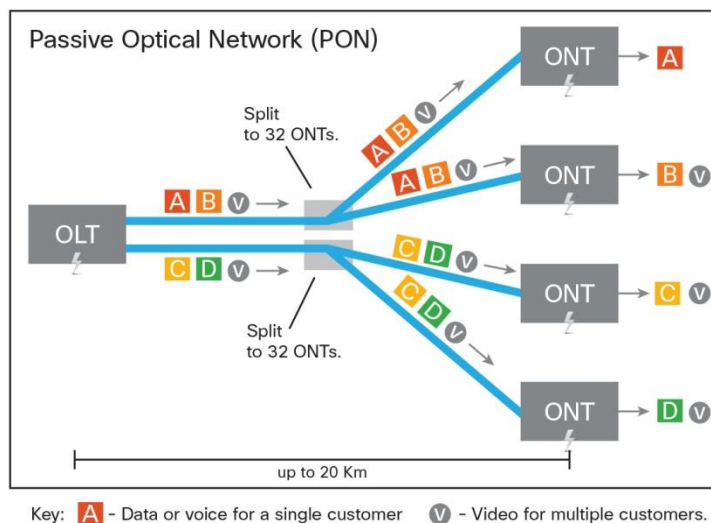# Cisco GPON SFP

Overview

Over the years, fiber-based access has proven to be a cost-effective way to reach customer premises to deliver managed business and residential services. Ethernet or passive optical network (PON) technologies such as Gigabit PON (GPON) are supported by the Cisco® ME Series Switches. Cisco ME Series products support any fiber-based (FTTx) access scenarios, including fiber to the home (FTTH), fiber to the building (FTTB), fiber to the curb (FTTC), fiber to the cell (FTTc), and fiber to the business (FTTb). Figure 1 illustrates the Cisco GPON solution.

Figure 1.   Cisco GPON Solution

Primary Features and Benefits

- Single fiber transceiver with single-mode SC receptacle
- Complies with ITU-T G.984.2 class B+ and C+
- Digital Optical Monitoring (DOM) support
- Complies with RoHS6 directive
- Point-to-multipoint
- Broadcast protocol uses TDMA
- High port density OLT at headend
- Low-cost ONT/ONU at home
- Primary market: FTTH for voice/data/video
- Low-cost passive optical splitter enables sharing of fiber, headend equipment

Technical Specifications

Platform Support

The Cisco GPON SFPs are supported by the ME 4600 Series OLT devices. For more details, refer to the document "Cisco Gigabit Ethernet Compatibility Matrix" and ME 4600 Series datasheet.

Connectors and Cabling

- Equipment: standard SFP+ interface
- Network: dual LC/PC connector

Table 1 describes the optical parameters for the GPON class B+ SFP OLT transceiver module.

Table 1.   Optical Parameters for GPON Class B+ SFP OLT Transceiver Module

Parameter	Symbol	Minimum	Typical	Maximum	Units
Transmitter					
Data rate	-	-	2.488	-	Gb/s
Optical transmit power	Po	1.5	-	5	dBm
Output center wavelength	-	1480	-	1500	nm
Side mode suppression ratio	SMSR	30	-	-	dB
Extinction ratio	E_R	10	-	-	dB
Output power at transmit off	-	-	-	-39	dBm
Receiver					
Wavelength of operation	-	1260	-	1360	nm
Data rate	-	-	1.244	-	Gb/s
Sensitivity	Sen	-	-	-28	dBm
Saturation optical power	Sat	-8	-	-	dBm
Burst packet detect sensitivity	-	-	-	-30	dBm

Table 2 describes the optical parameters for the GPON class C+ SFP OLT transceiver module.

Table 2.   Optical Parameters for GPON Class C+ SFP OLT Transceiver Module

Parameter	Symbol	Minimum	Typical	Maximum	Units
Transmitter					
Data rate	-	-	2.488	-	Gb/s
Optical transmit power	Po	3	-	7	dBm
Output center wavelength	-	1480	-	1500	nm
Side mode suppression ratio	SMSR	30	-	-	dB
Extinction ratio	E_R	8.2	-	-	dB
Output power at transmit off	-	-	-	-39	dBm
Receiver					
Wavelength of operation	-	1290	-	1330	nm
Data rate	-	-	1.244	-	Gb/s
Sensitivity	Sen	-	-	-31	dBm
Saturation optical power	Sat	-12	-	-	dBm
Burst packet detect sensitivity	-	-	-	-30	dBm

Environmental Conditions and Power Requirements

Operating temperature range (see Table 3):

- Commercial temperature range (COM): 0 to 70°C (32 to 158°F)

- Industrial temperature range (IND): -40 to 85°C (-40 to 185°F)

- Storage temperature range: -40 to 85°C (-40 to 185°F)

Cisco SFP modules typically consume up to 1.9W per SFP port.

Table 3. Temperature Range and DOM Support

Product Number	Temperature Range
SFP-GPON-B	COM
SFP-GPON-B-I	IND
SFP-GPON-C	COM
SFP-GPON-C-I	IND

Warranty

- Standard warranty: 1 year

- Extended warranty (option): Available under a Cisco SMARTnet® support contract for the Cisco switch or router chassis

Ordering Information

To place an order, visit the Cisco Ordering page and refer to Table 4.

Table 4. Cisco GPON SFP Ordering Information

Product Number	Description	Color
SFP-GPON-B	Cisco GPON Class B+ SFP OLT Trcvr Module, 1490Tx, 1310Rx	Blue
SFP-GPON-B-I	Cisco GPON Class B+ SFP OLT Trcvr Module, 1490Tx, 1310Rx, I-Temp	Blue
SFP-GPON-C	Cisco GPON Class C+ SFP OLT Trcvr Module, 1490Tx, 1310Rx	Blue
SFP-GPON-C-I	Cisco GPON Class C+ SFP OLT Trcvr Module, 1490Tx, 1310Rx, I-Temp	Blue
SFP-GPON-B-8=	8 units of SFP-GPON-B for ME4600-AMX-16GPON	-
SFP-GPON-B-I-8=	8 units of SFP-GPON-B-I for ME4600-AMX-16GPON	-
SFP-GPON-C-8=	8 units of SFP-GPON-C for ME4600-AMX-16GPON	-
SFP-GPON-C-I-8=	8 units of SFP-GPON-C-I for ME4600-AMX-16GPON	-
SFP-GPON-B-16=	16 units of SFP-GPON-B for ME4600-AMX-16GPON	-
SFP-GPON-B-I-16=	16 units of SFP-GPON-B-I for ME4600-AMX-16GPON	-
SFP-GPON-C-16=	16 units of SFP-GPON-C for ME4600-AMX-16GPON	-
SFP-GPON-C-I-16=	16 units of SFP-GPON-C-I for ME4600-AMX-16GPON	-

Regulatory and Standards Compliance

- Compliant with ITU-T G.984.2 Class C+

- Compliant with ITU-T G.984.2 Class B+

- Safety: Laser Class I 21CFR1040

Service and Support

Cisco offers a wide range of services programs to accelerate customer success. These innovative services programs are delivered through a unique combination of people, processes, tools, and partners, resulting in high levels of customer satisfaction. Cisco Services help you protect your network investment, optimize network operations, and prepare your network for new applications to extend network intelligence and the power of your business. For more information about Cisco Services, refer to Cisco Technical Support Services or Cisco Advanced Services.

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