

# SmartAX MA5801-FL04-H1 Product Datasheet

The MA5801-FL04-H1 is a small-sized box-shaped optical line terminal (OLT) that is used by the FTTH solution. It is applicable to buildings, villages, or other sparsely populated areas to deploy networks in an economic and efficient way.



# Overview

Driven by new services such as 4K videos, virtual reality (VR), home networking, and network cloudification, fiber access becomes an important measure for countries around the world to popularize broadband networks. The fiber access industry is booming. With fiber access nodes continuously being moved downwards, OLTs are deployed closer to users. As deployment scenarios are various and complex, operators urgently require smaller OLTs to meet different requirements.

The MA5801-FL04-H1 is a small-sized box-shaped OLT. It provides four FlexPON service ports and can work with a FlexPON optical module to support GPON, XG(S)-PON, and XG(S)-PON&GPON access. It also provides a unified bearer platform for multiple services, such as broadband, voice, video streaming, and video backhaul services. The product enables one fiber network to carry all types of services, simplifying the network architecture and reducing the OPEX.

# Appearance

The product is a box-shaped OLT with built-in modules such as the control service module, interface module, and upstream module. In addition, a pluggable AC or DC power module is configured for the product. It supports IEC and ETSI mounting ears to be fixed on racks or in cabinets of different specifications.

## Appearance



# Product Highlights

## Fixed-mobile convergence (FMC), reusing cabinet space at existing base stations

To fast construct FMC networks, mobile operators can fully utilize existing backhaul network resources and cabinet space for building FTTH networks. Specifically, they can deploy the product in their mobile cabinets and route drop fibers in a short distance to cover surrounding households. This enables fast network deployment, shortens the time to market (TTM), accelerates the return on investment (ROI), and facilitates an upward business spiral.



## Full coverage and fast deployment in sparsely-populated areas

To cover remote and sparsely-populated areas with national broadband, this product can be used together with different optical modules and the one-stop outdoor site solution. This enables fast deployment of long-distance FTTH networks. In geographically complicated areas such as mountainous areas and islands, the upstream fiber deployment is costly and time-consuming. The microwave backhaul solution can be used to implement long-distance and highly reliable FTTH network access, accelerating the deployment by 70% and striking a balance between network coverage and investment.



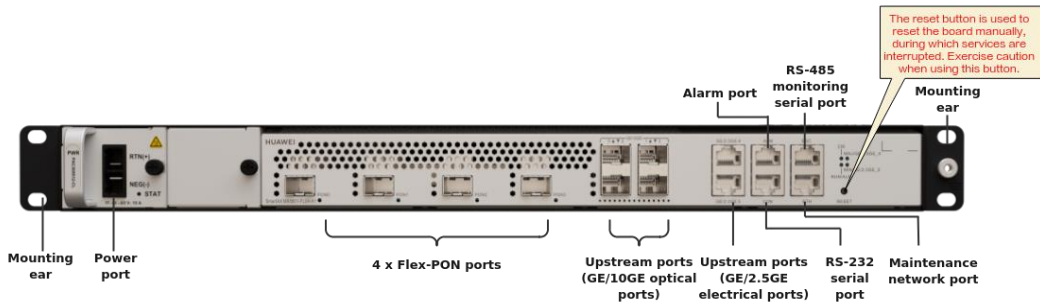
## Product Specifications

Metrics	Description
Dimensions (W x D x H)	Without mounting ears: 442 mm x 220 mm x 43.6 mm (17.4 in. x 8.66 in. x 1.72 in.) With IEC mounting ears: 482.6 mm x 220 mm x 43.6 mm (19 in. x 8.66 in. x 1.72 in.) With ETSI mounting ears: 531 mm x 220 mm x 43.6 mm (20.91 in. x 8.66 in. x 1.72 in.)
Weight without packaging	<ul style="list-style-type: none"> <li>• DC power supply: 3.0 kg</li> <li>• AC power supply: 3.2 kg</li> </ul>
Weight with packaging	<ul style="list-style-type: none"> <li>• DC power supply: 5.7 kg</li> <li>• AC power supply: 5.9 kg</li> </ul>
Power supply mode	<ul style="list-style-type: none"> <li>• DC power supply</li> <li>• AC power supply</li> </ul>
Operating voltage range	<ul style="list-style-type: none"> <li>• DC power supply: -38.4 V to -72 V</li> <li>• AC power supply: 100 V to 240 V</li> </ul>
Rated voltage	<ul style="list-style-type: none"> <li>• DC power supply: -48 V/-60 V</li> <li>• AC power supply: 110 V/220 V</li> </ul>
Maximum input current	<ul style="list-style-type: none"> <li>• DC power supply: 6 A</li> <li>• AC power supply: 2.5 A</li> </ul>
Operating temperature range	-40°C to +65°C. The minimum startup temperature is -25°C. <b>NOTE</b> +65°C is the inlet temperature of service subracks.
Operating humidity range	5%–95% RH
Atmospheric pressure	70–106 kPa
Altitude	Below 4000 m. The air density varies with the altitude, which affects the heat dissipation capability of the device. Therefore, the operating temperature of the device changes with the altitude.
System forwarding capacity	185 Gbit/s
Maximum number of MAC addresses	32768
Maximum number of	512

Metrics	Description
connected ONTs	
Maximum entries in the IPv4 routing table	8192
Maximum entries in the IPv6 routing table	4096
Maximum entries in the ARP table	16384
Bit error rate (BER) in full load	When FEC is enabled, GPON BER: < 10 e-10, and XG(S)-PON BER: < 10 e-12.
Number of upstream optical ports	4 x GE/10GE
Number of upstream electrical ports	2 x GE/2.5GE
Number of service ports	4 x FlexPON (GPON, XG(S)-PON, XG(S)-PON&GPON Combo)
System reliability metrics	<p>System availability in typical configuration: &gt; 99.999%</p> <p>Mean time between failures (MTBF): about 45 years</p> <p><b>NOTE</b></p> <p>Due to different network environments and different boards used by devices, the MA5801 MTBF (45 years) is only for reference. The average repair time for field replaceable units (FRUs) is about 2 hours. The preceding values are only for reference. For details, contact Huawei technical support.</p>
Power consumption	<p>DC power supply:</p> <ul style="list-style-type: none"> <li>• Static power consumption: 41 W</li> <li>• Typical power consumption: 62 W</li> <li>• Maximum power consumption: 78 W</li> </ul> <p>AC power supply:</p> <ul style="list-style-type: none"> <li>• Static power consumption: 42 W</li> <li>• Typical power consumption: 62 W</li> <li>• Maximum power consumption: 79 W</li> </ul> <p><b>NOTE</b></p> <p>The power consumption of the device is obtained in the following testing conditions:</p> <ul style="list-style-type: none"> <li>• Static power consumption: 25°C, no optical module in any optical port, and no service running</li> <li>• Typical power consumption: 25°C, full service configuration, and full traffic</li> <li>• Maximum power consumption: 65°C, full service configuration, and full traffic</li> </ul>

# External Ports

## Front panel ports



### NOTE

The product provides 1 slot for the power module. An AC or DC power module can be configured as required. The preceding figure shows the product configured with a DC power module.

Port Name	Silkscreen	Number of Ports	Function Description
AC power port	–	1	Connects to 110 V or 220 V AC power.
DC power port	–	1	Connects to the -48/-60 V DC power supply.
Reset button	RESET	1	Resets the board manually, which will cause service interruption; therefore, exercise caution when performing this operation.
FlexPON port	PON 0–3	4	Provides 4 FlexPON ports and works with the optical module to implement FlexPON access.
Upstream port (GE/10GE optical port)	GE/10GE 0-3	4	Provides 4 GE/10GE optical ports for upstream transmission.
Upstream port (GE/2.5GE electrical port)	GE/2.5GE 4-5	2	Provides 2 GE/2.5GE electrical ports for upstream transmission.
GE maintenance network port	ETH	1	Provides a 10/100/1000M BASE-T maintenance network port to connect to the network port on a maintenance terminal.
RS-232 serial port	CON	1	Connects to the serial port on a maintenance terminal.
RS-485 monitoring serial port	ESC	1	Connects to the serial port on a monitored device.
Boolean alarm port	ALM	1	Connects to a Boolean value output sensor.

## Main Features

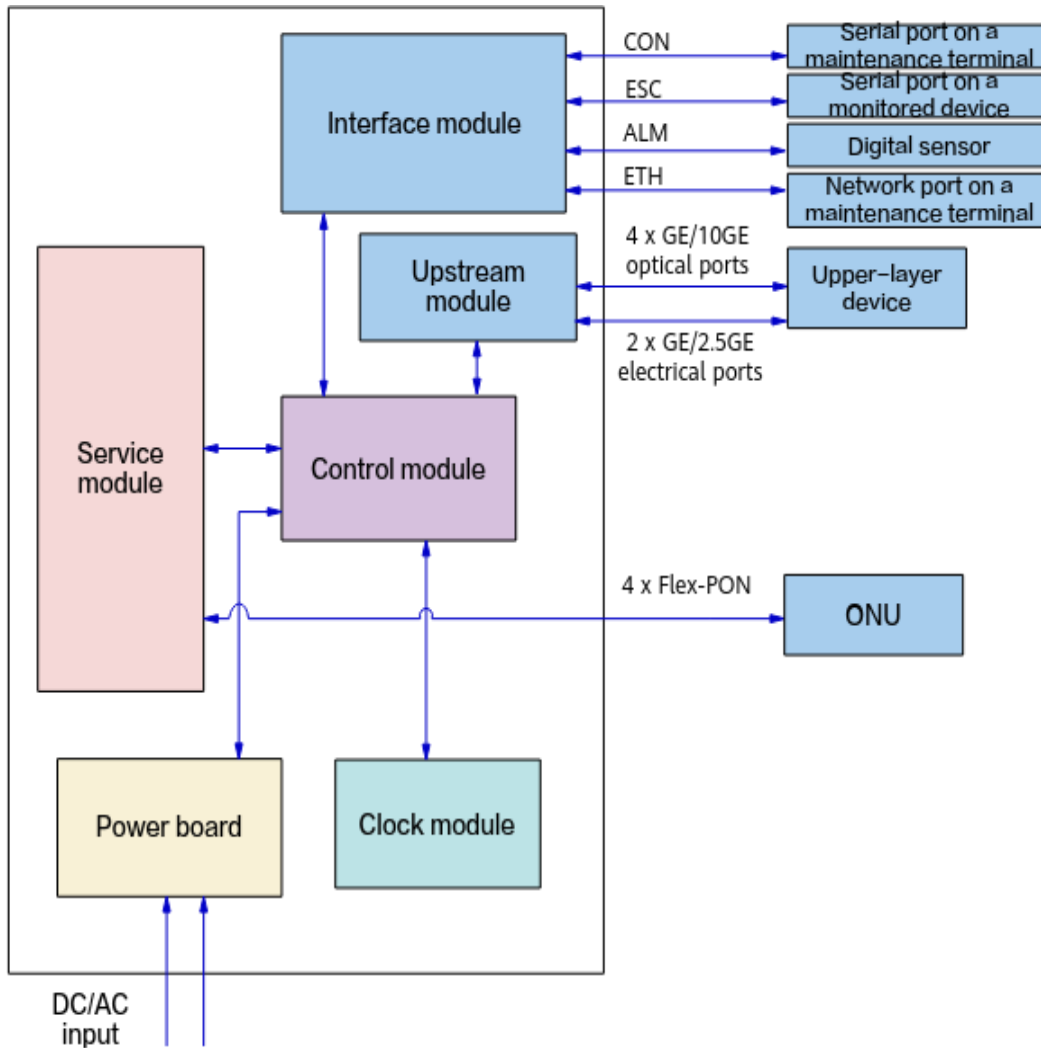
### Layer-2 Features

VLAN+MAC forwarding	SVLAN + CVLAN forwarding
PPPoE+	DHCP option82

### Layer-3 Features

Static route	RIP/RIPng
OSPF/OSPFv3	IS-IS
BGP/BGP4+	ARP
DHCP relay	VRF
<b>Multicast</b>	
IGMP v2/v3	IGMP Proxy/Snooping
MLD v1/v2	MLD Proxy/Snooping
VLAN-based IPTV multicast	IPv4 PIM and PIM-SSM
<b>QoS</b>	
Traffic classification	Priority-based processing
trTCM-based traffic policing	WRED
Traffic Shaping	HQoS
PQ/WRR/PQ+WRR	ACL
<b>IPv6</b>	
IPv4/IPv6 dual stack	IPv6 L2 and L3 forwarding
DHCPv6 relay	
<b>System Reliability</b>	
xPON Type B/Type C protection	ERPS (G.8032)
In-service board fault detection and rectification	
<b>Aggregation Management</b>	
Aggregation management	

# Structure



- **A control module** is the core of system control and service switching and aggregation. It is also the core of management and control for the network management system (NMS).
- **An upstream module** provides 4 GE/10GE upstream optical ports and 2 GE/2.5GE upstream electrical ports.
- **A service module** works with an optical network unit (ONU) to provide FlexPON access services.
- **An interface module** supports alarm input and output in Boolean values.
- **A clock module** provides working clock signals for other functional modules in the system.
- **A power module** supplies power to other functional modules in the system.

## Indicators

### Front panel indicators

Indicator Silkscreen	Indicator Name	Color	Status	Description
RUN/ALM	Running status indicator	Green	Blinking slowly (on for 1s and then off for 1s)	The board is working properly.
		Green	Blinking quickly (on for 0.25s and off for 0.25s)	The program is loading.
		Orange	Blinking	There is an overheating

Indicator Silkscreen	Indicator Name	Color	Status	Description
				alarm
		Red	Steady on	The board is faulty.
		Red	Blinking (on for 0.25s and off for 0.25s)	The board is starting up.
CRI	Alarm indicator	Red	Steady on	The system has generated a critical alarm.
MAJ	Alarm indicator	Orange	Steady on	The system has generated a major alarm.
MIN	Alarm indicator	Yellow	Steady on	The system has generated a minor alarm.
PON 0–3	Link/data status indicator	Green	Steady on	The ONT connected to the related PON port is online.
		Green	Blinking	The optical module does not take effect.
		-	Off	The ONT connected to the related PON port is offline.

### Upstream optical port indicator

Port	Indicator	Indicator Name	Color	Status	Description
Upstream optical port	LINK	Link status indicator	Green	Steady on	The port is connected properly.
			-	Off	No connection is set up on the port.
	ACT	Data status indicator	Green	Blinking	The port is transmitting or receiving data.
			-	Off	No data is transmitted on the port.

### Upstream electrical port indicator

Port	Indicator	Indicator Name	Color	Status	Description
Upstream electrical ports	MAJ/GE/2.5G E_4	Link status indicator of electrical port 4	Green	Steady on	The port is connected, but there is no service traffic.
			-	Blinking	Service traffic is being transmitted on the port.
			-	Off	No connection is set up on the port.
	MIN/GE/2.5G E_5	Data status indicator of electrical port 5	Green	Steady on	The port is connected, but there is no service traffic.
			-	Blinking	Service traffic is being transmitted on the port.



Port	Indicator	Indicator Name	Color	Status	Description
			-	Off	No connection is set up on the port.

### DC power supply indicator

Indicator Silkscreen	Indicator Name	Color	Status	Description
STAT	Power indicator	Green	Steady on	The power input/output is in the normal state.
		Green	Blinking	The power supply is in hiccup protection mode.
		-	Off	The power input is abnormal (no input or input overvoltage/undervoltage), or the power output is abnormal (output undervoltage, overvoltage, or short circuit).

### AC power supply indicator

Indicator Silkscreen	Indicator Name	Color	Status	Description
STAT	Power indicator	Green	Steady on	The power input/output is in the normal state.
		Green	Blinking	The power supply is in hiccup protection mode.
		-	Off	The power input is abnormal (no input or input overvoltage/undervoltage), or the power output is abnormal (output undervoltage, overvoltage, or short circuit).

## Supported Optical Modules

### GPON Optical Module

#### SFP-GPON-SMF-UPC-Class B+(34060337)

SFP-GPON-SMF-UPC-Class B+(34060337) specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP-GPON-SMF-UPC-Class B+(34060337)
Part Number	34060337
Model	OSG002001
Form factor	SFP
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	Tx:2.488 Gbit/s

Item	Value
	Rx:1.244 Gbit/s
Target transmission distance [km]	40 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1490 nm Rx: 1310 nm
Minimum Tx optical power (AVG) [dBm]	1.5 dBm
Maximum Tx optical power (AVG) [dBm]	5 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-28 dBm
Overload power (AVG) [dBm]	-8 dBm

## SFP-GPON-SMF-UPC-Class C++ -TUV&UL&FDA

SFP-GPON-SMF-UPC-Class C++ -TUV&UL&FDA specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP-GPON-SMF-UPC-Class C++ -TUV&UL&FDA
Part Number	34060841
Model	OSG002008
Form factor	SFP
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	Tx:2.488 Gbit/s Rx:1.244 Gbit/s
Target transmission distance [km]	60 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1490 nm Rx: 1310 nm
Minimum Tx optical power (AVG) [dBm]	6 dBm
Maximum Tx optical power (AVG) [dBm]	10 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-35 dBm
Overload power (AVG) [dBm]	-15 dBm

## SFP-GPON-SMF-UPC-Class C+ Pro

### SFP-GPON-SMF-UPC-Class C+ Pro specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP-GPON-SMF-UPC-Class C+ Pro
Part Number	34062607
Model	OSGGPC+Pro
Form factor	SFP
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	Tx:2.488 Gbit/s Rx:1.244 Gbit/s
Target transmission distance [km]	60 km
Remark	When the workmode of an optical module is changed from standard to enhanced, the corresponding RTU (LNSDGPONOptRTU01) needs to be loaded through the NMS.
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1490 nm Rx: 1310 nm
Minimum Tx optical power (AVG) [dBm]	Standard Mode: 3 dBm Enhanced Mode: 6 dBm
Maximum Tx optical power (AVG) [dBm]	Standard Mode: 7 dBm Enhanced Mode: 10 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	Standard Mode: -32 dBm Enhanced Mode: -35 dBm
Overload power (AVG) [dBm]	Standard Mode: -12 dBm Enhanced Mode: -15 dBm

## SFP-GPON-SMF-UPC-Class C+

### SFP-GPON-SMF-UPC-Class C+ specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP-GPON-SMF-UPC-Class C+
Part Number	34060694

Item	Value
Model	OSX002003
Form factor	SFP
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	Tx:2.488 G Rx:1.244 G
Target transmission distance [km]	60 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1490 Rx: 1310
Minimum Tx optical power (AVG) [dBm]	3 dBm
Maximum Tx optical power (AVG) [dBm]	7 dBm
Minimum extinction ratio [dB]	10 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-32 dBm
Overload power (AVG) [dBm]	-8 dBm

## XG-PON Combo Optical Module (SFP+)

### SFP+ -XG-PON&GPON-SMF-UPC-Class C+ Pro

SFP+ -XG-PON&GPON-SMF-UPC-Class C+ Pro specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -XG-PON&GPON-SMF-UPC-Class C+ Pro
Part Number	34062608
Model	OSGXGCC+Pro
Form factor	SFP+
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	GPON: Tx: 2.488 Gbit/s Rx: 1.244 Gbit/s XG-PON: Tx: 9.953 Gbit/s Rx: 2.488 Gbit/s

Item	Value
Target transmission distance [km]	20 km
Remark	When the workmode of an optical module is changed from standard to enhanced, the corresponding RTU (LNSDGPONOptRTU01) needs to be loaded through the NMS.
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	GPON: Tx: 1490 nm Rx: 1310 nm XG-PON: Tx: 1577 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	GPON: Standard Mode: 4.5 dBm Enhanced Mode: 6 dBm XG-PON: Standard Mode: 5 dBm Enhanced Mode: 7.5 dBm
Maximum Tx optical power (AVG) [dBm]	GPON: Standard Mode: 8.5 dBm Enhanced Mode: 10 dBm XG-PON: Standard Mode: 9 dBm Enhanced Mode: 12 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	GPON: -32 dBm XG-PON: -30.5 dBm
Overload power (AVG) [dBm]	GPON: -12 dBm XG-PON: -10 dBm

## SFP+ -XG-PON&GPON-SMF-UPC-Class C+(34062632)

SFP+ -XG-PON&GPON-SMF-UPC-Class C+(34062632) specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -XG-PON&GPON-SMF-UPC-Class C+(34062632)
Part Number	34062632
Model	OSGXGC+02
Form factor	SFP+
Connector type	SC

Item	Value
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	GPON: Tx: 2.488 Gbit/s Rx: 1.244 Gbit/s XG-PON: Tx: 9.953 Gbit/s Rx: 2.488 Gbit/s
Target transmission distance [km]	20 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	GPON: Tx: 1490 nm Rx: 1310 nm XG-PON: Tx: 1577 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	GPON: 4.5 dBm XG-PON: 5 dBm
Maximum Tx optical power (AVG) [dBm]	GPON: 8.5 dBm XG-PON: 9 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	GPON: -32 dBm XG-PON: -30.5 dBm
Overload power (AVG) [dBm]	GPON: -12 dBm XG-PON: -10 dBm

## SFP+ -XG-PON&GPON-SMF-UPC-Class D

### SFP+ -XG-PON&GPON-SMF-UPC-Class D specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -XG-PON&GPON-SMF-UPC-Class D
Part Number	34062018
Model	OSGXGD01
Form factor	SFP+
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C

Item	Value
Transmission rate [bit/s]	GPON: Tx: 2.488 Gbit/s Rx: 1.244 Gbit/s XG-PON: Tx: 9.953 Gbit/s Rx: 2.488 Gbit/s
Target transmission distance [km]	20 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	GPON: Tx: 1490 nm Rx: 1310 nm XG-PON: Tx: 1577 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	GPON: 6 dBm XG-PON: 8 dBm
Maximum Tx optical power (AVG) [dBm]	GPON: 10 dBm XG-PON: 12 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	GPON: -35 dBm XG-PON: -33.5 dBm
Overload power (AVG) [dBm]	GPON: -15 dBm XG-PON: -13 dBm

## XGS-PON Optical Module (SFP+)

### SFP+ -XGS-PON-SMF-UPC-N1

SFP+ -XGS-PON-SMF-UPC-N1 specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -XGS-PON-SMF-UPC-N1
Part Number	34061971
Model	OSGXGSN101
Form factor	SFP+
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	Tx: 9.953 Gbit/s

Item	Value
	Rx: 9.953/2.488 Gbit/s
Target transmission distance [km]	20 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1577 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	2 dBm
Maximum Tx optical power (AVG) [dBm]	5 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	XG-PON: -27.5 dBm XGS-PON: -26 dBm
Overload power (AVG) [dBm]	XG-PON: -7 dBm XGS-PON: -5 dBm

## SFP+ -XGS-PON-SMF-UPC-N2

### SFP+ -XGS-PON-SMF-UPC-N2 specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -XGS-PON-SMF-UPC-N2
Part Number	34061968
Model	OSGXGSN201
Form factor	SFP+
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	Tx: 9.953 Gbit/s Rx: 9.953/2.488 Gbit/s
Target transmission distance [km]	20 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1577 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	4 dBm
Maximum Tx optical power (AVG) [dBm]	7 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	XG-PON: -29.5 dBm



Item	Value
	XGS-PON: -28 dBm
Overload power (AVG) [dBm]	XG-PON: -9 dBm XGS-PON: -7 dBm

## XGS-PON Combo Optical Module

### SFP+ -XGS-PON&GPON-SMF-UPC-Class C+

SFP+ -XGS-PON&GPON-SMF-UPC-Class C+ specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -XGS-PON&GPON-SMF-UPC-Class C+
Part Number	34062610
Model	OSGXGSC+01
Form factor	SFP+
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	GPON: Tx: 2.488 Gbit/s Rx: 1.244 Gbit/s XG-PON: Tx: 9.953 Gbit/s Rx: 2.488 Gbit/s XGS-PON: Tx: 9.953 Gbit/s Rx: 9.953 Gbit/s
Target transmission distance [km]	20 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	GPON: Tx: 1490 nm Rx: 1310 nm XG-PON: Tx: 1577 nm Rx: 1270 nm XGS-PON: Tx: 1577 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	GPON: 3 dBm XG-PON: 5 dBm XGS-PON: 5 dBm

Item	Value
Maximum Tx optical power (AVG) [dBm]	GPON: 7 dBm XG-PON: 8 dBm XGS-PON: 8 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	GPON: -32 dBm XG-PON: -30.5 dBm XGS-PON: -29 dBm
Overload power (AVG) [dBm]	GPON: -12 dBm XG-PON: -10 dBm XGS-PON: -8 dBm

## SFP+ -XGS-PON&GPON-SMF-UPC-Class D (34061988)

### SFP+ -XGS-PON&GPON-SMF-UPC-Class D specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -XGS-PON&GPON-SMF-UPC-Class D
Part Number	34061988
Model	OSGXGSD01
Form factor	SFP+
Connector type	SC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	GPON: Tx: 2.488 Gbit/s Rx: 1.244 Gbit/s XG-PON: Tx: 9.953 Gbit/s Rx: 2.488 Gbit/s XGS-PON: Tx: 9.953 Gbit/s Rx: 9.953 Gbit/s
Target transmission distance [km]	20 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	GPON: Tx: 1490 nm Rx: 1310 nm XG-PON: Tx: 1577 nm

Item	Value
	Rx: 1270 nm XGS-PON: Tx: 1577 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	GPON: 6 dBm XG-PON: 8 dBm XGS-PON: 8 dBm
Maximum Tx optical power (AVG) [dBm]	GPON: 10 dBm XG-PON: 11 dBm XGS-PON: 11 dBm
Minimum extinction ratio [dB]	8.2 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	GPON: -35 dBm XG-PON: -33.5 dBm XGS-PON: -32 dBm
Overload power (AVG) [dBm]	GPON: -15 dBm XG-PON: -13 dBm XGS-PON: -11 dBm

## GE Optical Module (One-channel Two-fiber Bidirectional)

### eSFP-1.25G-1310nm-SMF-10km(34060473)

eSFP-1.25G-1310nm-SMF-10km(34060473) specifications

Item	Value
<b>Basic Information</b>	
Module name	eSFP-1.25G-1310nm-SMF-10km(34060473)
Part Number	34060473
Model	eSFP-1310nm-1000Base-Lx SM
Form factor	eSFP
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	1.25 Gbit/s
Target transmission distance [km]	10 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	1310 nm
Minimum Tx optical power (AVG) [dBm]	-9 dBm
Maximum Tx optical power (AVG) [dBm]	-3 dBm

Item	Value
Minimum extinction ratio [dB]	9 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-20 dBm
Overload power (AVG) [dBm]	-3 dBm

## eSFP-1.25G-1310nm-SMF-40km

eSFP-1.25G-1310nm-SMF-40km specifications

Item	Value
<b>Basic Information</b>	
Module name	eSFP-1.25G-1310nm-SMF-40km
Part Number	34060298
Model	eSFP-1310nm-1000Base-Vx
Form factor	eSFP
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	1.25 Gbit/s
Target transmission distance [km]	40 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	1310 nm
Minimum Tx optical power (AVG) [dBm]	-5 dBm
Maximum Tx optical power (AVG) [dBm]	0 dBm
Minimum extinction ratio [dB]	9 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-23 dBm
Overload power (AVG) [dBm]	-3 dBm

## GE Optical Module (One-channel One-fiber Bidirectional)

### eSFP-1.25G-Tx(1310nm)/Rx(1490nm)(BIDI)-SMF-10km

eSFP-1.25G-Tx(1310nm)/Rx(1490nm)(BIDI)-SMF-10km specifications

Item	Value
<b>Basic Information</b>	
Module name	eSFP-1.25G-Tx(1310nm)/Rx(1490nm)(BIDI)-SMF-10km
Part Number	34060470
Model	SFP-GE-LX-SM1310-BIDI

Item	Value
Form factor	eSFP
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	1.25 Gbit/s
Target transmission distance [km]	10 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1310 nm Rx: 1490 nm
Minimum Tx optical power (AVG) [dBm]	-9 dBm
Maximum Tx optical power (AVG) [dBm]	-3 dBm
Minimum extinction ratio [dB]	6 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-19.5 dBm
Overload power (AVG) [dBm]	-3 dBm

## eSFP-1.25G-Tx(1310nm)/Rx(1490nm)(BIDI)-SMF-40km

eSFP-1.25G-Tx(1310nm)/Rx(1490nm)(BIDI)-SMF-40km specifications

Item	Value
<b>Basic Information</b>	
Module name	eSFP-1.25G-Tx(1310nm)/Rx(1490nm)(BIDI)-SMF-40km
Part Number	34060539
Model	OGEBIDI41
Form factor	eSFP
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	1.25 Gbit/s
Target transmission distance [km]	40 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1310nm Rx: 1490nm
Minimum Tx optical power (AVG) [dBm]	-2 dBm
Maximum Tx optical power (AVG) [dBm]	3 dBm
Minimum extinction ratio [dB]	9 dB

Item	Value
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-23 dBm
Overload power (AVG) [dBm]	-3 dBm

## eSFP-1.25G-Tx(1490nm)/Rx(1310nm)(BIDI)-SMF-40km

eSFP-1.25G-Tx(1490nm)/Rx(1310nm)(BIDI)-SMF-40km specifications

Item	Value
<b>Basic Information</b>	
Module name	eSFP-1.25G-Tx(1490nm)/Rx(1310nm)(BIDI)-SMF-40km
Part Number	34060540
Model	OGEBIDI40
Form factor	eSFP
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	1.25 Gbit/s
Target transmission distance [km]	40 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1490 nm Rx: 1310 nm
Minimum Tx optical power (AVG) [dBm]	-2 dBm
Maximum Tx optical power (AVG) [dBm]	3 dBm
Minimum extinction ratio [dB]	9 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-23 dBm
Overload power (AVG) [dBm]	-3 dBm

## eSFP-1.25G-Tx(1490nm)/Rx(1310nm)(BIDI)-SMF-10km

eSFP-1.25G-Tx(1490nm)/Rx(1310nm)(BIDI)-SMF-10km specifications

Item	Value
<b>Basic Information</b>	
Module name	eSFP-1.25G-Tx(1490nm)/Rx(1310nm)(BIDI)-SMF-10km
Part Number	34060475
Model	SFP-GE-LX-SM1490-BIDI
Form factor	eSFP

Item	Value
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	1.25 Gbit/s
Target transmission distance [km]	10 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1490 nm Rx: 1310 nm
Minimum Tx optical power (AVG) [dBm]	-9 dBm
Maximum Tx optical power (AVG) [dBm]	-3 dBm
Minimum extinction ratio [dB]	6 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-19.5 dBm
Overload power (AVG) [dBm]	-3 dBm

## 10GE Optical Module (One-channel Two-fiber bidirectional)

### SFP+ -10G-1310nm-SMF-10km(34060495)

SFP+ -10G-1310nm-SMF-10km(34060495) specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -10G-1310nm-SMF-10km(34060495)
Part Number	34060495
Model	OSX001001
Form factor	SFP+
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	10 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	1310 nm
Minimum Tx optical power (AVG) [dBm]	-8.2 dBm
Maximum Tx optical power (AVG) [dBm]	0.5 dBm
Minimum extinction ratio [dB]	3.5 dB
<b>Receiver Optical Characteristics</b>	

Item	Value
Rx sensitivity (AVG) [dBm]	-12.6 dBm
Overload power (AVG) [dBm]	0.5 dBm

## SFP+ -10G-1310nm-SMF-10km(34060742)

SFP+ -10G-1310nm-SMF-10km(34060742) specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -10G-1310nm-SMF-10km(34060742)
Part Number	34060742
Model	OSX010N30
Form factor	SFP+
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	10 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	1310 nm
Minimum Tx optical power (AVG) [dBm]	-8.2 dBm
Maximum Tx optical power (AVG) [dBm]	0.5 dBm
Minimum extinction ratio [dB]	3.5 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-12.6 dBm
Overload power (AVG) [dBm]	0.5 dBm

## SFP+ -10G-1310nm-SMF-10km(34060495-001)

SFP+ -10G-1310nm-SMF-10km(34060495-001) specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -10G-1310nm-SMF-10km(34060495-001)
Part Number	34060495-001
Model	OSX001001
Form factor	SFP+
Connector type	LC
Optical fiber type	SMF



Item	Value
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	10 Gbit/s
Target transmission distance [km]	10 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	1310 nm
Minimum Tx optical power (AVG) [dBm]	-8.2 dBm
Maximum Tx optical power (AVG) [dBm]	0.5 dBm
Minimum extinction ratio [dB]	3.5 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-12.6 dBm
Overload power (AVG) [dBm]	0.5 dBm

## SFP+ -9.95~11.1G-1550nm-SMF-40km

SFP+ -9.95~11.1G-1550nm-SMF-40km specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -9.95~11.1G-1550nm-SMF-40km
Part Number	34060518
Model	OSX040N00
Form factor	SFP+
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	9.95-11.1 Gbit/s
Target transmission distance [km]	40 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	1550 nm
Minimum Tx optical power (AVG) [dBm]	-4.7 dBm
Maximum Tx optical power (AVG) [dBm]	4 dBm
Minimum extinction ratio [dB]	3 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-14.1 dBm
Overload power (AVG) [dBm]	0.5 dBm

## 10GE Optical Module (One-channel One-fiber Bidirectional)

### SFP+ -2.5~11.3G-Tx(1330nm)/Rx(1270nm)(BIDI)-SMF-10km-I

SFP+ -2.5~11.3G-Tx(1330nm)/Rx(1270nm)(BIDI)-SMF-10km-I specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -2.5~11.3G-Tx(1330nm)/Rx(1270nm)(BIDI)-SMF-10km-I
Part Number	34060546-004
Model	SFP-GE-LX-SM1330-BIDI
Form factor	SFP+
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	-40 °C ~ 85 °C
Transmission rate [bit/s]	2.5-11.3 Gbit/s
Target transmission distance [km]	10 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1330 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	-8.2 dBm
Maximum Tx optical power (AVG) [dBm]	0.5 dBm
Minimum extinction ratio [dB]	3.5 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-14.4 dBm
Overload power (AVG) [dBm]	0.5 dBm

### SFP+ -9.95~10.3G-Tx(1270nm)/Rx(1330nm)(BIDI)-SMF-40km

SFP+ -9.95~10.3G-Tx(1270nm)/Rx(1330nm)(BIDI)-SMF-40km specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -9.95~10.3G-Tx(1270nm)/Rx(1330nm)(BIDI)-SMF-40km
Part Number	34060918
Model	OSX040B03
Form factor	SFP+
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C

Item	Value
Transmission rate [bit/s]	9.95-10.3 Gbit/s
Target transmission distance [km]	40 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1270 nm Rx: 1330 nm
Minimum Tx optical power (AVG) [dBm]	0 dBm
Maximum Tx optical power (AVG) [dBm]	5 dBm
Minimum extinction ratio [dB]	3.5 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-18 dBm
Overload power (AVG) [dBm]	-9 dBm

## SFP+ -9.95~10.3G-Tx(1330nm)/Rx(1270nm)(BIDI)-SMF-40km

SFP+ -9.95~10.3G-Tx(1330nm)/Rx(1270nm)(BIDI)-SMF-40km specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -9.95~10.3G-Tx(1330nm)/Rx(1270nm)(BIDI)-SMF-40km
Part Number	34060917
Model	OSX040B02
Form factor	SFP+
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	0 °C ~ 70 °C
Transmission rate [bit/s]	9.95-10.3 Gbit/s
Target transmission distance [km]	40 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1330 nm Rx: 1270 nm
Minimum Tx optical power (AVG) [dBm]	0 dBm
Maximum Tx optical power (AVG) [dBm]	5 dBm
Minimum extinction ratio [dB]	3.5 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-18 dBm
Overload power (AVG) [dBm]	-9 dBm

# SFP+ -2.5~11.3G-Tx(1270nm)/Rx(1330nm)(BIDI)-SMF-10km-I-ONU

SFP+ -2.5~11.3G-Tx(1270nm)/Rx(1330nm)(BIDI)-SMF-10km-I-ONU specifications

Item	Value
<b>Basic Information</b>	
Module name	SFP+ -2.5~11.3G-Tx(1270nm)/Rx(1330nm)(BIDI)-SMF-10km-I-ONU
Part Number	34060544-004
Model	SFP-GE-LX-SM1270-BIDI
Form factor	SFP+
Connector type	LC
Optical fiber type	SMF
Working case temperature [°C]	-40 °C ~ 85 °C
Transmission rate [bit/s]	2.5 G-11.3 G
Target transmission distance [km]	10 km
<b>Transmitter Optical Characteristics</b>	
Center wavelength [nm]	Tx: 1270 nm Rx: 1330 nm
Minimum Tx optical power (AVG) [dBm]	-8.2 dBm
Maximum Tx optical power (AVG) [dBm]	0.5 dBm
Minimum extinction ratio [dB]	3.5 dB
<b>Receiver Optical Characteristics</b>	
Rx sensitivity (AVG) [dBm]	-14.4 dBm
Overload power (AVG) [dBm]	0.5 dBm

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