



APOLLO
TECHNOLOGY

Apollo Series

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Apollo 4 Series Media Convertors

10/100M Ethernet Fibre Media Convertors

Apollo 4 series Fibre Media Converters can convert Optical - Electric Ethernet signals between 10/100M UTP interface (TX) and 100M optical fibre interface (FX). It can extend traditional 10/100M fast Ethernet to a distance of 120km through an optical fibre link. It possesses stable performance and good quality by adopting latest IC packages. 6 Group LED indicated lights can fully monitor the working conditions the media convertor. It is easy for end-users to observe network operation. Apollo 4 series external power supply Converters can be used alone, or inserted to a 14 slots Media Converters Rack. The Apollo 4 Media Convertor series are suitable for use in a Data Network Centre.



Main features

- Auto negotiation function allows UTP port to auto select 10M or 100M, and Full Duplex or Half Duplex.
- UTP port supports MDI/MDI-X auto crossover.
- Indicator function of link fault (LFP): When optical fibre or UTP is at fault, the converter could stop all the link.
- Multiple Optical Transceiver could be chosen: SC, ST or FC, singlemode / multimode
- Supporting 1600 bytes packet for management
- Converter working mode can be chosen: Store and forward switch mode, Modified cut-through switch mode, or Converter mode.
- Internal or External switching power: for users to choose.

Technical Specifications

- Operating standards: IEEE802.3u、10/100Base-TX and 100Base-FX;
- MAC addresses table: 1K
- Data buffer: Built-in 128Kbyte RAM .
- Connectors: UTP Connector: RJ-45, 10/100Mbps; Fibre Connector: ST/SC/FC, 100Mbps
- Cable:
- UTP: Cat. 5 (the max distance up to 100m)
- Fibre (Multimode): 50/125, 62.5/125μm (the max distance up to 2km or 5km)
- Fibre (Singlemode): 8.3/125, 8.7/125, 9/125, 10/125μm (the max distance up to 20 -120km)
- Flow Control
- Full Duplex: Supporting standard IEEE802.3x
- Half Duplex: back pressure
- LED: Power, FX SD, FX Link/Act, TX 100, TX FDX, TX Link/Act.
- Power Requirement: AC 170 ~ 240V, DC 5V.
- Ambient Temperature: 0 ~ 700C
- Humidity: 5 ~ 90%
- Dimensions: Internal power: 30×110×140mm
External power: 26×70×93mm

Fibre Optic Information

Type	Connector	Fibre type	Wavelength	Max. distance	TX power	Sensitivity	Link Budget
APOLLO4A	ST/SC	multimode	850/1310nm	2km	-20~-12dBm	-30dBm	10dBm
APOLLO4B	SC	multimode	850/1310nm	5km	-13~-8dBm	-30dBm	17dBm
APOLLO4C	SC	singlemode	1310nm	25km	-14~-8dBm	-32dBm	18dBm
APOLLO4D	SC	singlemode	1310nm	40km	-8~-3dBm	-33dBm	25dBm
APOLLO4E	SC	singlemode	1310nm	60km	-3~0dBm	-36dBm	33dBm
APOLLO4F	SC	singlemode	1550nm	80km	-10~-5dBm	-35dBm	25dBm
APOLLO4G	SC	singlemode	1550nm	100km	-5~0dBm	-36dBm	31dBm
APOLLO4H	SC	singlemode	1550nm	120km	0~3dBm	-36dBm	36dBm

APOLLO 5 Gigabyte Optical Fibre Media Converter Series



Apollo 5 Series Gigabit Fibre Media Converters can convert Optical—Electric Ethernet signals between 10/100/1000M UTP interface (TX) and 1000M optical fibre interface (FX). The traditional 10/100/1000M gigabit Ethernet can be extended to the distance of 100km through an optical fibre link. It possesses stable performance and good quality by adopting latest IC packages. 6 Group LED indicated lights can fully monitor the working conditions the media convertor. It is easy for end-users to observe network operation. Apollo 5 Series Gigabit Converters can be used alone alternatively they can be produced in the form of a Converter Card to be inserted to a 16 slot rack unit. The Apollo 5 Media Converter series are suitable for use in a Data Network Centre.

Main features

- Auto negotiation function allows UTP ports to auto select 10/100/1000M and Full Duplex or Half Duplex.
- The UTP port supports the connection of MDI/MDI-X auto crossover.
- Multimode Fibre: the max distance up to 2km
- Singlemode Fibre: the max distance up to 100km
- Supporting the max 1536 byte Ethernet packet
- Supporting flow control
- Adopting internal power supply

Technical Specifications

- Operating standards: IEEE802.3z/AB, 1000Base-T and 1000Base-SX/LX
- MAC address table: 4K
- Data Buffer: 256K
- Connector: UTP: RJ-45, 10/100/1000Mbps; Fibre: SC, 1000Mbps
- Cable :
- UTP cable: Cat 5e or Cat 6 (the max distance up to 100m)
- Fibre : multimode : 50/125, 62.5/125 μ m (the max distance up to 2km)
 - singlemode : 8.3/125, 8.7/125, 9/125 μ m (the max distance up to 100km)
- Flow control : Full Duplex: IEEE802.3x
 - Half Duplex: back pressure.
- Power: AC 220V(170-260V) 50Hz; DC 5V, 2A
- Ambient temperature: 0 ~ +50°C
- Storage temperature: -20 ~ +70°C
- Humidity: 5% ~ 90%
- Dimensions: 40 (high) x 110 (width) x 140 (length) mm

Fibre Information

Type	Connector	Fibre type	Max. distance	Wavelength	TX power	Sensitivity	Link Budget
APOLLO5A	SC	Multimode	2km	850nm	-11~-3dBm	-18dBm	7dBm
APOLLO5B	SC	Multimode	2km	1310nm	-11~-3dBm	-20dBm	10dBm
APOLLO5C	SC	Singlemode	20km	1310nm	-10~-3dBm	-21dBm	11dBm
APOLLO5D	SC	Singlemode	40km	1310nm	-4~-0dBm	-25dBm	21dBm
APOLLO5E	SC	Singlemode	60km	1310nm	-0~3dBm	-26dBm	26dBm
APOLLO5F	SC	Singlemode	80km	1550nm	-2~2dBm	-26dBm	24dBm
APOLLO5G	SC	Singlemode	100km	1550nm	1~3dBm	-27dBm	28dBm

APOLLO 6 ARC FUSION SPLICER

The Apollo 6 V Groove Fusion splicer is an industry leader in its design and Innovation. The 5.6 inch TFT color LCD ultra-clear display resolution and easy to use navigation keys provide optimum user friendliness. The Apollo 6 also allows for software upgrades via and easy to use USB port. The long life battery (up to 6 hours) and fast splice time Make this one of the most priced units in the market without compromising quality and reliability.



Key Features:

- **Color LCD monitor & 256 magnification**
- **Compact & Light weight**
- **Reversible monitor with control panel on each side**
- **Max. wind velocity of 15m/s.**
- **8 Sec. splice time, 40 Sec. tube-heat time**
- **Simultaneous X and Y views**
- **Up to 6hr internal battery**
- **SYSTEM TEST ensures the best possible result**
- **User programmable**
- **Auto check fibre end face**
- **Auto calibrate parameters**
- **Store 8000 groups of splice results**
- **Multiple language options**

Specifications

Applicable Fibres:	SM、MM、DS、NZ-DS、EDF
Cladding diameter:	100 to 150um
Coating diameter:	100 to 1000um
Fibre cleaved length:	8-22mm (standard)
Splicing mode:	Auto & Manual
Average splice loss:	0.02dB(SM)、0.01dB(MM)、0.04dB(DS) 、0.04dB(NZDS)
Return loss:	≥ 60dB
Environment conditions:	-25~+50℃ (operation temperature), 0~95%RH (humidity), 0~5000m (altitude)
Storage environment:	-40~+80℃ (temperature), 0~95%RH (humidity)
Protection sleeve length:	20mm、40mm、60mm
Tension test:	2.0N (Standard)
Language:	English, Chinese, Korean, Russian, Spanish, Portuguese, German, French
Interface:	RS232 interface & video output
Power supply:	AC adaptor: 85~260V input voltage
	Internal battery: 12V voltage, 10Ah, more than 200 times of continuous splices and heats
	DC adaptor: 12V voltage, optional multipurpose external battery
Dimensions:	170 (W) × 140 (H) × 170 (D) mm
Weight:	3.3kg

APOLLO 6 FUSION SPLICER

The APOLLO 6 V Groove Fusion splicer is an industry leader in its design and technical innovation. The 5.6 inch TFT color LCD ultra-clear display resolution and the easy to use navigation keys provide optimum user friendliness. The Apollo 6 Fusion Splicer also allows for software upgrades via an easy to use USB port. The long life battery (up to 6 hours) and fast splice time make this one of the most attractively priced units in the market without compromising quality and reliability.



FEATURES

- Digital fusion splicer with automatic focus function
- 9 second splice time
- Fibre core can be display clearly
- Single X or Y view and X & Y view simultaneously
- Auto detect cleaved endface fault
- Display Fibre cleaved and offset angle
- Display core and clad offset
- 5.6 inch TFT color LCD monitor with clear digital image display
- USB & VGA interface
- Software upgrade via USB interface

SPECIFICATIONS

Model	
Applicable Fibres	SM (ITU-T G.652), MM (ITU-T G.651), DS (ITU-T G.653), NZDS (ITU-T G.655)
Fibre cleaved length	10 ~16mm (Coating diameter<250µm);16mm(Coating diameter250~1000µm)
Fibre diameter	Cladding diameter:80 ~150µm , Coating diameter:100 ~1000µm
Auto focusing	Available
Fibre aligning method	Core aligning, clad aligning, manual aligning
Average splice loss	0.02dB (SM), 0.01dB (MM), 0.04dB (DS), 0.04dB(NZDS)
Splicing time	Typical 9 sec,with standard SM Fibre
Heating time	Typical 30sec
Applicable sleeves	60mm, 40mm and a series of micro sleeves
Tension test	2N(option)
Electrode life	5000
Battery capacity	Typical 400 cycles (splice and heat)
Monitor	5.1 inch TFT color monitor
Terminal	USB 1.1 and VGA , software upgrade via USB interface
Operating condition	0 ~ 5000m above sea level, 0 ~ 95%RH and -10~50oCC, respectively, Max. wind velocity of 15m/s
Splicing mode	Auto ,normal
Fibre cleaved angle threshold set	0.1 ~ 10.0 oC , 0.1oCstep
Power supply	Li-battery 11.8V , AC100-240V DC12.6V/5.0A
Dimension	Dimension L169*W152*H155mm
weight	2.4kg 2.9kg(battery) 9000mAh

■ Standard package —

(1) ↻	Arc Fusion Splicer ↻	
(2) ↻	Li-Battery ↻	
(3) ↻	AC adaptor ↻	
(4) ↻	AC Power Cord ↻	
(5) ↻	Charger ↻	
(6) ↻	Spare Electrodes ↻	
(7) ↻	Instruction Manual ↻	
(8) ↻	Carrying Case ↻	
(9) ↻	Cooling salver ↻	
(10) ↻	Charger cord ↻	
(11) ↻	Fiber stripper ↻	
(12) ↻	Fiber cleaver ↻	

APOLLO 7 SERIES

HANDHELD OTDR TEST SET

The Apollo 7 series are handheld OTDR test sets. The Apollo 7 OTDR's provides comprehensive optical test for metro, access/FTTx, and LAN network. The Apollo 7 OTDR's are designed for indoor and outdoor testing with lightweight, flexible and rugged features. It is optimal test set for service providers validating at installing phase or troubleshooting at running phase.



- Lightweight, rugged, flexible for field testing
- Fast start-up, high resolution color touch display
- Friendly keystroke designed for easy, flexible input and select
- Covering all OTDR functions, dual-wavelength for different test demand
- More comprehensive test features with higher performance-to-price ratio
- 200km distance range satisfy metro and access optical network test application
- FTTx/MDU PON—network test

Lightweight and Flexible Designed, Simple and Efficient Test



Apollo 7 handheld OTDR test set accommodates multi-configuration for different user demand which is more flexible.

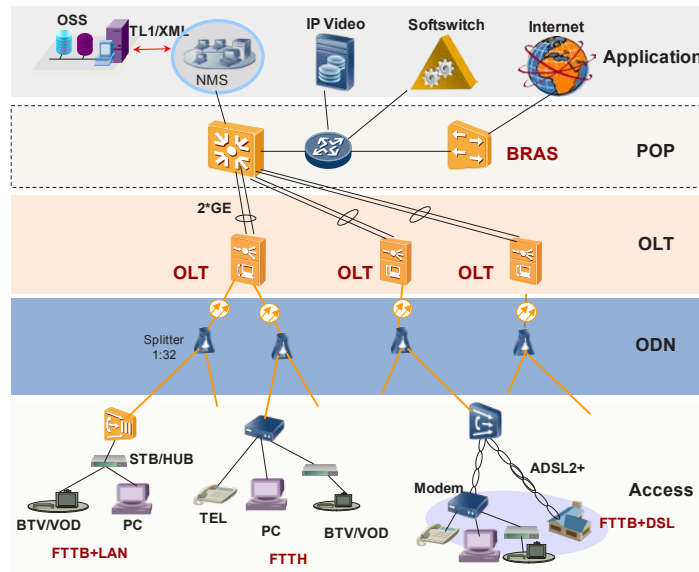
Product	Wavelength	Dynamic Range
APOLLO7A	1310/1550nm	40/39dB
APOLLO7B	1310/1550nm	35/34dB
APOLLO7C	1310/1550nm	30/28dB
APOLLO7D	1310/1550/1625nm	39/37/38dB
APOLLO7E	1310/1490/1550nm	39/37/37dB
APOLLO7F	1310/1550/1650nm	39/37/38dB
APOLLO7G	1310/1490/1550/1625nm	39/37/37/38dB
APOLLO7H	1310/1490/1550/1650nm	39/37/37/38dB

FEATURES

- High resolution color display, great visibility for easy reading and operating even under direct sunlight.
- Shockproof designed for field application.
- Easy detecting and characterizing Fibre with simple and friendly keys.
- Covering all OTDR functions for whole optical link testing and maintaining.
- PON OTDR supports maximum 4 wavelengths(1310/1490/1550/1625nm) for fibre testing, and automatic switching multi-wavelength OTDR testing.
- Regular OTDR provides a more flexible dynamic range: 40dB, 35dB and 30dB.
- Event dead zone of 0.8m and attenuation dead zone of 7m for pinpoint event location.
- Supports VFL function and optional support optical power meter function.

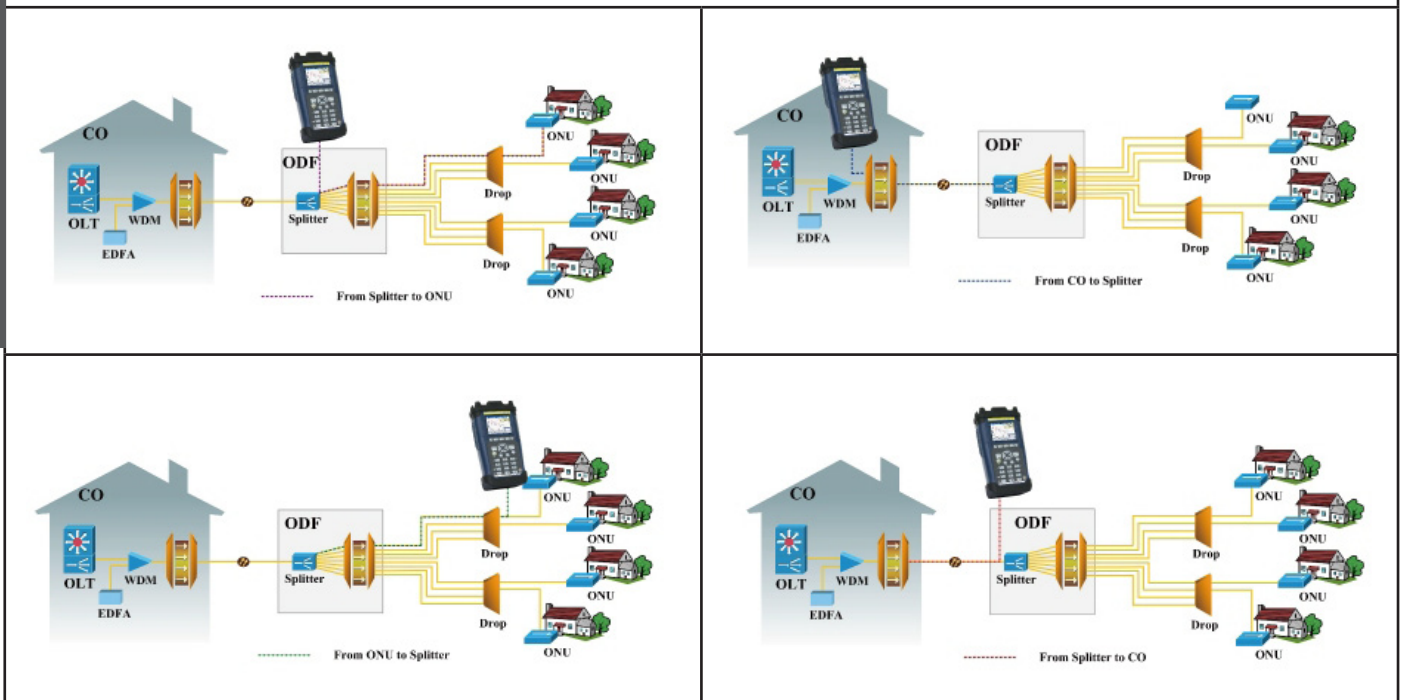
FIBRE OPTICAL NETWORK TESTING

An OTDR has become a must test equipment for installing, monitoring and troubleshooting of optical network. As increasingly demand of high bandwidth service, fibre optical network is rapidly expanding. The APOLLO 7 handheld OTDR test set provides more comprehensive fibre test functions and more accurate test results, which will assist network with easy installation, operation and maintenance of fibre optic networks.



OTDR Tests

During installation, OTDR testing should be performed after the installation of every single cabled fibre section. The Apollo 7 handheld OTDR test set supports OTDR test of each section in a fibre optical network with accurate test results.



Testing of fibre optical networks with the Apollo 7 OTDR simultaneously will ensure optimum performance of the network. The Apollo 7 handheld test set performs 6 functions of fibre link, such as loss, optical power, ORL and fault location.

APOLLO 7 SERIES OTDR SPECIFICATIONS

SPECIFICATIONS

Regular OTDR Specifications

		APOLLO7A	APOLLO7B	APOLLO7C
Wavelength (nm)		1310/1550	1310/1550	1310/1550
Dynamic Range (dB)		40/39	35/34	30/28
Pulse Width (ns)		3~20000	3~20000	3~20000
Event Dead Zone (m)		≤0.8	≤0.8	≤0.8
Attenuation Dead Zone (m)		≤ 7/7	≤ 7/7	≤ 7/7
Linearity (dB/dB)		±0.03	±0.03	±0.03
Loss Threshold (dB)		0.01	0.01	0.01
Loss Resolution (dB)		0.001	0.001	0.001
Sampling Resolution (m)		0.125~1	0.125~1	0.125~1
Sampling Points		256K	256K	256K
Distance Uncertainty(m)		±(0.75+0.0010%×distance + sampling resolution)		
Distance Range (km)		≤ 200	≤ 180	≤ 150
Typical Real-time Refresh(Hz)		0.03	0.03	0.03
Memory Capacity		500 traces	500 traces	500 traces
Measurement Time		10s~180m, user defined	10s~180m, user defined	10s~180m, user defined
VFL	Output Power(dBm)	+3	+3	+3
Optical Power Meter	Output Power(dBm)	+10 to -60	+10 to -60	+10 to -60
	Wavelength Range (nm)	780 to 1800	780 to 1800	780 to 1800

PHYSICAL SPECIFICATIONS

Temperature	Operating: -10°C to 50°C; storage: -40°C to 70°C
Relative Humidity	0% to 95% (non-condensing)
Size (H×W×D)	80mm x 135 mm x250 mm
Weight	1.1kg
Power	Li-Ion batteries 8 hours of continuous operation as per Bellcore TR-NWT-001138

APOLLO 7 SERIES OTDR SPECIFICATIONS

SPECIFICATIONS					
PON OTDR Specifications					
	APOLLO7D	APOLLO7E	APOLLO7F	APOLLO7G	APOLLO7H
Wavelength (nm)	1310/1550/1625	1310/1490/1550	1310/1550/1650	1310/1490/1550/1625	1310/1490/1550/1650
Dynamic Range (dB)	39/37/38	39/37/37	39/37/38	39/37/37/38	39/37/37/38
Pulse Width (ns)	3~20000	3~20000	3~20000	3~20000	3~20000
Event Dead Zone (m)	≤ 0.8	≤ 0.8	≤ 0.8	≤ 0.8	≤ 0.8
Attenuation Dead Zone (m)	≤ 7/7/7	≤ 7/7/7	≤ 7/7/7	≤ 7/7/7/7	≤ 7/7/7/7
Linearity (dB/dB)	±0.03	±0.03	±0.03	±0.03	±0.03
Loss Threshold (dB)	0.01	0.01	0.01	0.01	0.01
Loss Resolution (dB)	0.001	0.001	0.001	0.001	0.001
Sampling Resolution (m)	0.125~1	0.125~1	0.125~1	0.125~1	0.125~1
Sampling Points	256K	256K	256K	256K	256K
Distance Uncertainty(m)	±(0.75+0.0010%×distance + sampling resolution)				
Distance Range (km)	≤ 180	≤ 180	≤ 180	≤ 180	≤ 180
Typical Real-time Refresh(Hz)	0.03	0.03	0.03	0.03	0.03
Memory Capacity	500 traces	500 traces	500 traces	500 traces	500曲线
Measurement Time	10s~180m, user defined	10s~180m, user defined	10s~180m, user defined	10s~180m, user defined	10s~180m, 用户自定义
VFL Output Power(dBm)	+3	+3	+3	+3	+3
PHYSICAL SPECIFICATIONS					
Temperature	Operating: -10°C to 50°C; storage: -40°C to 70°C				
Relative Humidity	0% to 95% (non-condensing)				
Size (H×W×D)	80mm x 135 mm x250 mm				
Weight	1.1kg				
Power	Li-Ion batteries 8 hours of continuous operation as per Bellcore TR-NWT-001138				

APOLLO 7 SERIES OTDR SPECIFICATIONS

ORDERING INFORMATION		
Category	Model	Description
Standard Configuration		
Main Frame	APOLLO7A	Dual-wavelength 1310/1550nm OTDR tester, dynamic range 40/39dB.
	APOLLO7B	Dual-wavelength 1310/1550nm OTDR tester, dynamic range 35/34dB.
	APOLLO7C	Dual-wavelength 1310/1550nm OTDR tester, dynamic range 30/28dB.
	APOLLO7D	Tri-wavelength 1310/1550/1625nm PON OTDR tester, dynamic range 39/37/38dB.
	APOLLO7E	Tri-wavelength 1310/1490/1550nm PON OTDR tester, dynamic range 39/37/37dB.
	APOLLO7F	Tri-wavelength 1310/1550/1650nm PON OTDR tester, dynamic range 39/37/38dB.
	APOLLO7G	Qua-wavelength 1310/1490/1550/1625nm PON OTDR tester, dynamic range 39/37/37/38dB.
	APOLLO7H	Qua-wavelength 1310/1490/1550/1650nm PON OTDR tester, dynamic range 39/37/37/38dB.
Battery	LB03V10S0103	One 1 parallel 3 series Lithium polymer rechargeable battery for OTP6100, 10.8V.
Power Adapter	SA148A-24V	One 24V AC/DC, power adapter for OTP6100.
Power Cable	OA1611PWR_2M	One 2-mete-long power cable.
Disc	OA1808_6123_CD	One KXT8000 disc.
Package	OBG6100	One KXT6100 package.
Fibre Jumper	FCFC-0103	One FC/FC port, single-mode, simplex, 9/125, 3-meter-long.
VFL Function	OPAP-VFLatOTDR	OTDR red light VFL testing option.
Optional Configuration		
Functional Option	OPAP-PMatOTDR	OTDR optical power PM testing option.
	OPAP-LSatOTDR	OTDR single-mode optical source testing option.
	OPAP-iOTA	Intelligent fibre link topology analyzer option.
	OPAP-iNET	Intelligent network performance tool option.

APOLLO 8 SFP+/LR

10Gbps 1310nm SFP+ Optical Transceiver, 10Km

1. Features

- SFP+ package with LC connector
- 1310nm DFB Laser and PIN photo detector
- Up to 10km transmission on SMF
- Power dissipation < 1W
- LVPECL compatible data input/output interface
- Low EMI and excellent ESD protection
- laser safety standard IEC-60825 compliant
- Compatible with RoHS
- Compatible with SFF8472

2. Application

- Ethernet
- Fibre Channel



3. Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Storage Temperature	Tst	-40	+85	°C
Supply Voltage	Vcc	0	+3.6	V
Operating Relative Humidity	RH	0	+3.6	%

4. Operation Environment

Parameter		Symbol	Min	Typical	Max	Units
Supply Voltage		V _{cc}	3.15		3.45	V
Operating Case Temperature	Commercial	T _c	-5		+70	°C
Power Dissipation					1	W
Data Rate				10.3125		Gbps

5. Optical Characteristics

(Ambient Operating Temperature -5°C to +70°C, V_{cc} = 3.3 V)

Parameter	Symbol	Min.	Typ.	Max.	Units
Transmitter Section					
Center Wavelength	λ_o	1290	1310	1330	nm
Side-Mode Suppression Ratio	SMSR	35	-	-	dB
Average Output Power	Po	-8	-	+0.5	dBm
Extinction Ratio	Er	3.5	-	-	dB
Dispersion Penalty				3.2	dB
Relative Intensity Noise	RIN12OMA			-128	dB/Hz
Total jitter	Tj	IEEE 802.3ae			
Receiver Section					
Center Wavelength	λ_o		1310		nm
Receiver Sensitivity	Rsen			-12.5	dBm
Stressed Sensitivity	Rsen			-10.5	dBm
Receiver Overload	Rov	-3			dBm
Return Loss		12			dB
LOS Assert	LOS _A	-25			dBm
LOS Dessert	LOS _D			-16	dBm
LOS Hysteresis		0.5		4	

6. Electrical Characteristics

(Ambient Operating Temperature -50°C to +70°C, V_{cc} = 3.3 V)

Parameter		Symbol	Min.	Typ.	Max.	unit
Transmitter Section						
Input Differential Impedance		Z _{in}	90	100	110	Ohm
Data Input Swing Differential		V _{in}	180		700	mV
TX Disable	Disable		2.0		V _{cc}	V
	Enable		0		0.8	V
TX Fault	Assert		2.0		V _{cc}	V
	Deassert		0		0.8	V
Receiver Section						
Output differential impedance		Z _{out}		100		Ohm
Data output Swing Differential		V _{out}	300		800	mV
Rx_LOS	Assert		2.0		V _{cc}	V
	Deassert		0		0.8	V

7. Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Temperature	-10 ~ 75	±3	°C	Internal
Voltage	0 ~ V _{CC}	0.1	V	Internal
Bias Current	0 ~ 100	0.5	mA	Internal
Tx Power	-8 ~ 1	±1	dBm	Internal
Rx Power	-18 ~ 0	±1	dBm	Internal

8. EEPROM INFORMATION (A0)

Addr	Field Size (Bytes)	Name of Field	HEX	Description
0	1	Identifier	03	SFP
1	1	Ext. Identifier	04	MOD4
2	1	Connector	07	LC
3-10	8	Transceiver	10 00 00 00 00 00 00 00	Transmitter Code
11	1	Encoding	06	64B66B
12	1 40-55	BR, nominal	67	10000M bps
13	1	Reserved	00	
14	1	Length (9um)-km	0A	
15	1	Length (9um)	00	
16	1	Length (50um)	00	
17	1	Length (62.5um)	00	
18	1	Length (copper)	00	
19	1	Reserved	00	
20-35	16	Vendor name	57 49 4E 54 4F 50 20 20 20 20 20 20 20 20 20 20	-----
36	1	Reserved	00	
37-39	3	Vendor OUI	00 00 00	
40-55	16	Vendor PN	xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx xx	ASC II
56-59	4	Vendor rev	31 2E 30 20	V1.0
60-61	2	Wavelength	05 1E	1310nm
62	1	Reserved	00	
63	1	CC BASE	XX	Check sum of byte 0~62
64-65	2	Options	00 1A	LOS, TX_DISABLE, TX_FAULT
66	1	BR, max	00	
67	1	BR, min	00	
68-83	16	Vendor SN	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Unspecified
84-91	8	Vendor date code	XX XX XX 20	Year, Month, Day
92-94	3	Reserved	00	
95	1	CC_EXT	XX	Check sum of byte 64~94
96-255	160	Vendor specific		

9. Pin Description

Pins	Name	Discription	NOTE
1	VeeT	Transmitter Ground	
2	Tx Fault	Transmitter Fault Indication	1
3	Tx Disable	Transmitter Disable	2
4	MOD DEF2	Module Definition 2	3
5	MOD DEF1	Module Definition 1	3
6	MOD DEF0	Module Definition 0	3
7	RS0	Not Connected	
8	LOS	Loss of Signal	4
9	RS1	Not Connected	
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Inv. Received Data Output	5
13	RD+	IReceived Data Output	5
14	VeeR	Receiver Ground	
15	VccR	Receiver Power	
16	VccT	Transmitter Power	
17	VccT	Transmitter Ground	
18	TD+	Transmit Data Input	6
19	TD-	Inv. Transmit Data Input	6
20	VeeT	Transmitter Ground	

Notes:

1. TX Fault is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates a laser fault of some kind. In the low state, the output will be pulled to less than 0.8V.
2. TX Disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a 4.7k~10kΩ resistor. Its states are:
 Low (0~0.8V): Transmitter on
 (>0.8V, <2.0V): Undefined
 High (2.0~3.465V): Transmitter Disabled
 Open: Transmitter Disabled
3. MOD-DEF 0,1,2 are the module definition pins. They should be pulled up with a 4.7k~10kΩ resistor on the host board. The pull-up voltage shall be VccT or VccR.

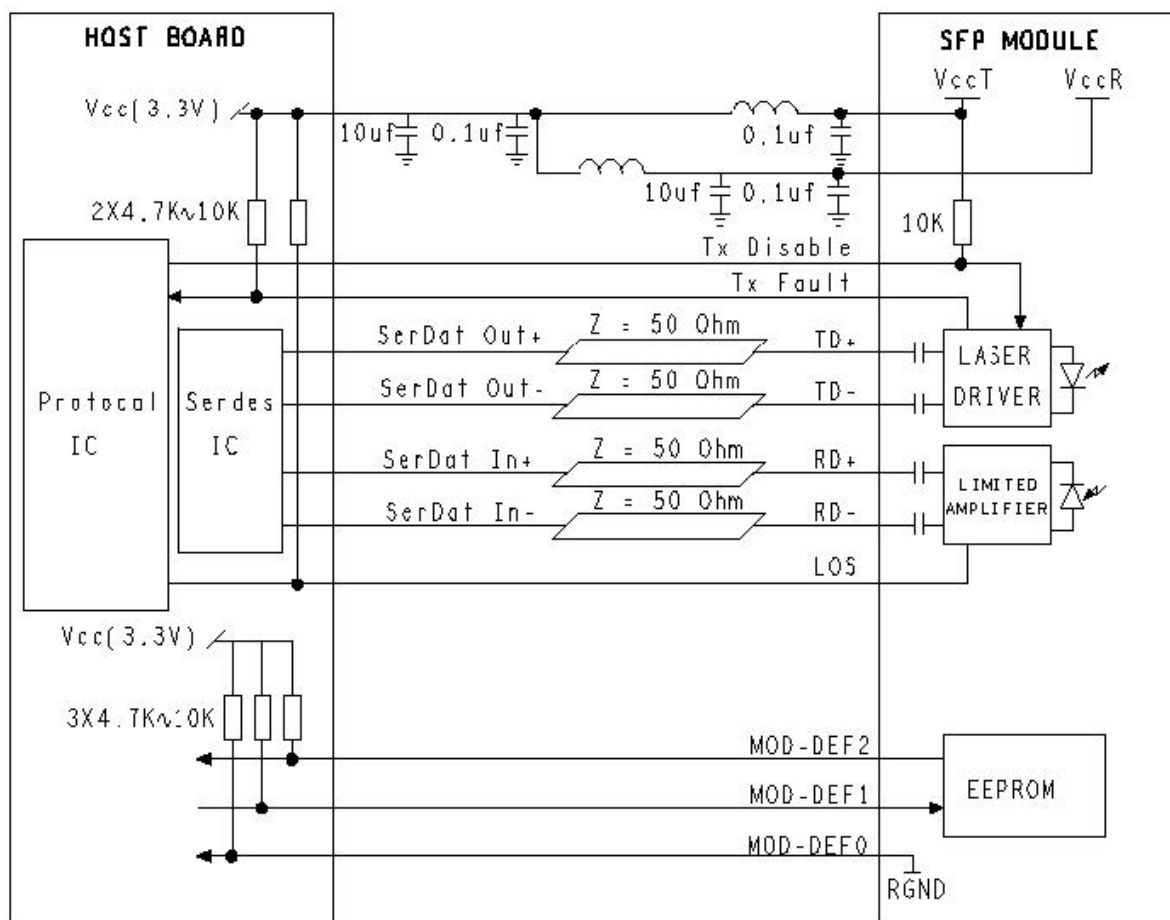
MOD-DEF 0 is grounded by the module to indicate that the module is present

MOD-DEF 1 is the clock line of two wire serial interface for serial ID

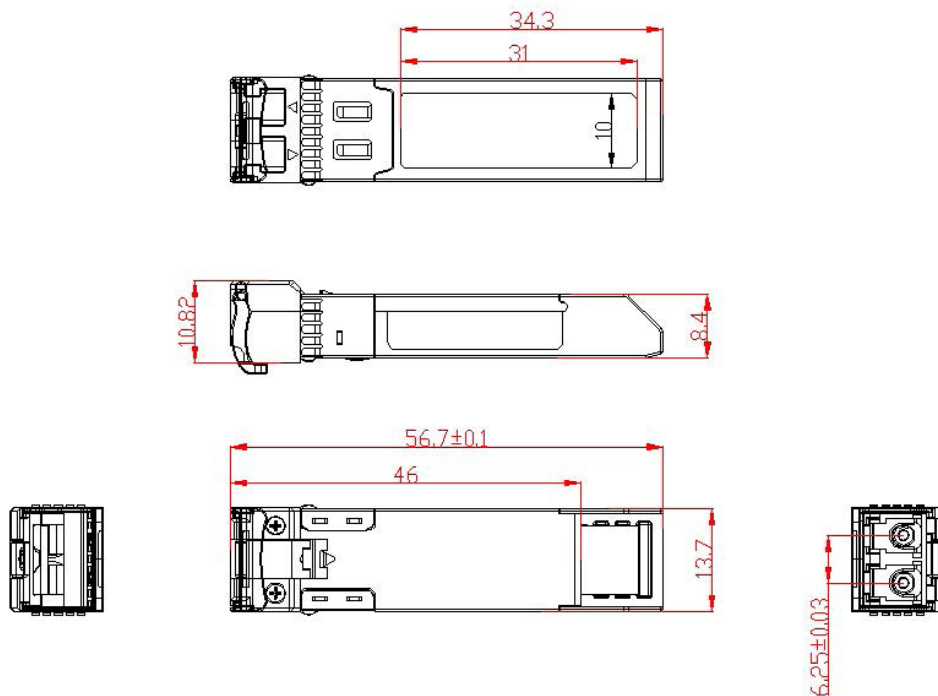
MOD-DEF 2 is the data line of two wire serial interface for serial ID

4. LOS is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates loss of signal. In the low state, the output will be pulled to less than 0.8V.
5. These are the differential receiver output. They are internally AC-coupled 100Ω differential lines which should be terminated with 100Ω (differential) at the user SERDES.
6. These are the differential transmitter inputs. They are AC-coupled, differential lines with 100Ω differential termination inside the module.

10. Recommended Application Circuit



11. Outline Drawing (mm)



• Ordering Information

10G SFP+, SM 1310nm, 10KM, LC, with DDM

SFP+-LR	Commercial	-5~70°C
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APOLLO 8 SFP+/SR

10Gbps 850nm SFP+ Optical Transceiver, 300m

1. Features

- SFP+ package with LC connector
- 850nm VCSEL Laser and PIN photo detector
- Up to 300m transmission on 2000MHz-km MMF
- Power dissipation < 1W
- LVPECL compatible data input/output interface
- Low EMI and excellent ESD protection
- laser safety standard IEC-60825 compliant
- Compatible with RoHS
- Compatible with SFF8472

2. Application

- 10GBASE-SR/10G Ethernet



3. Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Storage Temperature	Tst	-40	+85	°C
Supply Voltage	Vcc	0	+3.6	V
Operating Relative Humidity	RH	0	85	%

4. Operation Environment

Parameter		Symbol	Min	Typical	Max	Units
Supply Voltage		V _{cc}	3.15		3.45	V
Operating Case Temperature	Commercial	T _c	0		+70	°C
Power Dissipation					1	W
Data Rate				10.3125		Gbps

5. Optical Characteristics

(Ambient Operating Temperature 0oC to +70oC, V_{cc} =3.3 V)

Parameter	Symbol	Min.	Typ.	Max.	Units
Transmitter Section					
Center Wavelength	λ_o	840	850	860	nm
RMS Spectral Width	$\Delta\lambda$	-	-	0.45	dB
Average Output Power	Po	-5	-	-1	dBm
Extinction Ratio	Er	3.0	-	-	dB
Dispersion Penalty				3.9	dB
Relative Intensity Noise	RIN ₁₂ OMA			-128	dB/Hz
Total jitter	Tj	IEEE 802.3ae			
Receiver Section					
Center Wavelength	λ_o		850		nm
Receiver Sensitivity	Rsen			-11.5	dBm
Stressed Sensitivity	Rsen			7.5	dBm
Receiver Overload	Rov	-3			dBm
Return Loss		12			dB
LOS Assert	LOS _A	-25			dBm
LOS Dessert	LOS _D			-15	dBm
LOS Hysteresis		0.5		4	

6. Electrical Characteristics

(Ambient Operating Temperature -00C to +700C, Vcc =3.3 V)

Parameter		Symbol	Min.	Typ.	Max.	unit
Transmitter Section						
Input Differential Impedence		Zin	90	100	110	Ohm
Data Input Swing Differential		Vin	180		700	mV
TX Disable	Disable		2.0		Vcc	V
	Enable		0		0.8	V
TX Fault	Assert		2.0		Vcc	V
	Deassert		0		0.8	V
Receiver Section						
Output differential impedence		Zout		100		Ohm
Data output Swing Differential		Vout	300		800	mV
Rx_LOS	Assert		2.0		Vcc	V
	Deassert		0		0.8	V

7. Maximum Supported Distances:

Parameter		Symbol	Min.	Typ.	Max.	unit
Input Differential Impedence		Zin	90	100	110	Ohm
Data Input Swing Differential		Vin	180		700	mV
Fibre Type	850nm OFL BandWidth					
62.5 um	160MHz-km				26	m
	200MHz-km				33	m
50 um	400MHz-km				66	m
	500MHz-km				82	m
	2000MHz-km				300	m

8. Diagnostics

Parameter	Range	Accuracy	Unit	Calibration
Temperature	-5 ~ 75	±3	°C	Internal
Voltage	0 ~ VCC	0.1	V	Internal
Bias Current	0 ~ 120	0.5	mA	Internal
Tx Power	-8 ~ 1	±1	dBm	Internal
Rx Power	-18 ~ 0	±1	dBm	Internal

9. EEPROM INFORMATION (A0)

Addr	Field Size (Bytes)	Name of Field	HEX	Description
0	1	Identifier	03	SFP+
1	1	Ext. Identifier	04	MOD4
2	1	Connector	07	LC
3-10	8	Transceiver	10 00 00 00 00 00 00 00	Transmitter Code
11	1	Encoding	06	64B66B
12	1	BR, nominal	67	10G bps
13	1	Reserved	00	
14	1	Length (9um)-km	00	
15	1	Length (9um)	00	
16	1	Length (50um)	08	
17	1	Length (62.5um)	02	
18	1	Length (copper)	00	
19	1	Reserved	00	
20-35	16	Vendor name	57 49 4E 54 4F 50 20 20 20 20 20 20 20 20 20 20	-----
36	1	Reserved	00	
37-39	3	Vendor OUI	00 00 00	
40-55	16	Vendor PN	XX XX XX XX XX XX XX XX XX XX XX XX XX XX XX XX	ASC II
56-59	4	Vendor rev	31 2E 30 20	V1.0
60-61	2	Wavelength	03 52	850nm
62	1	Reserved	00	
63	1	CC BASE	XX	Check sum of byte 0~62
64-65	2	Options	00 1A	LOS, TX_DISABLE, TX_FAULT
66	1	BR, max	00	
67	1	BR, min	00	
68-83	16	Vendor SN	00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00	Unspecified
84-91	8	Vendor date code	XX XX XX 20	Year, Month, Day
92-94	3	Reserved	00	
95	1	CC_EXT	XX	Check sum of byte 64~94
96-255	160	Vendor specific		

10. Pin Description

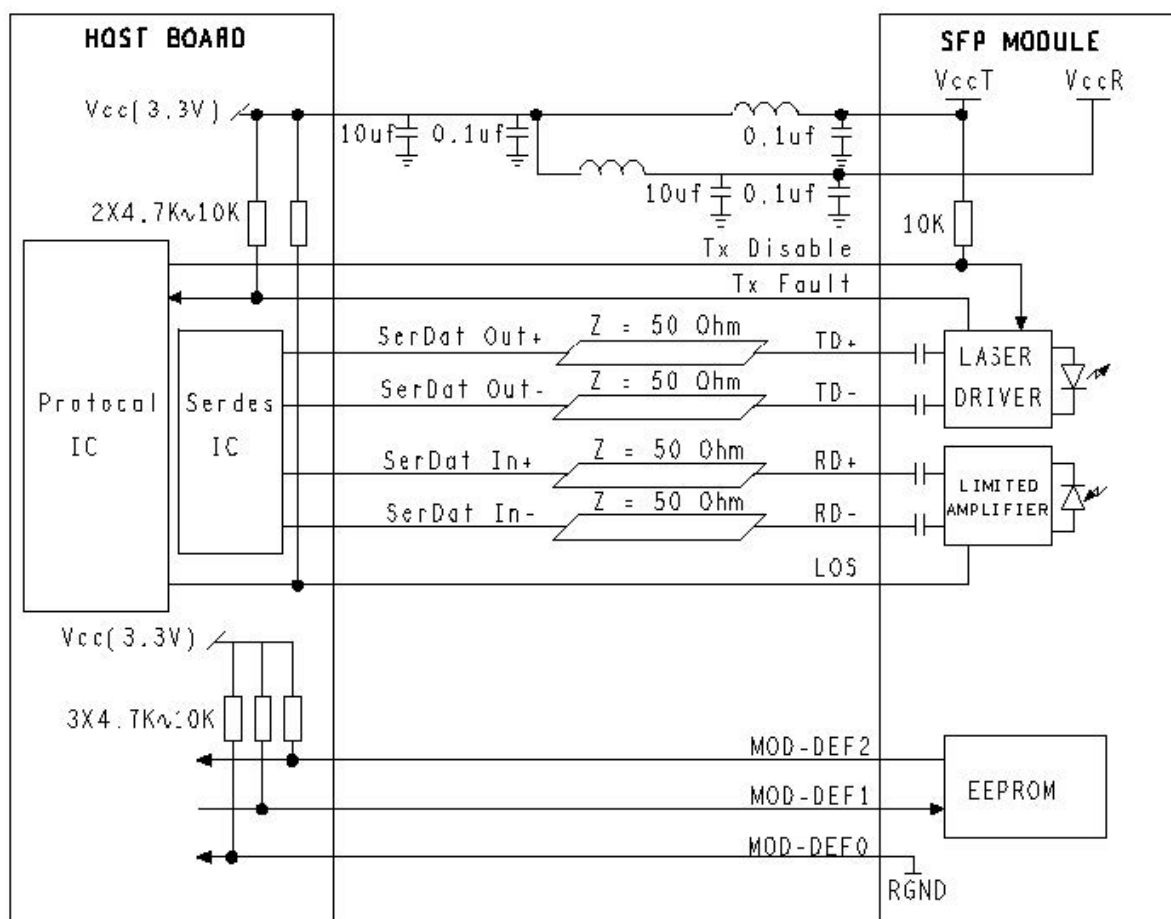
Pins	Name	Discription	NOTE
1	VeeT	Transmitter Ground	
2	Tx Fault	Transmitter Fault Indication	1
3	Tx Disable	Transmitter Disable	2
4	MOD DEF2	Module Definition 2	3
5	MOD DEF1	Module Definition 1	3
6	MOD DEF0	Module Definition 0	3
7	RS0	Not Connected	
8	LOS	Loss of Signal	4
9	RS1	Not Connected	
10	VeeR	Receiver Ground	
11	VeeR	Receiver Ground	
12	RD-	Inv. Received Data Output	5
13	RD+	IReceived Data Output	5
14	VeeR	Receiver Ground	
15	VccR	Receiver Power	
16	VccT	Transmitter Power	
17	VeeT	Transmitter Ground	
18	TD+	Transmit Data Input	6
19	TD-	Inv. Transmit Data Input	6
20	VeeT	Transmitter Ground	

Notes:

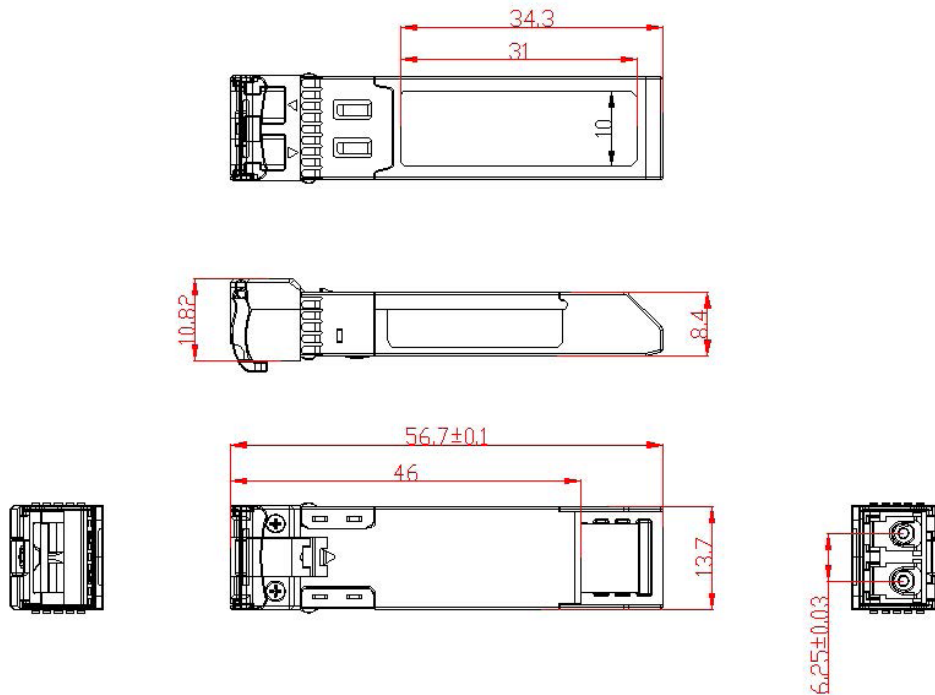
1. TX Fault is an open collector output, which should be pulled up with a 4.7k~10kΩ resistor on the host board to a voltage between 2.0V and Vcc+0.3V. Logic 0 indicates normal operation; logic 1 indicates a laser fault of some kind. In the low state, the output will be pulled to less than 0.8V.
2. TX Disable is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a 4.7k~10kΩ resistor. Its states are:
 Low (0~0.8V): Transmitter on
 (>0.8V, <2.0V): Undefined
 High (2.0~3.465V): Transmitter Disabled
 Open: Transmitter Disabled

3. MOD-DEF 0,1,2 are the module definition pins. They should be pulled up with a $4.7k \sim 10k\Omega$ resistor on the host board. The pull-up voltage shall be V_{ccT} or V_{ccR} .
MOD-DEF 0 is grounded by the module to indicate that the module is present
MOD-DEF 1 is the clock line of two wire serial interface for serial ID
MOD-DEF 2 is the data line of two wire serial interface for serial ID
4. LOS is an open collector output, which should be pulled up with a $4.7k \sim 10k\Omega$ resistor on the host board to a voltage between 2.0V and $V_{cc}+0.3V$. Logic 0 indicates normal operation; logic 1 indicates loss of signal. In the low state, the output will be pulled to less than 0.8V.
5. These are the differential receiver output. They are internally AC-coupled 100Ω differential lines which should be terminated with 100Ω (differential) at the user SERDES.
6. These are the differential transmitter inputs. They are AC-coupled, differential lines with 100Ω differential termination inside the module.

11. Recommended Application Circuit



12. Outline Drawing (mm)



13. Ordering Information

10G SFP+, MM 850nm, 300M, LC, with DDM

SFP+-SR	Commercial	0~70°C
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APOLLO 8 GIGABIT MM SFP,

Duplex LC Connector, 850nm VCSEL for Multimode Fibre, RoHS Compliant



Applications

- Gigabit Ethernet Links
- Fibre Channel Links at 1.06 Gbps
- High Speed Backplane Interconnects
- Switched Backbones

Features

RoHS Pb

- 850nm VCSEL
- Data Rate: 1.25Gbps, NRZ
- Single +3.3V Power Supply
- RoHS Compliant and Lead-free
- AC/AC Differential Electrical Interface
- Compliant with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP)
- Duplex LC Connector
- Compliance with specifications for IEEE-802.3z Gigabit Ethernet at 1.25 Gbps
- Compliance with ANSI specifications for Fibre Channel applications at 1.06 Gbps
- Eye Safety
 - Designed to meet Laser Class 1, complies with EN60825-1

Description

The APOLLO 8 SFPMM is a high performance and cost-effective module for serial optical data communication applications specified for multimode of 1.25 Gb/s. It operates on +3.3V power. The module is intended for multimode fibre, operates at a nominal wavelength of 850nm, and complies with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP). Each module consists of a transmitter optical subassembly, a receiver optical subassembly, and an electrical subassembly. All are housed in a metal package and the combination produces a reliable component.

The module is a duplex LC connector transceiver designed for use in Gigabit Ethernet applications and to provide IEEE-802.3z compliant link for 1.25Gb/s short reach applications. The characteristics are performed in accordance with Telcordia Specification GR-468-CORE.

EMC

Most equipment utilizing high-speed transceivers will be required to meet the following requirements:

- 1) FCC in the United States
- 2) CENELEC EN55022 (CISPR 22) in Europe

To assist the customer in managing the overall equipment EMC performance, the transceivers have been designed to satisfy FCC class B limits and provide good immunity to radio-frequency electromagnetic fields.

EYE SAFETY

The transceivers have been designed to meet Class 1 eye safety and comply with EN 60825-1.

PRODUCT INFORMATION

Model Number	Operating Voltage & SD Output	Wavelength	Output Power	Sensitivity	Distance
SFPMM	3.3V TTL AC/AC	850 nm	-9.5 ~ -4 dBm	≤-17 dBm	550 m(50/125μm) 275 m(62.5/125μm)

ABSOLUTE MAX RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Storage Temperature	TS	-40	85	°C	
Supply Voltage	VCC	0	6	V	
Supply Current	IS		240	mA	

OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	NOTE
Case Operating Temperature	T _A	0		70	°C	
Supply Voltage	V _{CC}	3.1		3.5	V	
Data Input Voltage Swing	V _{ID}	300		1660	mV	

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Transmitter					
Transmitter Supply Current	I _{CCT}		140	mA	
Tx_Disable Input Voltage - Low	V _{IL}	0	0.8	V	
Tx_Disable Input Voltage - High	V _{IH}	2.0	V _{CC}	V	
Tx_Fault Output Voltage - Low	V _{OL}	0	0.8	V	
Tx_Fault Output Voltage - High Receiver	V _{OH}	2.0	V _{CC}	V	
Receiver Supply Current					
	I _{CCR}		100	mA	
Receiver Data Output Differential Voltage	V _{OD}	0.4	1.3	V	
Rx_LOS Output Voltage - Low	V _{OL}	0	0.8	V	
Rx_LOS Output Voltage - High	V _{OH}	2.0	V _{CC}	V	
MOD_DEF (1) , MOD_DEF (2) - Low	V _{IL}	-0.6	V _{CC} × 0.3	V	
MOD_DEF (1) , MOD_DEF (2) - High	V _{IH}	V _{CC} × 0.7	V _{CC} + 0.5	V	

TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Optical Output Power	P _o	-9.5		-4	dBm	1
Extinction Ratio	ER	9			dB	
Center Wavelength	λ_c	830			nm	
Spectral Width (RMS)	$\Delta\lambda$		850	860	nm	
RIN	RIN			0.85	dB/Hz	
Coupled Power Ratio	CPR			-117	dB	
Optical Rise time (20%-80%)	t _r	9			ps	2
Optical Fall time (20%-80%)	t _f		260		ps	3
Output Eye			260			3
Compliant with IEEE802.3z/D5.0						

RECEIVER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Maximum Input Optical Power	P _{max}	-3			dBm	4
Minimum Input Optical Power	P _{min}				dBm	4
Operating Wavelength	λ			-17	nm	
Optical Return Loss	ORL	720 12		860	dB	
Receiver Electrical 3dB Upper Cutoff Frequency	---			1500	MHz	
LOS of Signal - Asserted	P _A	-35			dBm	
LOS of Signal - Deasserted	P _D			-17	dBm	
Loss of Signal -Hysterisis	P _D -P _A	0.5			dB	

Notes:

1. Measured average power coupled into 62.5/125µm, 0.275 NA or 50/125µm, 0.2 NA graded index multimode Fibre.
 2. CPR is measured in accordance with EIA/TIA-526-14A as referenced in IEEE 802.3 section 38.6.10.
 3. These are 20-80% values.
- 7-12
4. Measured with 2 -1 PRBS at BER<10

TIMING CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT
TX_DISABLE Assert Time	t_off			10	µs
TX_DISABLE Negate Time	t_on			1	ms
Time to initialize, include reset of TX_FAULT	t_init			300	ms
TX_FAULT from fault to assertion	t_fault			100	µs
TX_DISABLE time to start reset	t_reset				µs
Receiver Loss of Signal Assert Time (off to on)					
Receiver Loss of Signal Assert Time (on to off)	tA,RX_LOS			100	µs
	tD,RX_LOS			100	

APOLLO 8 GIGABIT SM SFP,

Duplex LC Connector, 1310nm, VCSEL for Multimode Fibre, RoHS Compliant



Applications

- Gigabit Ethernet Links
- Fibre Channel Links at 1.06 Gbps
- High Speed Backplane Interconnects
- Switched Backbones

Features

RoHS Pb

- 1310nm FP LD
- Data Rate: 1.25Gbps, NRZ
- Single +3.3V Power Supply
- RoHS Compliant and Lead-free
- AC/AC Differential Electrical Interface
- Compliant with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP)
- Duplex LC Connector
- Compliance with specifications for IEEE-802.3z Gigabit Ethernet at 1.25 Gbps
- Compliance with ANSI specifications for Fibre Channel applications at 1.06 Gbps
- Eye Safety
Designed to meet Laser Class 1, complies with EN60825-1

Description

The Apollo 8 SM SFP is a high performance and cost-effective module for serial optical data communication applications specified for single mode of 1.25 Gb/s. It operates on +3.3V power. The module is intended for single mode fibre, operates at a nominal wavelength of 1310nm, and complies with Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP). Each module consists of a transmitter optical subassembly, a receiver optical subassembly, and an electrical subassembly. All are housed in a metal package and the combination produces a reliable component.

The module is a duplex LC connector transceiver designed for use in Gigabit Ethernet applications and to provide IEEE-802.3z compliant link for 1.25Gb/s intermediate reach applications.

The characteristics are performed in accordance with Telcordia Specification GR-468-CORE.

EMC

Most equipment utilizing high-speed transceivers will be required to meet the following requirements:

- 1) FCC in the United States
- 2) CENELEC EN55022 (CISPR 22) in Europe

To assist the customer in managing the overall equipment EMC performance, the transceivers have been designed to satisfy FCC class B limits and provide good immunity to radio-frequency electromagnetic fields.

Eye Safety

The transceivers have been designed to meet Class 1 eye safety and comply with EN 60825-1.

PRODUCT INFORMATION

Model Number	Operating Voltage & SD Output	Distance	LD Type & Wavelength	Output Power	Sensitivity
SFP-S10	3.3V TTL AC/AC	10 km	1310 nm FP	-9.5 ~ -3 dBm	≤-21 dBm

ABSOLUTE MAX RATINGS

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Storage Temperature	TS	-40	85	°C	
Supply Voltage	VCC	0	6	V	
Data Input Voltage	---	0	Vcc	V	
Supply Current	IS		300	mA	

OPERATING CONDITIONS

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	NOTE
Case Operating Temperature	T _A	0		70	°C	
Supply Voltage	VCC	3.1		3.5	V	
Data Input Voltage Swing	VID	300		1860	mV	

ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	MAX	UNIT	NOTE
Transmitter					
Transmitter Supply Current	I_{CCT}		200	mA	
Tx_Disable Input Voltage - Low	V_{IL}	0	0.8	V	
Tx_Disable Input Voltage - High	V_{IH}	2.0	V_{CC}	V	
Tx_Fault Output Voltage - Low	V_{OL}	0	0.8	V	
Tx_Fault Output Voltage - High Receiver	V_{OH}	2.0	V_{CC}	V	
Receiver Supply Current					
	I_{CCR}		100	mA	
Receiver Data Output Differential Voltage	V_{OD}	0.4	1.3	V	
Rx_LOS Output Voltage - Low	V_{OL}	0	0.8	V	
Rx_LOS Output Voltage - High	V_{OH}	2.0	V_{CC}	V	
MOD_DEF (1) , MOD_DEF (2) - Low	V_{IL}	-0.6	$V_{CC} \times 0.3$	V	
MOD_DEF (1) , MOD_DEF (2) - High	V_{IH}	$V_{CC} \times 0.7$	$V_{CC} + 0.5$	V	

TRANSMITTER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Optical Output Power	P_o	-9.5		-3	dBm	1
Extinction Ratio	ER	9			dB	
Center Wavelength	λ_c	1275			nm	
Spectral Width (RMS)	$\Delta\lambda$		1355		nm	2
RIN	RIN		3		dB/Hz	2
Optical Rise time (20%-80%)	t_r		-117		ps	
Optical Fall time (20%-80%)	t_f		260		ps	3
Output Eye			260			3

Compliant with IEEE802.3z/D5.0

RECEIVER ELECTRO-OPTICAL CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT	NOTE
Maximum Input Optical Power	P _{max}	-3			dBm	4
Minimum Input Optical Power	P _{min}				dBm	4
Operating Wavelength	λ			-21	nm	
Optical Return Loss	ORL	1100 12		1600	dB	
Receiver Electrical 3dB Upper Cutoff Frequency	---			1500	MHz	
LOS of Signal - Asserted	P _A	-35			dBm	
LOS of Signal - Deasserted	P _D			-20	dBm	
Loss of Signal -Hysterisis	P _D -P _A	0.5			dB	

Notes:

1. Measured average power coupled into 9/125μm single mode Fibre.
2. In conformance with IEEE802.3z Figure 59-3 and FC-PI Figure 18.
3. These are 20-80% values.

7-12

4. Measured with 2 -1 PRBS at BER<10

TIMING CHARACTERISTICS

PARAMETER	SYMBOL	MIN	TYP.	MAX	UNIT
TX_DISABLE Assert Time	t _{off}			10	μs
TX_DISABLE Negate Time	t _{on}			1	ms
Time to initialize, include reset of TX_FAULT	t _{init}			300	ms
TX_FAULT from fault to assertion	t _{fault}			100	μs
TX_DISABLE time to start reset	t _{reset}				μs
Receiver Loss of Signal Assert Time (off to on)					
Receiver Loss of Signal Assert Time (on to off)	t _{A,RX_LOS}			100	μs
	t _{D,RX_LOS}			100	

APOLLO 9 VFI

We use DFB-LD as the emitting component of the Apollo 9 Visible Fault Locator. Driven by constant current source, the indicator can emit stable red laser. The product can be used to inspect fibre failure when connected with an optical interface and can be inserted into single mode or multi mode optical fibre. It is an indispensable tool in fibre project constructions, fibre network maintenance, optical component manufacture and research.

Technical parameter:

Wavelength of optical source: 650±10nm

Applicable fibre type: single mode or multi mode

Output power in single mode: 10 mW

Power: two 1.5V batteries

Continuous working time of power: ≥20 hours

Working temperature: 10~+60°C (not dewing)

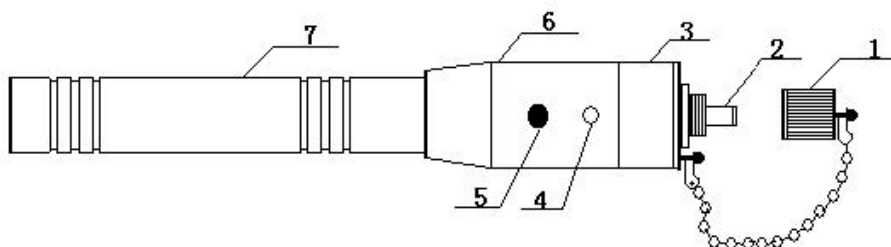
Storage temperature: -40~+85°C

Material of the shell: Cu-alloy

Dimension: φ24×170mm (without interface)

Weight: 160g (without batteries)

Outer structure:



1-dust cap 2-optical interface 3-head of the indicator

4-LED 5-switch 6-body 7-tail

Usage:

1. Screw off the tail, then put two 1.5V batteries into the tail,.(Caution: anode of batteries point to bottom of the indicator, cathode of batteries contact cathode of the indicator).
2. Connect the body with the tail, and open dust cap, then press the switch. You will see the red laser emitting from the optical interface, at the same time, LED will be lit up (Caution: under no circumstance look into the beam directly, eye damage could occur.)
3. Press the switch again, to change the beam to pulse mode, and LED synchronize with light-emitting (pulse frequency will be controlled at 0.5-2.0 Hz).
4. Press the switch again, the optical source will turn off. (Switching cycle mode is: continuous-pulse-shut).
5. You should insert the Fibre which you want to inspect into optical interface, then press the switch to choose working mode of the light source (continuous or pulse).
6. When you finish the inspection, please screw on the dust cap. If you don't plan to use the indicator for a long time, you must take out the batteries.

Maintenance and caution:

1. Look at a laser directly is harmful, you must protect your eyes.
2. Generally, the higher the temperature, the shorter is life of the Apollo 9 VFI. Avoid high temperatures when you use it.
3. The head of fibre must clear while the Apollo 9 VFI operates.
4. When the Apollo 9 VFI is not in use please screw on the dust cap to protect the end face.
5. Take out the batteries when you don't use it.

APOLLO 14 FIBRE OPTIC CLEANING PENS



Apollo 14 fibre optic connector cleaning pens utilise a specially formulated dry cloth for a thorough and efficient cleaning of various fibre optic end-faces. The Apollo 14 fibre optic cleaning pens have been developed to work with the LC, SC, FC, and ST connectors, this instrument cleans the ferrule end faces removing dust, oil, and other debris without nicking or scratching the end face. The Apollo 14 fibre optic connector cleaning pens allow for substantial labor savings over conventional, high volume applications and have been adopted by manufacturers and carriers worldwide.

FEATURES

- Easy pushing motion engages connector and initiates cleaner
- Disposable with 800+ cleanings per unit
- Made from anti static resin
- Cleaning micro fibres are densely stranded and debris free
- Extendable tip reaches recessed connectors
- Cleaning system rotates 180 for a full sweep
- Audible click when engaged

APPLICATIONS

- Fibre network panels and assemblies
- Outdoor FTTX applications
- Cable assembly production facility
- Testing laboratories
- Server, switches, routers and OADMS with SC and LC interface

ORDERING INFORMATION:

- 125CP- suitable for 1.25mm end faces: LC
- 25CP- suitable for 2.5mm end faces: ST/SC/FC

APOLLO 15 FIBRE OPTIC CLEANING TAPE



Apollo 15 fibre optic connector cleaning tapes utilise a specially formulated dry cloth for a thorough and efficient cleaning of various fibre optic end-faces. The Apollo 15 Fibre Optic cleaning tapes eliminate the need for hazardous cleaning fluids that can leave a residue on the end face. the cloth is extremely effective in removing grease, dust and other contaminants. The Apollo 15 fibre optic connector cleaning tapes allow for substantial labor savings over conventional, high volume applications and have been adopted by manufacturers and carriers worldwide.

FEATURES

- Suitable for cleaning tasks in factories and field applications
- Environmentally friendly
- Achieve high quality cleaning without alcohol or other solvents.
- The cleaning tape is replaceable thus reducing the long term costs
- This is an ideal tool for use when the connector face is available to you for cleaning
- Specifically designed to clean ST, SC, FC, SMA D-4, DIN, and Diamond connector faces
 - Connector cleaned: SC, SC2, FC, ST,DIN, D4 MU, LC, MT
 - More than 500 times/cartridge
 - Size: 125mm (Width) X 70mm (Height) X 29mm (Thickness)
 - Environment Operation Temperature -20°C to 50°C
 - Humidity 20% to 80%R.H.
 - Preservation Temperature -20°C to 60°C
 - Replacement reel .

ORDERING INFORMATION:

PART NUMBER: CLTPECASS- Cleaning Tape Cassette

CLTPE- Cleaning Tape Replacement

APOLLO 16 FIBRE OPTIC ATTENUATORS:



An fibre optic attenuator, is a device used to reduce the power level of an optical signal. Optical attenuators are commonly used in fibre optic communications, either to test power level margins by temporarily adding a calibrated amount of signal loss, or installed permanently to properly match transmitter and receiver levels. Apollo 16 fibre optic attenuators are available in a wide range of connectors types and loss insertion values.

APPLICATIONS

- Fibre Optical distributing frame
- Fibre Optical network system
- High speed fibre optical transmission system
- CATV system
- Long distance DWDM system
- Optical add-drop multiplexers(OADM)

FEATURES

- High return loss
- Simple structure
- Max operation power(1W)
- Low wavelength relativity
- Low polarization related loss

SPECIFICATIONS

Item	
Attenuation Value	1~25dB
Attenuation Precision	$\leq 5\text{dB} \pm 0.3\text{dB}$, $\geq 10\text{dB} \pm 1\text{dB}$, $\geq 10\text{dB} \pm 10\%$
Return Loss	PC $\geq 55\text{dB}$; APC $\geq 60\text{dB}$
Operation Wavelength	1310nm and 1550nm(SM)
Polarization Loss	$\geq 0.1\text{dB}$
Operation Temperature	-40℃~ +75℃
Storage Temperature	-40℃~ +85℃
Temperature(Un-encapsulation)	95%RH Apply Telecordia Standard(GR-910-CORE)

APOLLO 17 CLEANING KITS

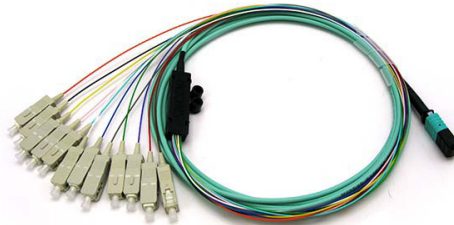


The Apollo 17 fibre optic cleaning kits contains high technology products that can be used to clean and maintain fibre optic communication networks. This product has the flexibility to be used with various types of connector interface and equipment.

The field applications for the Apollo 17 fibre optic cleaning kits include: optical communication stations, transfer rooms, laboratories, fibre optic cable network operation and routine maintenance of any fibre optic network.

INCLUDED IN THE KIT

- Apollo 15 Cleaning Tape x 1
- Fibre Optic Cleaning Swabs 1.25mm x 10
- Fibre Optic Cleaning Swabs 2.5mm x 10
- IPA Wipes x 10
- Can of Clean Air x 1
- Apollo 15 Cleaning tape replacement reel x 1



MPO is short for “Multi-fibre Push On”. MPO cables can only be manufactured in a factory and are not able to be assembled at site as some other connector types are.

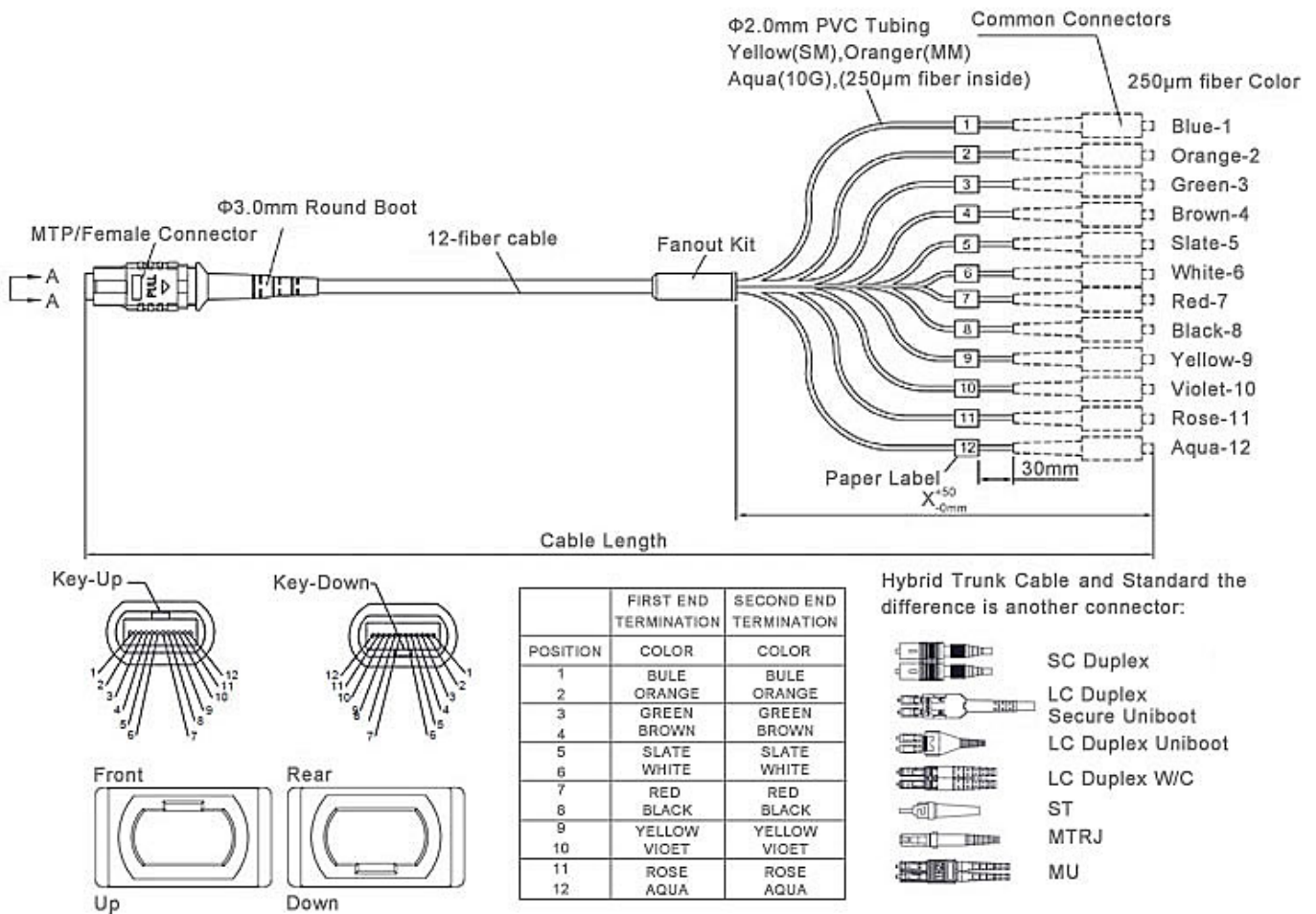
The MPO connector uses tightly held tolerance stainless steel guide pin tips with an elliptical shape. The elliptical shaped guide pin tips improves guidance and reduces guide hole wear over time.

MTP/MPO connectorised ribbon fibre cable assemblies provide reliable high performance interconnects of up to 24 fibres in a small footprint. The MTP/MPO connectors utilize the precision moulded NTT compatible ferrule which connects four to 24 fibres using bare ribbon or ruggedized ribbon cable. Alignment between mating ferrules is accomplished using two precision guide pins that are pre-installed into the designated male connector.

MTP/MPO connectors are used with single-mode and multimode fibre-optic cables. The MTP/MPO is a connector manufactured specifically for a multifibre ribbon cable. The MTP/MPO single-mode connectors have an angled ferrule allowing for minimal back reflection, whereas the multimode connector ferrule is commonly flat. The ribbon cable is flat and appropriately named due to its flat ribbon-like structure, which houses fibres side by side in a jacket. The typical insertion loss for matched MTP/MPO connectors is 0.25 db. From a design perspective, it is recommended to use a loss margin of 0.5 dB or the vendor recommendation for MTP/MPO connectors.

MPO FAN OUT CABLES

Because all MPO Cables must be assembled at the factory, you may need to buy Fan Out cables to connect to legacy/existing fibre optic plant to single core connectors such as SC in your horizontal plant. (note – a single 40GbE port uses eight fibre cores or four pairs).



SPECIFICATIONS

APOLLO MPO CABLE:

Item	SM	MM
Insertion Loss	$\leq 0.5\text{dB}$	
Return Loss	$\geq 45\text{dB}$	$\leq 20\text{dB}$
Repeatability	$\leq 0.2\text{dB}$	
Durability	$\geq 1000\text{matings}$	
Tensile Strength	$\geq 10\text{Kg}$	
Operating Temperature	-40 to $+80^{\circ}\text{C}$	

APOLLO 19 OPTICAL FIBRE IDENTIFIER



Description

The Apollo 19 Optical Fibre Identifier can quickly identify the direction of transmitted fibre and display the relative core power without interrupting the current service. The Fibre identifier recognizes modulation like, 270Hz, 1KHz and 2KHz with continuous audible tone. There are four adapter heads available: Ø0.25, Ø0.9, Ø2.0 and Ø3.0. This OFI is powered by 2 pcs standard AA batteries.

Features

- Easy-to-use “ONE KEY” operation;
- Efficiently identifies the fibre transmission direction and frequency tone (270Hz, 1KHz, 2KHz) with an audible warning;
- Displays the relative core power;
- 4 Easy-to-replace adaptors;
- Durable metal housing and quality construction;
- Lower power indication.
- It is portable and comes with its own carry case.

Specifications

Identified Wavelength Range	800-1700 nm	
Identified Signal Type	CW, 270Hz±5%, 1kHz±5%, 2kHz±5%	
Detector Type	Ø1mm InGaAs 2pcs	
Adapter Type	Ø0.25 , Ø0.9, Ø2.0, Ø3.0	
Signal Direction	Left & Right LED	
Singe Direction Test Range (dBm, CW/0.9mm bare Fibre)	-46~10(1310nm)	
	-50~10(1550nm)	
Signal Power Test Range (dBm, CW/0.9mm bare Fibre)	-50~+10	
Signal Frequency Display (Hz)	270, 1k, 2k	
Frequency Test Range (dBm, Average Value)	Ø0.9, Ø2.0, Ø3.0	-30~0 (270Hz,1KHz)
		-25~0 (2KHz)
	Ø0.25	-25~0 (1KHz,2KHz)
		-20~0 (2KHz)
Insertion Loss(dB, Typical Value)	0.8 (1310nm)	
	2.5 (1550nm)	
Alkaline Battery(V)	2pcs AAA batteries	
Operating Temperature(°C)	-10- +60	
Storage Temperature(°C)	-25- +70	
Dimension (mm)	196X30.5X27	
Weight (g)	195	

APOLLO 21 GIGABIT MEDIA CONVERTORS

Apollo 5 Series Gigabit Fibre Media Converters can convert Optical—Electric Ethernet signals between 10/100/1000M UTP interface (TX) and 1000M optical fibre interface (FX). The traditional 10/100/1000M gigabit Ethernet can be extended to the distance of 100km through an optical fibre link. It possesses stable performance and good quality by adopting latest IC packages. 6 Group LED indicated lights can fully monitor the working conditions the media convertor. It is easy for end-users to observe network operation. Apollo 5 Series Gigabit Converters can be used alone alternatively they can be produced in the form of a Converter Card to be inserted to a 16 slot rack unit. . The Apollo 5 Media Converter series are suitable for use in a Data Network Centre.



Main Features

- Auto negotiation function allows UTP ports to auto select 10/100/1000M and Full Duplex or Half Duplex.
- The UTP port supports the connection of MDI/MDI-X auto crossover.
- Multimode Fibre: the max distance up to 2km
- Singlemode Fibre: the max distance up to 100km
- Supporting the max 1536 byte Ethernet packet
- Supporting flow control
- Adopting internal power supply

Technical Specifications

- Operating standards: IEEE802.3z/AB, 1000Base-T and 1000Base-SX/LX
- MAC address table: 4K
- Data Buffer: 256K
- Connector: UTP: RJ-45, 10/100/1000Mbps; Fibre: SC, 1000Mbps
- Cable :
- UTP cable: Cat 5e or Cat 6 (the max distance up to 100m)
- Fibre : multimode : 50/125, 62.5/125 μ m (the max distance up to 2km)
 - singlemode : 8.3/125, 8.7/125, 9/125 μ m (the max distance up to 100km)
- Flow control : Full Duplex: IEEE802.3x
 - Half Duplex: back pressure.
- Power: AC 220V(170-260V) 50Hz; DC 5V, 2A
- Ambient temperature: 0 ~ +50°C
- Storage temperature: -20 ~ +70°C
- Humidity: 5% ~ 90%
- Dimensions: 40 (high) x 110 (width) x 140 (length) mm

Fibre Information

Type	Connector	Fibre type	Max. distance	Wavelength	TX power	Sensitivity	Link Budget
APOLLO21A	SC	Multimode	2km	850nm	-11~-3dBm	-18dBm	7dBm
APOLLO21B	SC	Multimode	2km	1310nm	-11~-3dBm	-20dBm	10dBm
APOLLO21C	SC	Singlemode	20km	1310nm	-10~-3dBm	-21dBm	11dBm
APOLLO21D	SC	Singlemode	40km	1310nm	-4~-0dBm	-25dBm	21dBm
APOLLO21E	SC	Singlemode	60km	1310nm	-0~3dBm	-26dBm	26dBm
APOLLO21F	SC	Singlemode	80km	1550nm	-2~2dBm	-26dBm	24dBm
APOLLO21G	SC	Singlemode	100km	1550nm	1~3dBm	-27dBm	28dBm

APOLLO 22 FUSION SPLICER

The Apollo 6 V Groove Fusion splicer is an industry leader in its design and Innovation. The 5.6 inch TFT color LCD ultra-clear display resolution and easy to use navigation keys provide optimum user friendliness. The Apollo 6 also allows for software upgrades via and easy to use USB port. The long life battery (up to 6 hours) and fast splice time Make this one of the most priced units in the market without compromising quality and reliability.



KEY FEATURES

- **Color LCD monitor & 256 magnification**
- **Compact & Light weight**
- **Reversible monitor with control panel on each side**
- **Max. wind velocity of 15m/s.**
- **8 Sec. splice time, 40 Sec. tube-heat time**
- **Simultaneous X and Y views**
- **Up to 6hr internal battery**
- **SYSTEM TEST ensures the best possible result**
- **User programmable**
- **Auto check fibre end face**
- **Auto calibrate parameters**
- **Store 8000 groups of splice results**
- **Multiple language options**

SPECIFICATIONS

Applicable Fibres:	SM、MM、DS、NZ-DS、EDF
Cladding diameter:	100 to 150um
Coating diameter:	100 to 1000um
Fibre cleaved length:	8-22mm (standard)
Splicing mode:	Auto & Manual
Average splice loss:	0.02dB(SM)、0.01dB(MM)、0.04dB(DS) 、0.04dB(NZDS)
Return loss:	≥ 60dB
Environment conditions:	-25~+50℃ (operation temperature), 0~95%RH (humidity), 0~5000m (altitude)
Storage environment:	-40~+80℃ (temperature), 0~95%RH (humidity)
Protection sleeve length:	20mm、40mm、60mm
Tension test:	2.0N (Standard)
Language:	English, Chinese, Korean, Russian, Spanish, Portuguese, German, French
Interface:	RS232 interface & video output
Power supply:	AC adaptor: 85~260V input voltage
	Internal battery: 12V voltage, 10Ah, more than 200 times of continuous splices and heats
	DC adaptor: 12V voltage, optional multipurpose external battery
Dimensions:	170 (W) × 140 (H) × 170 (D) mm
Weight:	3.3kg

■ Standard package —

(1) ↗	Arc Fusion Splicer ↗	 ↗
(2) ↗	Li-Battery ↗	 ↗
(3) ↗	AC adaptor ↗	 ↗
(4) ↗	AC Power Cord ↗	 ↗
(5) ↗	Charger ↗	 ↗
(6) ↗	Spare Electrodes ↗	 ↗
(7) ↗	Instruction Manual ↗	 ↗
(8) ↗	Carrying Case ↗	 ↗
(9) ↗	Cooling salver ↗	 ↗
(10) ↗	Charger cord ↗	 ↗
(11) ↗	Fiber stripper ↗	 ↗
(12) ↗	Fiber cleaver ↗	 ↗

Apollo Distribution Cable (Indoor/Outdoor Cable)

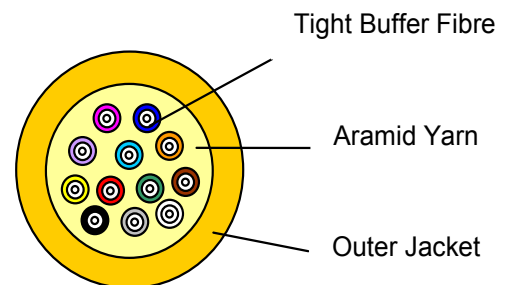
Apollo Fibre Optic distribution cables use top quality material to guarantee excellent results across and number of different uses including: indoor, inside building buildings and FTTD.

- It can supply bandwidth, transmission speech、data、TV and image.
- Characteristic: small diameter、lightweight and flexible so it is easy to install, maintain and manage.

(Characteristic)

*Excellent stripping performance of tight buffer Fibre

*Small cable diameter and bending radius allow it to be easily installed in small places



(Geometrical Characteristics)

Distribution Cable Type	2	4	6	8	12	24	48
Distribution Cable Diameter(mm)	5.00	5.10	5.30	6.00	6.60	8.50	10.50
Distribution Cable Weight(kg/km)	20	20	22	25	28	50	
TBF Diameter(μm)	900±50						

(Mechanical Characteristics)

Max Load(N)	Long Term	130	130	130	130	130	200
	Short Term	440	440	440	440	440	660
Bending Radius(CM)	Dynamic	20×D (D: Cable Diameter)					
	Static	10×D (D: Cable Diameter)					

(Fibre)

Fibre Type(core/cladding dimension)	8.3/125, 50/125, 62.5/125
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(Transmission Characteristics)

	SMF	50/125	62.5/125
	1310/1550(nm)	850/1300(nm)	850/1300(nm)
(dB/km) Max Attenuation(dB/km)	0.45/0.30	3.5/1.5	3.5/1.5
(dB/km) AVG. Attenuation(dB/km)	0.40/0.25	3.0/1.0	3.0/1.0
(MHz•km) Min Bandwidth(MHz•km)	---	400/400	160/500

(Environmental Characteristics)

(Storage Operating Temperature)	-20°C ~ +60°C
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Ordering information:

Singlemode:

- SM4- 4 Core Singlemode Indoor/Outdoor Cable
- SM6- 6 Core Singlemode Indoor/Outdoor Cable
- SM8- 8 Core Singlemode Indoor/Outdoor Cable
- SM12- 12Core Singlemode Indoor/Outdoor Cable
- SM24- 24 Core Singlemode Indoor/Outdoor Cable

OM3 50 Micron:

- OM36- 6 Core 50 micron OM3 Indoor/Outdoor Cable
- OM312- 12 Core 50 micron OM3 Indoor/Outdoor Cable
- OM324- 24 Core 50 micron OM3 Indoor/Outdoor Cable

OM4 50 Micron:

- OM46: 6 Core 50 micron OM4 Indoor/Outdoor Cable
- OM412: 12 Core 50 micron OM4 Indoor/Outdoor Cable
- OM424: 24 Core 50 micron OM3 Indoor/Outdoor Cable

APOLLO TECHNOLOGY PRE-TERMINATED CABLES



Description:

Apollo Technology are able to manufacture a large range of pre-terminated cable made to your exact specifications. If you require them in a specific material, break out type or connector configuration just let us know and we are more than happy to assist..

Features:

- All Cables come ready to install with comprehensive test results.
- Plug and Play solution- save time money and effort.
- Pulling option available to assist in easy deployment in the field.
- A variety of colors and connector types allow for simple customisation.

To order please complete the simple form below and email or call us at:

sales@apollootech.com.au

0408 449 815/ 0402729855

Fibre Type:		Tick/Enter value
OM1		
OM3		
OM4		
Singlemode		
Number of cores:		
Cable Length in m:		
Connector Type end 1:		
LC		
SC		
ST		
MTRJ		
SC Angled		
FC		
Connector Type end 2:		
LC		
SC		
ST		
MTRJ		
SC Angled		
FC		
Pulling Eye:	End 1	
	End 2	
Breakout Length in cm:		
Zero Fibre size:		1.8mm/ 3.0mm

Apollo 5 OTDR

Features

- *One-key operation, easy to operate*
- *Smart portable OTDR, 4.3'TFT LCD display*
- *Firm, durable, shock-proof, moisture-proof*
- *Automatic trouble-shooting and calibration*
- *(VFL)Visual fault location function*
- *Built-in lithium rechargeable battery, more than 8 hours working hours*
- *Support USB and RJ45 interface, more convenient to manage files*
- *Toolbox PC simulation software*



SPECIFICATIONS

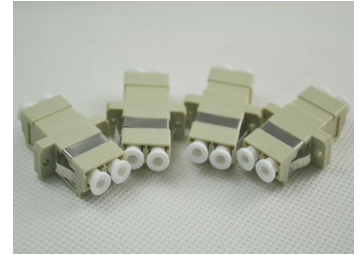
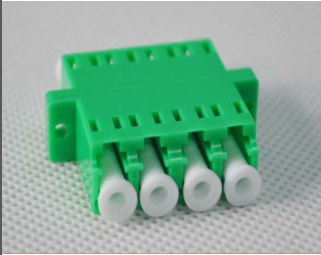
Model	Wavelength(nm)	Dynamic Range(dB)	Event Dead Zone (m)	Attenuation Dead Zone (m)
APOLLO5	1310±20/1550±20	29/27	<3m	<25m
Distance range(Km)	5m-160km			
Pulse width(ns)	5ns~20µs			
Measurement time	user-defined(smart link),with real-time measurement function			
Distance accuracy(m)	±(1m +0.001%×range + sampling resolution)			
Attenuation accuracy	±0.05dB/dB			
Loss limit(dB)	0.01dB			
Loss resolution(dB)	0.001dB			
Sampling resolution(m)	0.1m			
Sampling points	64000			
Data storage	3000 items			

OTHER INDICATORS

LCD type	4.3 inch TFT colorized LCD
Laser adapter	FC/PC, SC/PC(option)
Interface	USB
Battery	built-in rechargeable Li-ion battery charging time <4 hours working time >8 hours
Power	AC/DC adapter input AC90-240V ±10% output DC12V
Operating temperature	0°C~40°C
storage temperature	-20°C~70°C
relative humidity	<80%
weight	<1kg
dimensions (mm)	200*126*62mm

APOLLO TECHNOLOGY FIBRE OPTIC ADAPTORS

Fibre Optic Adaptor



Apollo Technology Pty Ltd Fibre Optic Adaptor or Couplers are available in a wide range of materials and colors. These adaptors can be used in all manner of application, including Telecommunications, Data processing networks, LAN, CATV and with Optical test equipment.

These products would be used in conjunction with Apollo Technologies wide range of :

- Fibre Optic Patch Cables
- Fibre Optic Enclosures/Patch Panels
- Pre-Terminated Fibre Optic Cable assemblies
- Fibre Optic Pigtails

Features

- Low insertion loss value
- Choice of housing and sleeve materials
- Stable capability and high reliability
- Excellent mechanical capability

Specifications

Item	Value
Insertion loss	≤0.2dB
Insert-pull test	1000 times
Repeatability	≤0.1
Tensile strength	≥10kg
Operating temperature	-40°C~ +85°C
Sleeve Materials	Zro2,Brass or Nickel

APOLLO TECHNOLOGY FIBRE OPTIC PATCH LEADS

Fibre Optic Patchleads



Apollo Technology Pty Ltd fibre optic patch leads are simplex or duplex fibre optic cables terminated at either end with connectors that allow them to be quickly and easily connected to an optical switch, fibre optic termination tray, an SFP or other various types of telecommunication equipment.

Apollo Technology Pty Ltd have the flexibility to be able to offer OM1, OM3, OM4, OS2 in both standard cable and RBR (Reduced Bend Radius) cable configurations. A variety of colors and connector types are also available. Cable jacket sizes include 1.8mm, 2.0mm and 3.0mm variations.

Please advise us at the time of quote if there are any specific requirements as we are more than happy to customise the leads to exactly what you require.

Some key characteristics of Apollo Technology Pty Ltd fibre optic patch leads are:

1. High Return Loss & Low Insertion Loss
2. High reliability and stability
3. Green Production, CE, RoHS Standard

There are a number of applications in which Apollo Technology fibre optic patch leads can be used:

1. Optical fibre communications systems.
2. Optical fibre access networks
3. Optical fibre CATV
4. Optical fibre test equipment (SFP's, Switches, Media Convertors)
5. Optical fibre data communication

Technical Specifications:

Mode	Single mode		Multimode
Polish	UPC	APC	PC
Insertion Loss	≤0.2dB	≤0.3dB	≤0.2dB
Return Loss	≥55dB	≥65dB	≥35dB
Interchangeability	≤0.2dB		
Salt Spray	≤0.1dB		
Repeatability	≤0.1dB (1000 times)		
Vibration	≤0.2dB (550Hz 1.5mm)		
Temperature	≤0.2dB (-40+85 sustain 100 hours)		
Humidity	≤0.2dB (+25+65 93 R.H.100 hours)		
Apex Offset	0µm ~ 50µm		
Radius of Curvature	7mm ~ 25mm		
Standards-Compliant	ROHS,IEC and GR-326		

Fibre cable performance specifications

Fibre type	Min. Bandwidth	Distance	attenuation
62.5/125	850/1300nm 200/500 MHz/Km	@100Mbps 2km @1Gig 220m	850/1300nm 3.0/1.0dB/km
50/125	850/1300nm 500/500 MHz/Km	@100Mbps 2km @1Gig 500m	850/1300nm 3.0/1.0dB/km
50/125 10Gig Optimized	850/1300nm 2000/500 MHz/Km	@100Gig Varies by VCSEL typical 300m 2850nm	850/1300nm 3.0/1.0dB/km
9/125	1310/1550nm Approx. 100 Terahertz	Up to 100km Varies by transceiver	1310/1550nm 0.4/0.3dB/km

Fibre type	Single mode:1,9/125-G652D 2,9/125-G655 3,9/125-G657
	Multimode:4,50/125-OM2 5,62.5/125-OM1 6,50/125-OM3
Fibre	Corning
Connector1	SC,FC,LC,ST,MU,DIN,MTRJ,E2000,MPO,SMA,D4 and others
Polishing	PC,UPC,APC,MTRJ Male connector, MTRJ female connector
Connector2	SC,FC,LC,ST,MU,DIN,MTRJ,E2000,MPO,SMA,D4 and others
Polishing	PC,UPC,APC,MTRJ Male connector, MTRJ female connector
Cord type	Simplex ,Duplex
Cable diameter	0.9mm ,2.0mm,1.8mm 3.0mm
Cable jacket	PVC,LSZH,OFNR,OFNP
length(M)	0.5m,1m,3M,5m,10m,20m,200m

HOW TO WORK OUT PATCH LEAD PART NUMBERS:

Cable Type: Simplex/Duplex= S or D

Fibre Type: OM1/OM3/OM4/OS2 Singlemode=1/3/4/2

Length: 1M= 1M

Connector end 1: SC/LC/ST/MTRJ/SCA/LCA/FC= SC

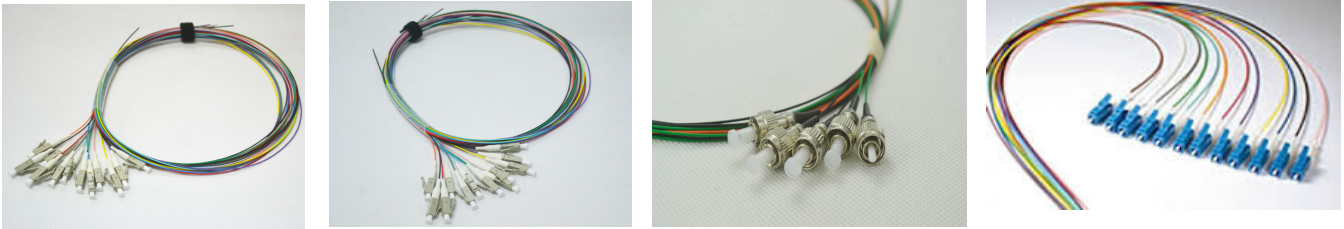
Connector end 2: SC/LC/ST/MTRJ/SCA/LCA/FC=SC

Color (other than standard): Red/Black/Blue/Green=R/K/B/G

An example would be: 1m Red OM3 Duplex Patch Cable SC – LC=
D31MSCSCR

APOLLO TECHNOLOGY FIBRE OPTIC PIGTAILS

Fibre Optic Pigtails:



Fibre Optic pigtails are essential when terminating cables within a splice enclosure by either using a fusion splicer or mechanical splicing. Using pre-polished assemblies can reduce the risk of poor connector termination and therefore loss. Cables terminated within a production facility will give a higher performance than cables terminated on site.

Apollo Technology Pty Ltd distributes a wide range of laboratory terminated and tested fibre optic pigtail assemblies

Apollo Technology Pty Ltd Fibre Optic Pigtails are available in a 12 pack using 900µm tight buffered fibre with international standard colors. The standard length that is supplied is 2m.

The Fibre Optic Pigtails are available with a range of connectors: SC, SC APC, LC, LC APC, ST, MTRJ and FC.

FEATURES AND BENEFITS

- Easy to strip and cleave
- Full range of test results provided.
- Fully machine polished connectors supplied, ensuring low loss
- High quality, machine polished connectors for consistent low loss performance
- Identifiable fibre buffer colors under all lighting conditions
- Short connector boots for ease of fibre management in high density applications
- Ultra polish & Angle polish options available all terminations are manufactured to exceed performance parameters set by industry standards.
- Fast turnaround of non-standard requirements.
- Full traceability & test certification supplied with each assembly.
- 900µm tight buffered fibre optic cable.

APPLICATIONS

- For use in permanent termination of optical fibre via fusion splicing
- For use in permanent termination of optical fibre through mechanical splicing

Number	TIA/EIA-598 ¹
1	blue
2	orange
3	green
4	brown
5	grey
6	natural / white
7	red
8	black
9	yellow
10	violet
11	pink
12	turquoise

¹ EN 50174-1

Specifications

* Pigtail Specification

Mechanical Length: 2m ± 10mm

Other lengths available to order

Product Packaging

Each pigtail is packaged individually and individually identified for traceability, test certification is supplied for each assembly.

* Connector Specification

Optical Performance (Singlemode) ~Insertion loss: Max. 0.3 dB, Typical 0.2 dB

Return loss: UPC > 50dB, APC > 60Db

(Multimode) ~Insertion loss: Max. 0.3 dB, Typical 0.2 dB

Optical Performance

(MT-RJ): Insertion loss: Max. 0.5 dB

Operating Temperature

: -40°C to +85°C

Intermateability

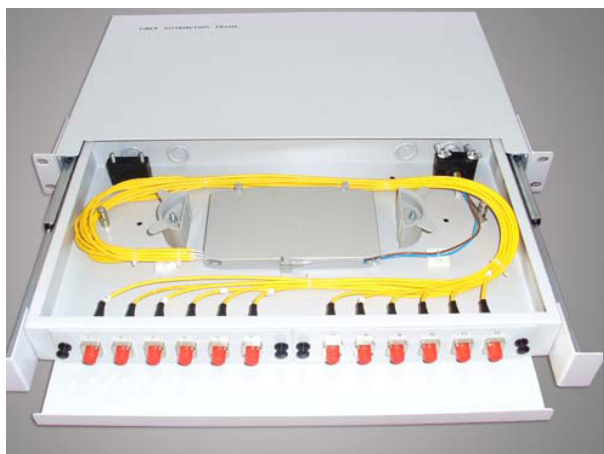
: Optically and mechanically compatible with all equivalent connectors.

Compliant with IEC 874-14.

Part number:

SC OM1-	SC1P122
SC OM3-	SC3P122
SC OM4-	SC4P122
SC SM (OS2)-	SC2P122
LC OM1-	LC1P122
LC OM3-	LC3P122
LC OM4-	LC4P122
LC OS2 (SM)-	LC2P122
ST OM1-	ST1P122
ST OM3-	ST3P122
ST OS2 (SM)-	ST2P122
FC SM (SM)-	FC2P122
MTRJ OM1-	MT1P122
MTRJ SM-	MT2P122

APOLLO 28 FULLY LOADED FIBRE OPTIC ENCLOSURE



It is important to minimise the amount of time spent on the job, with this in mind Apollo Technology have create a range of fully customisable, fully loaded fibre optic enclosures.

With a wide range of applications and uses it makes it much simpler for the installer to arrive at the job with everything ready to use. The Apollo Technology fully loaded enclosures include: Pigtailed, adaptors, heatshrinks and splice cassettes to make sure you can get the job done with a minimum of fuss.

APPLICATIONS:

- Fibre to the building(FTTB)
- Schools/ Data centres
- Optical networks
- Local area networks
- Wide area networks

FEATURES:

- 19"standard structure, rack mounting
- Fully customisable, you choose what you require.
- Available for the installation of FC,SC,ST,LC Adapters

STANDARD CONFIGURATIONS:

12FLESCSM	12 Port SC Singlemode
12FLELCSM	12 port LC Singlemode
24FLESCSM	24 Port SC Singlemode
24FLELCSM	24 Port LC Singlemode
12FLESCOM3	12 Port SC OM3
12FLELCOM3	12 port LC OM3
24FLESCOM3	24 Port SC OM3
24FLELCOM3	24 Port LC OM3

Apollo 1 Optical Light Source

TEST AND MEASUREMENT EQUIPMENT



Description

The Apollo 1 Optical Light Source is one of our latest products. It can provide 2 to 5 wavelength output according to the specific requirements including the 650nm red source, 1310/1550nm wavelength for the single mode Fibre and 850/1300nm wavelength for the multimode Fibre or other wavelengths according to customer needs. Together with optical power meter, it acts as a perfect solution for the Fibre optic network work.

Features

- Tone generation, 270HZ, 1KHZ, 2KHZ;
- Output power value is shown on LCD display;
- Intelligent backlight control (light intensity can be adjusted properly according to ambient light, which greatly reduced power consumption);
- AA alkaline for power supply;
- Low battery indication.

Specifications

Operating wavelength (nm)	1310/1550 (others specify on requests, Max wavelength is 5)
Applicable Fibre	SM ,MM
Laser type	FP-LD
Maximum Output Power (dBm)	-7
Stability(dB, 15min, 20℃)	±0.1
Stability(dB, 30min, 20℃)	±0.05
Modulation (Hz)	CW, 270, 1K, 2K
Fibre Port	FC/PC or FC,SC,ST interchangeable
Alkaline Battery	3XAA, 1.5V
Battery Operating time(h)	45
Operation Temperature(℃)	-10~+60
Storage Temperature(℃)	-25~+70
Outline size (mm)	200 X90 X50
Weight(g)	285

Fibre Test Instruments

Apollo 3 Optical Power Meter



Description

The Apollo 2 is a full-function optical power metre. It can be utilized across a number of applications including fibre optic network installation, fibre optic network engineering acceptance and fibre optic network maintenance. When used in partnership with the Apollo 1 optical light source, it offers a quick and accurate testing solution for both SM and MM Fibres. Some other features to note are: automatic wavelength identification and switching, intelligent backlight control and a functional ergonomic design.

Features

- Wave ID—Automatic wavelength identification and switching (when used with handheld light source);
- Frequency ID/Tone detection---Automatic frequency identification;
- Data storage function, up to 1000 test records;
- USB communication port to download the saved testing records;
- Reference power level can be set up and stored;
- Auto-off function can be activated or deactivated;
- AA alkaline and AC adapter for power supply;
- Low battery indication.

Specifications

Calibrated(nm)	850,1300,1310,1490,1550,1625nm	
Detector type	InGaAs	
Measurement Range(dBm)	-70~+6	-50~+26
Detector Area	Ø 0.3mm	
Uncertainty (dB)	±0.15(3.5%)	
linearity (dB)	±0.02	
Display resolution(dB)	0.01	
Frequency ID(Hz)	270,1K,2K	
Wave ID(nm)	1310,1490,1550,1625, 850,1300	
Date storage capacity	1000	
Communication Port	USB	
Optical Connector type	FC,SC,ST interchangeable(LC upon request)	
Alkaline battery	3XAA,1.5V	
Power Supply Adaptor(V)	8.4	
Battery Operating time (h)	200	
Operation Temperature (°C)	-10~+60	
Storage Temperature (°C)	-25~+70	
Outline size(mm)	200 X90 X50	
Weight(g)	285	



For any further information please contact
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