optical Burst On Time	T_{on}	-	-	12.8	ns
Optical Burst Off Time	T_{of}	-	-	12.8	ns
Tx_SD Assert Time	-	-	-	1000	ns
TW_BEN-TW_TX_SD	-	-	-	350	ns

Specifications

Receiver operating characteristic-optical, electrical

Parameter	Symbol	Min	Typ.	Max	Unit
Data Rate	BR	-	2488.32	-	Mb/s
Receiver differential output voltage	-	400	-	1600	mV
Rx Signal-Detected Voltage	V_{OH}	2.4	-	V_{CC}	V
	V_{OL}	0	-	0.4	
Receiver Sensibility (BOL)	Rx sens	-	-	-28	dBm
Receiver Sensibility (EOL)		-	-	-27	
Maximum input power	Rx overload	-8	-	-	dBm
Input Operating Wavelength	λ_{RX}	1480	1490	1500	Nm
Optical reflectance	R_{RX}	-	-	-20	dB
Rx_SD Assert	P_A	-	-	-31	dBm
Rx_BEN-TW_TX_SD	P_D	-45	-	-	dBm
Hysteresis	$P_A - P_D$	0.5	2.5	6	dB
1310nm Tx to 1490nm Rx Crosstalk	-	-	-	-47	dB
Optical isolation from external source	ISO	25	-	-	dB
		35	-	-	dB