EOLX-96-PCT-XX Series

XFP & SFP+ Port Cable Assemblies
Active and passive available
0.5m/1m/2m/3m Reach
RoHS6 Compliant

Features

- Supports 10Gb/s data rates
- Hot-pluggable XFP footprint
- Compliant to XFP MSA
- Compliant to SFP MSA
- Compliance to Fiber Channel 1200-M5-SN-I, 1200-M5E-SN-I, 1200-M6-SN-I at 10.51875Gbit/s
- Improved Pluggable Form Factor (IPF) compliant for enhanced EMI/EMC performance
- Lower Power Consumption
- Power Supply +3.3V
- High reliability
- Temperature Range
  Standard: 0~ 70℃

Applications

- Data networking
- Telecommunications switches (SONET)
- Enterprise storage area network(SAN/NAS)
- Network switches and routers
- 10 GBE Datacom(belly-to-belly for high density applications)

Order Information

Part No.	Data rate	Length	AWG	Passive/ Active	Temp
EOLX-96-PCT-H-30P	10G	0.5m	30	Passive	0-70℃
EOLX-96-PCT-01-30P	10G	1m	30	Passive	0-70℃
EOLX-96-PCT-02-30P	10G	2m	30	Passive	0-70℃
EOLX-96-PCT-03-30P	10G	3m	30	Passive	0-70℃
EOLX-96-PCT-H-24P	10G	0.5m	24	Passive	0-70℃
EOLX-96-PCT-01-24P	10G	1m	24	Passive	0-70℃

EOLX-96-PCT-02-24P	10G	2m	24	Passive	0-70℃
EOLX-96-PCT-03-24P	10G	3m	24	Passive	0-70℃
EOLX-96-PCT-H-30	10G	0.5m	30	Active	0-70℃
EOLX-96-PCT-01-30	10G	1m	30	Active	0-70℃
EOLX-96-PCT-02-30	10G	2m	30	Active	0-70℃
EOLX-96-PCT-03-30	10G	3m	30	Active	0-70℃
EOLX-96-PCT-H-24	10G	0.5m	24	Active	0-70℃
EOLX-96-PCT-01-24	10G	1m	24	Active	0-70℃
EOLX-96-PCT-02-24	10G	2m	24	Active	0-70℃
EOLX-96-PCT-03-24	10G	3m	24	Active	0-70℃

Regulatory Compliance

Feature	Standard	Performance
Electrostatic Discharge (ESD) to the Electrical Pins	MIL-STD-883G Method 3015.7	Class 1C (>1000 V)
Electrostatic Discharge to the enclosure	EN 55024:1998+A1+A2 IEC-61000-4-2 GR-1089-CORE	Compatible with standards
Electromagnetic Interference (EMI)	FCC Part 15 Class B EN55022:2006 CISPR 22B :2006 VCCI Class B	Compatible with standards Noise frequency range: 30MHz to 6GHz. Good system EMI design practice required to achieve Class B margins. System margins are dependent on customer host board and chassis design.
Immunity	EN 55024:1998+A1+A2 IEC 61000-4-3	Compatible with standards. 1KHz sine-wave, 80% AM, from 80MHz to 1GHz. No effect on transmitter/receiver performance is detectable between these limits.
Laser Eye Safety	FDA 21CFR 1040.10 and 1040.11 EN (IEC) 60825-1:2007 EN (IEC) 60825-2:2004+A1	CDRH compliant and Class I laser product. TüV Certificate No. 50135086
Component Recognition	UL and CUL EN60950-1:2006	UL file E317337 TüV Certificate No. 50135086

		(CB scheme)
RoHS6	2002/95/EC 4.1&4.2 2005/747/EC 5&7&13	Compliant with standards*note1

Note1: For update of the equipments and strict control of raw materials, EOPTOLINK has the ability to supply the customized products since Jan 1th, 2007, which meet the requirements of RoHS6 (Restrictions on use of certain Hazardous Substances) of European Union.

In light of item 5 in RoHS exemption list of RoHS Directive 2002/95/EC, Item 5: Lead in glass of cathode ray tubes, electronic components and fluorescent tubes.

In light of item 13 in RoHS exemption list of RoHS Directive 2005/747/EC, Item13: Lead and cadmium in optical and filter glass. The three exemptions are being concerned for Eoptolink's transceivers, because Eoptolink's transceivers use glass, which may contain Pb, for components such as lenses, windows, isolators, and other electronic components.

Product Description

EOLX-96-PCT-XX Copper XFP&SFP+ Port Cable assemblies are high-performance, cost effective I/O solutions for 10 GB Ethernet and 10G Fiber Channel applications, which allow hardware manufacturers to achieve high port density, configurability and utilization at a very low cost and to reduce power budget. The high-speed cable assemblies meet and exceed the performance and reliability requirements stipulated by Gigabit Ethernet and Fiber Channel industry standard.

The XFP & SFP+ Port module are fully compliant to the XFP MSA & SFF 8431, 8432 MSA.

Absolute Maximum Ratings

Parameter	Symbol	Min	Typ	Max	Units
Maximum Supply Voltage	Vcc	-0.5	-	4.0	V
Storage Temperature	T_S	-40	-	85	℃

Normal operating condition

Parameter	Symbol	Min	Typ	Max	Units	Ref.
Operating Case Temperature	Tc	0	-	70	℃	
Supply Voltage	Vcc	3.14	3.3	3.47	V	
Power Consumption	P	-	-	0.5	W	
Data Rate		-	10	-	Gbps	

Management Interface

The copper cable provide serial ID memory contents and diagnostic information about the present operating conditions by the 2-wire serial interface(SCL, SDA). The memory map specific data field defines as following.

Figure 1 The 2-Wire Serial Address of SFP+

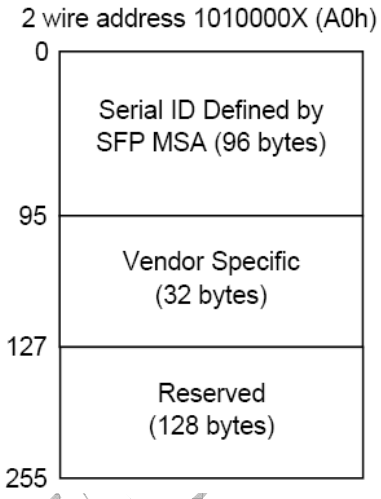
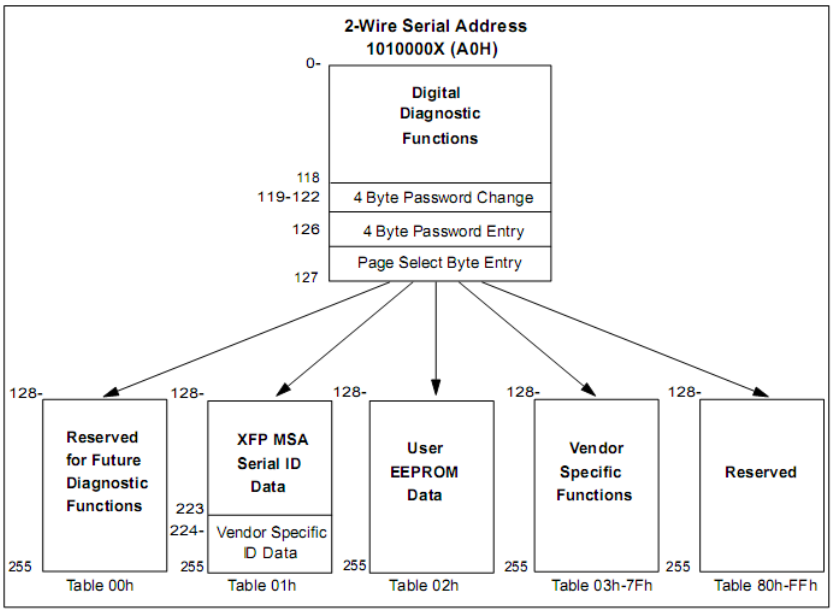


Figure 2 The 2-Wire Serial Address of XFP



EEPROM

The optical transceiver contains an EEPROM. It provides access to sophisticated identification information that describes the transceiver's capabilities, standard interfaces, manufacturer, and

other information.

Table 1 Serial ID Memory Contents of SFP+

Addr.	Size (Bytes)	Name of Field	SFP+(Hex)	Description
BASE ID FIELDS				
0	1	Identifier	03	SFP
1	1	Ext. Identifier	04	SFP function is defined by serial ID only
2	1	connector	21	Copper pigtail
3	1	10G Ethernet, InfiniBand compliance codes	01	1X Copper passive InfiniBand compliance
4-5	2	ESCON, SONET compliance codes	00	
6	1	100M, 1G Ethernet, InfiniBand compliance codes	04	1000BASE-CX
7	1	Fibre Channel Technology compliance codes	41	
8	1	Fibre Channel Technology, SFP+ cable technology codes	84	Electrical inter-enclosure, passive cable
9	1	Fibre Channel transmission media	80	Twin axial pair
10	1	Fibre Channel speed	D5	1200/800/400/200/100Mbytes/sec
11	1	Encoding	00	unspecified
12	1	Bit Rate	67	Bit rate per lane in 100Mb/s,67h=103x100Mb or 10.3Gb,64h=100x100Mb or 10Gb
13	1	Rate Idetifier	00	unspecified
14-17	4	Length(for vatious types of fiber)	00	
18	1	Length (cable)	XX	Length in Meters.01h is used for cables<1m.Franctional legths are rounded up to the next integer length
19	1	Length(OM3)	00	
20-35	16	Vendor name	XX	“Manufacturers” followed by spaces
36	1	Transceiver code(reserved)	00	
37-39	3	Vendor IEEE OUI	XX	

40-55	16	Vendor PN(ASCII)	XX	Extra bytes are filled with spaces(20h)
56-59	4	Vendor Rev(ASCII)	XX	Manufacturers's product drawing revision number. Extra bytes are filled with spaces(20h)
60	1	Passive Cable Specifcation Compliance	01	01=Compliance to SFF-8431, Appendix E
61	1	Passive Cable Specifcation Compliance	00	Unallocated
62	1	Unused	00	
63	1	CC_BASE check code	XX	A check code for Bytes 0-62 inclusive
EXTENDED ID FIELDS				
64	1	Options(power level, linear receive)	00	Not used for passive copper
65	1	Options(Tx_Disable,Tx_Fault ,LOS)	00	Not used for passive copper
66	1	BR, max	00	Upper bit rate margin, unites of %, not specified
67	1	BR, min	00	Lower bit rate margin, unites of %, not specified
68-83	16	Vendor S/N(ASCII)	XX	The serial number for the cable assembly.
84-85	2	Dare Code(ASCII) two low order digits of year	XX	2 digit year(ie 31h,30h=10=2010)
86-87	2	Dare Code(ASCII) digits of month(01-02)	XX	30h,31h=01=January,30h,32h =02=February,etc
88-89	2	Dare Code(ASCII) day of month(0-31)	XX	30h,31h=01(1st day of the month)
90-91	2	Lot Code(ASCII) vendor specific or biank	00	Not used. Manufacturers uses S/N for traceability
92-94	3	Diagnostic Monitoring	00	Not implemented
95	1	CC_EXT check code	XX	A check code for Bytes 64-94 inclusive
VENDOR SPECIFIC ID FIELDS				
96-127	32	Not being used	Not used	
128-255	128	Reserved	Not used	

*XX means the content varying according to the actual case.

Table 2 Serial ID Memory Contents of XFP

Addr.	Size (Bytes)	Name of Field	XFP(Hex)_	Description

128	1	Identifier	06	XFP
129	1	Ext. Identifier	80	TX Ref Clock input Not Required
130	1	Connector	00	
131-138	8	Transceiver	FF FF 00 00 00 00 00 00	
139	1	Encoding	F0	
140	1	BR, min	63	
141	1	BR, max	6F	
142	1	Length (SMF)km	00	
143	1	Length(E-50um)	00	
144	1	Length (50μm)	00	
145	1	Length(62.5μm)	00	
146	1	Length (Copper)	XX	
147	1	Device Tech	00	
148-163	16	Vendor name	XX	XFP vendor name
164	1	CDR Support	E0	CDR Rate Support 9.9~10.5Gbs
165-167	3	Vendor OUI	XX	XFP vendor IEEE company ID
168-183	16	Vendor PN	XX	Part number provided number by XFP vendor
184-185	2	Vendor rev	XX	Revision level for part number provided by vendor(ASCII)
186-187	2	Wavelength	00,00	
188-189	2	Wavelength Tolerance	00,00	
190	1	Max Case Temperature	55	70deg Maximum Case Temperature in Degrees
191	1	CC_BASE check code	XX	Check code for Base ID Fields(addresses128-190)
192	1	Power Supply	4B	Max Power dissipation=1.5w.
193	1	Power Supply	64	Max Power dissipation after power down=1w
194	1	Power Supply	04	+5v and +3.3v Max current=400mA
195	16	Power Supply	00	+1.8v and -5.2v Max current=0
196-211	16	Vendor S/N(ASCII)	XX	Serial number provided by vendor(ASCII)".
212-219	8	Date Code	XX	Vendor`s manufacturing

				date code(ASCII)
220	1	Diagnostic Monitoring Type	00	
221	1	Enhanced Options	00	
222	1	Aux Monitoring	00	
223	1	CC_EXT check code	Calculated value	Check code for the Extended ID Fields(address192to222)
224-225	2	Vendor Specific	XX	Vendor Specific EEPROM

*XX means the content varying according to the actual case.

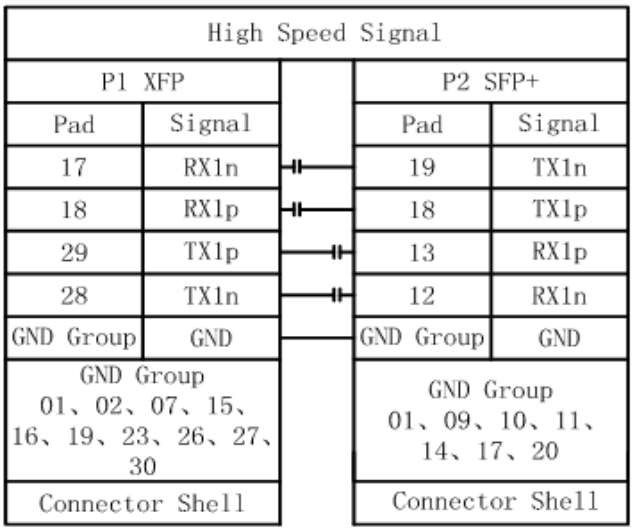
Physical Data

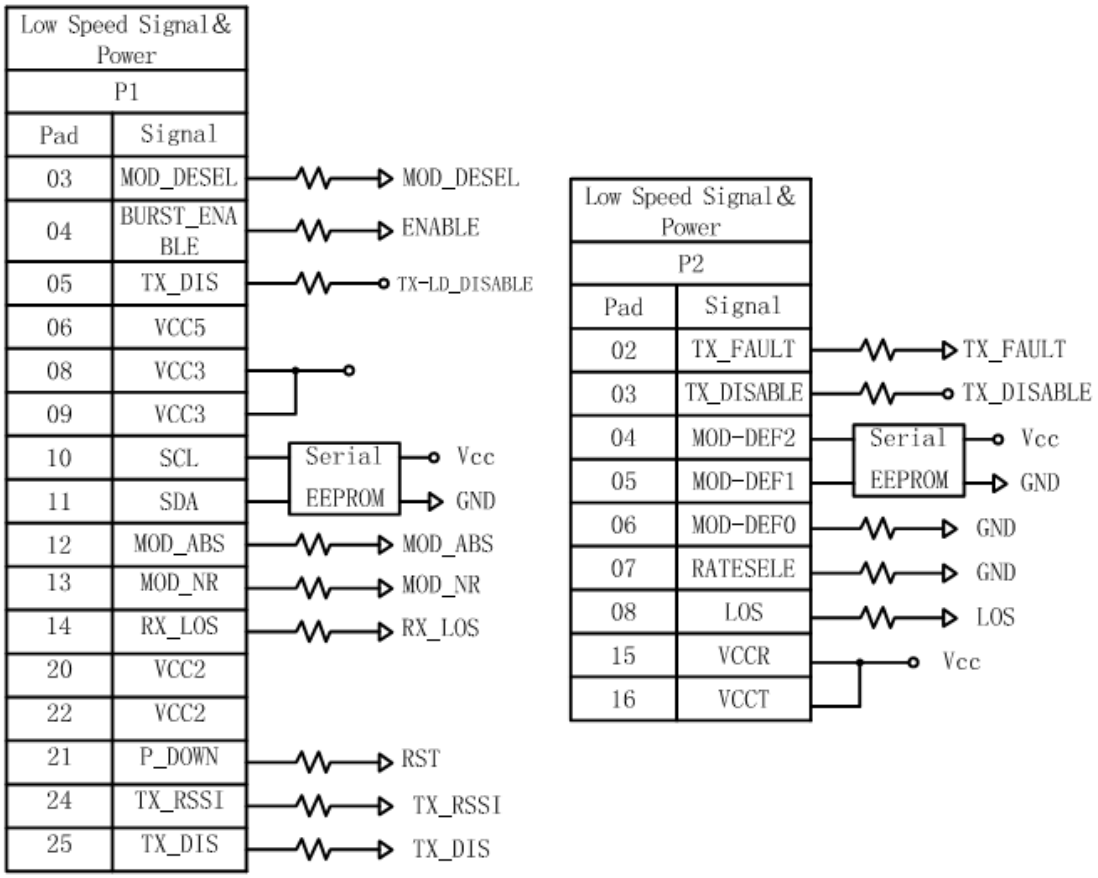
Parameter	Description	30AWG	24AWG.	Units
Cable Diameter	OD	4.4	6.3	mm
Bend Radius	Minimum Sustained Bend	21	30	mm

Recommended Wiring Diagram

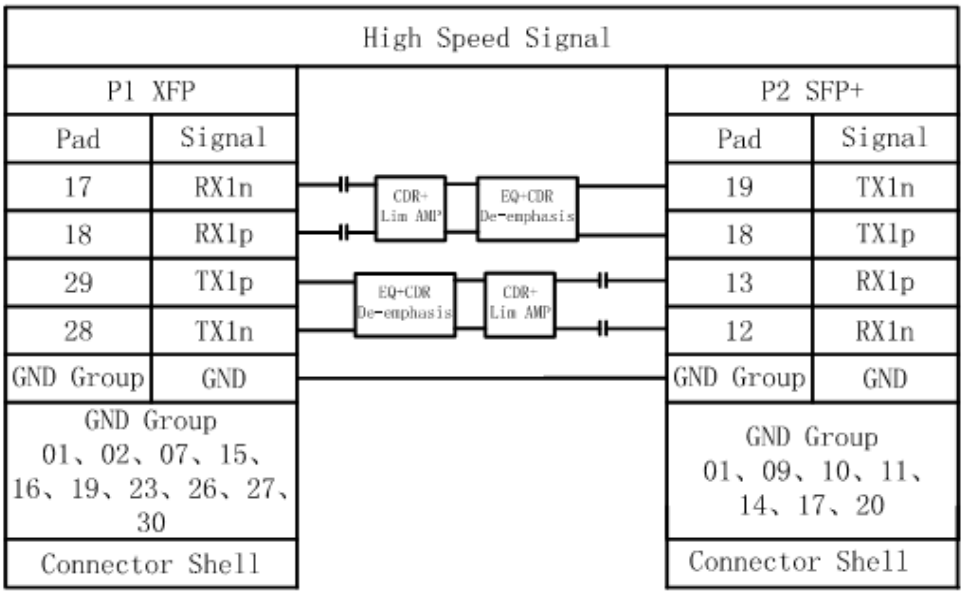
1. Wiring Diagram of XFP&SFP+ Port Cable PASSIVE version

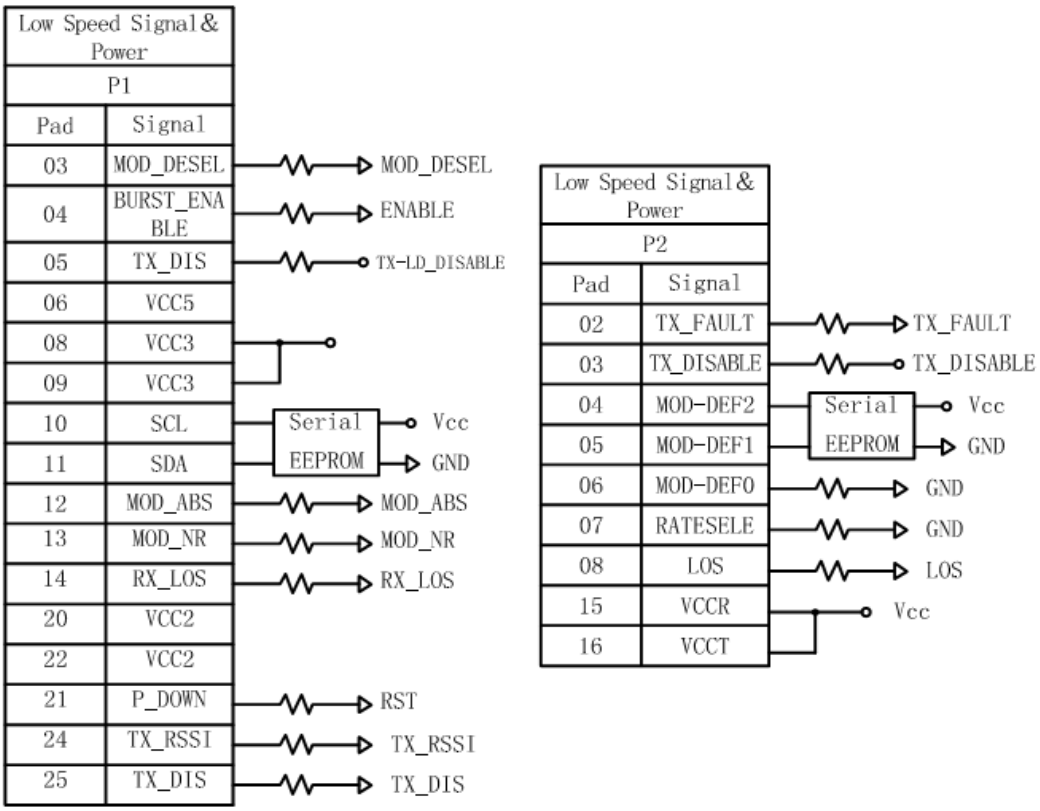
Wiring Diagram



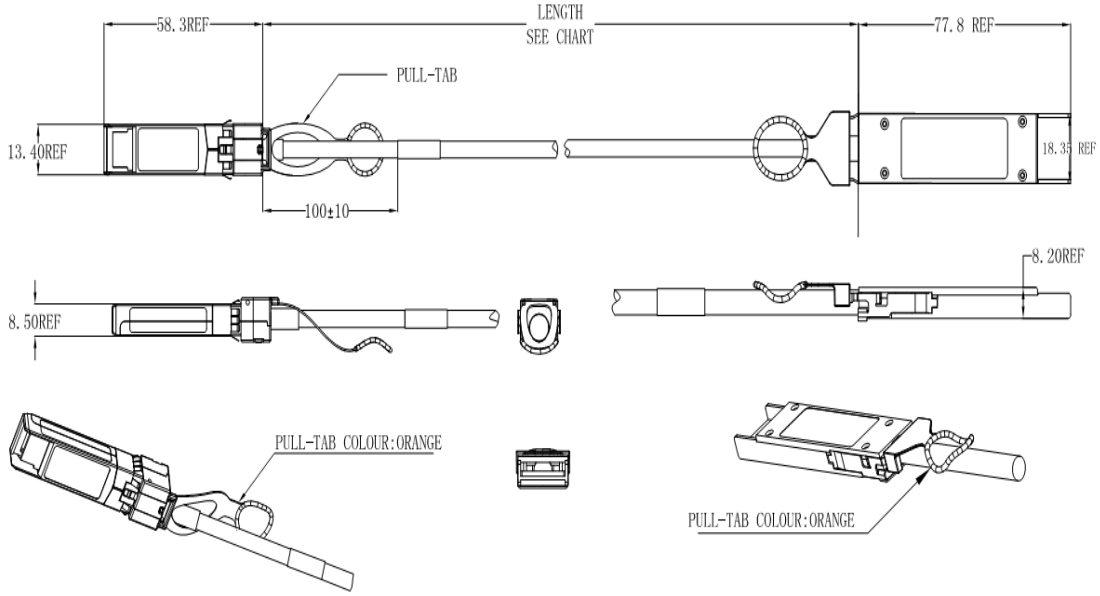


2. Wiring Diagram of XFP&SFP+ Port Cable ACTIVE version





Mechanical Specifications



*NOTE：For XFP to SFP+ PASSIVE cable, the PULL-TAB color is black; For XFP to SFP+ACTIVE cable, the PULL-TAB color is orange.

Obtaining Document

You can visit our website:

http://www.eoptolink.com

Or contact Eoptolink Technology Inc., Ltd. listed at the end of the documentation to get the latest documents.

Revision History

Revision	Initiated	Review	Approved	Revision History	Release Date
V1.a	Abby	Kelly		Released.	Oct 15, 2012

Notice:

Eoptolink reserves the right to make changes to or discontinue any optical link product or service identified in this publication, without notice, in order to improve design and/or performance. Applications that are described herein for any of the optical link products are for illustrative purposes only. Eoptolink makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.

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