XSD Single Fiber series

DWDM passive optical components

Features

- Optimized for single fiber applications
- Simplified component interconnection system using standard dual patch cords eliminates most interconnection errors
- High number of connections over single fiber. Limited only by system power budget.
- Very low inter-channel attenuation ripple
- Modular design enables later expansion
- Lower attenuation models available on request (for specific channel configurations)
- Standard versions available from stock

Typical Applications

- Optimization of fiber use in fiber based data transfer
- Concurrent transmission of different data formats i.e. Ethernet, Fiber Channel, TDM
- Out of band monitoring, fiber integrity and performance monitoring

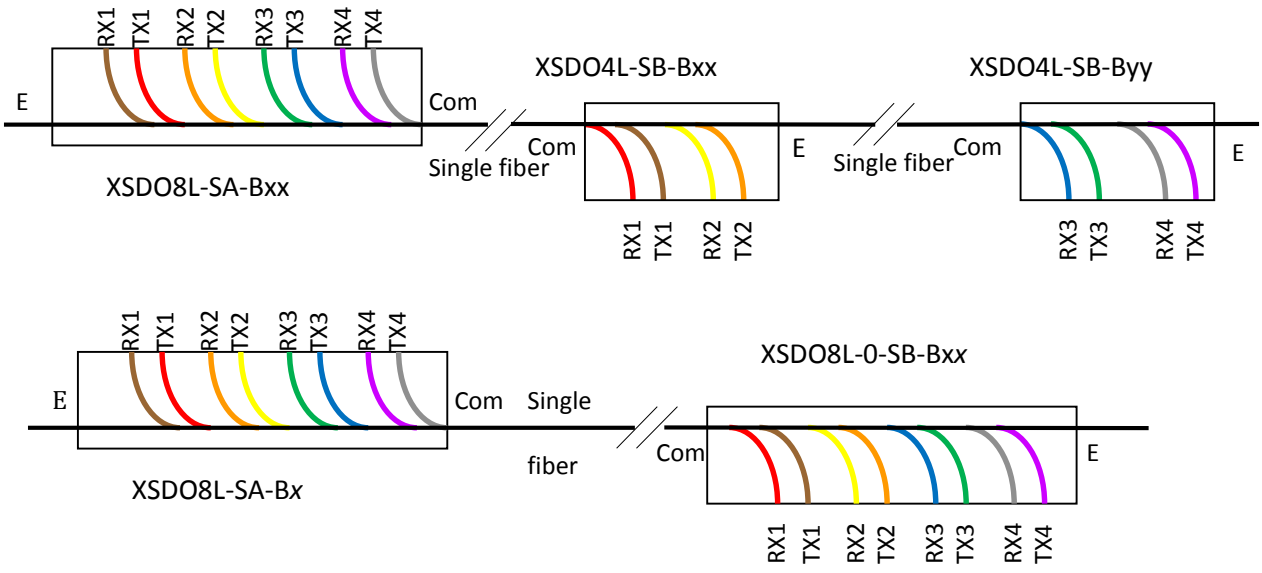

Figure 1 Multichannel single fiber connection examples

Description

XSD is a series of passive optical components optimized for use in single fiber DWDM transmission systems. All standard ITU C band 100GHz filters from CH 10 to Ch 66 are available filters Ch 17 to Ch 59 are usually on stock. Any channel combination can be implemented. Channel combinations with at least 4 sequential channels are available also as low attenuation models on request. Number of bidirectional channels concurrently transferred over standard single mode fiber G.652 is limited only by overall system power budget.

All components are add/drop type (OADM) so they can be daisy-chained. System using multiple wavelength ranges can be easily integrated using standard components. In standard devices each bidirectional data channel consists of two consecutive wavelengths, each transferring data in one direction. Standard versions are intended mainly for unamplified applications. Special versions with channel arrangement suitable for optical amplification that still support simple local connections are also available.

Terminal connections are designed so that standard dual SM patch cords can be used to connect to standard transponder equipment (i.e. SFP). Each type of optical component is available in two versions with different connector placement and filter order (A and B, C and D, …). Use of both versions – one at each side – assures that attenuation between different channels is balanced and correct channel to client TX and RX is connected when standard patch cables are used.

Devices are installed in standard LGX module that snaps into 1U rack mount bracket. Up to three LGX modules can be inserted in single 1U rack mount bracket. There is also a selection of unmanaged transponder modules that can be installed in place of LGX module. Managed transponders must be installed in separate rack mount enclosure.

Ordering	
XSDO2L-0-SA-B*xx* XSDO2L-0-SB-B*xx*	2 wavelengths (single channel single fiber) OADM, LGX, LC/UPC, 100GHz
XSDO4L-0-SA-B*xx* XSDO4L-0-SB-B*xx*	4 wavelengths (dual channel single fiber) OADM, LGX, LC/UPC, 100GHz
XSDO8L-0-SA-B*xx* XSDO8L-0-SB-B*xx*	8 wavelengths (quad channel single fiber) OADM, LGX, LC/UPC, 100GHz
If wavelengths are all sequential **xx** is replaced by channel number of lowest channel in the component. If channels are not sequential **xx** *is* replaced with list of channels separated by »/«. Bxx in above designation is used for 100GHz filter channel spacing.	

Any combination of standard 100GHz DWDM (***ITU**-T G.694.1*) wavelengths combinations can be ordered with delivery time of up to 6 weeks (4 weeks typical).

Following are some standard versions.

Designation	Description	Similar Cisco Device
XSDO8L-SA-XC2	Xenya Single Fiber DWDM OADM, LC/UPC connectors, single sided, version A, 100GHz channels 21 to 24 and 26 to 29	FLA-8-60.6= ITU-100 GHz 8 Ch, FlexMode
XSDO8L-SB-XC2	Xenya Single Fiber DWDM OADM, LC/UPC connectors, single sided, version A, 100GHz channels 21 to 24 and 26 to 29	FLA-8-60.6= ITU-100 GHz 8 Ch, FlexMode

XSDO8L-SA-XC3	Xenya Single Fiber DWDM OADM, LC/UPC connectors, single sided, version A, 100GHz channels 31 to 34 and 36 to 39	FLA-8-52.5= ITU-100 GHz 8 Ch, FlexMode
XSDO8L-SB-XC3	Xenya Single Fiber DWDM OADM, LC/UPC connectors, single sided, version A, 100GHz channels 31 to 34 and 36 to 39	FLA-8-52.5= ITU-100 GHz 8 Ch, FlexMod
XSDO8L-SA-XC4	Xenya Single Fiber DWDM OADM, LC/UPC connectors, single sided, version A, 100GHz channels 41 to 44 and 46 to 49	FLA-8-44.5= ITU-100 GHz 8 Ch, FlexMode
XSDO8L-SB-XC4	Xenya Single Fiber DWDM OADM, LC/UPC connectors, single sided, version A, 100GHz channels 41 to 44 and 46 to 49	FLA-8-44.5= ITU-100 GHz 8 Ch, FlexMode
XSDO8L-SA-XC5	Xenya Single Fiber DWDM OADM, LC/UPC connectors, single sided, version A, 100GHz channels 51 to 54 and 56 to 59	FLA-8-36.6= ITU-100 GHz 8 Ch, FlexMode
XSDO8L-SB-XC5	Xenya Single Fiber DWDM OADM, LC/UPC connectors, single sided, version A, 100GHz channels 51 to 54 and 56 to 59	FLA-8-36.6= ITU-100 GHz 8 Ch, FlexMode
	XSDO8L-SA-XC2 and XSDO8L-SB-XC2 are usually available from stock	

Typical connections layouts

Figure 2 XCDO10L-SA-Bxx - Single fiber Single side 10 channels DWDM OADM version A

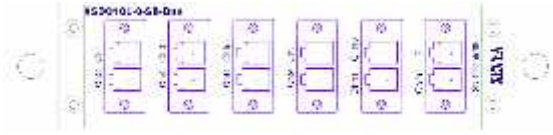

Figure 3 XCDO10L-SA-Bxx - Single fiber Single side 10 channels DWDM OADM version B

Figure 4 XCDO8L-SC-Bxx - Single fiber Single side 10 channels DWDM OADM version C

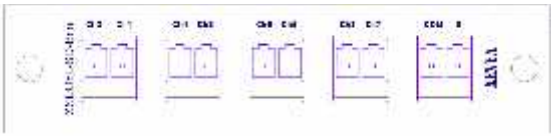

Figure 5 XCDO8L-SC-Bxx - Single fiber Single side 10 channels DWDM OADM version C

Component with lower number connections have same layout, but higher ports are not present

Different packing and lower Insertion loss versions are available on request.

Accesories

XMR1	19” rack mounting bracket accommodates up to 3 LGX modules in 1U height
XMR1R	19” rack mounting bracket accommodates up to 3 LGX modules in 2U height, recessed
XMR2R	19” rack mounting bracket accommodates up to 6 LGX1 modules or 3 LGX2 modules in 2U height, recessed
XMR1B	blank panel for 19” rack mounting bracket
XMR1G1	Cable guide bracket enables guiding and fixing of all optical cables when installed with rack mount bracket

Technical Specifications

Parameters	XSD Single fiber 100GHz thin film DWDM OADM							Unit
	1 A/D	2 A/D	3 A/D	4 A/D	6 A/D	8 A/D	10 A/D	
Wavelength Wavelength	ITU G.671 100G C20~C60							nm
Channel Spacing	100							GHz
Channel Passband	$L_c \pm 0.11$ (min)							nm
Passband Ripple	⩽ 0.45							dB
Com to E band	C-Band except A/D channels							nm
Insertion Loss - Com to A/D	< 1	< 1.9	< 2.4	< 2.9	< 3.8	< 4.8	< 5.7	dB
Insertion Loss - Com to E	< 0.9	< 1.5	< 2	< 2.5	< 3.4	< 4.4	< 5.3	dB
Com to E for A/D signals	> 13.2	> 13.6	> 14.1	> 14.6	> 15.5	> 16.5	> 17.4	dB
Isolation adjecent channel	⩾ 24							dB
Isolation non adjecent channel	⩾ 40							dB
Insertion Loss Temperature Sensitivity	⩽ 0.01							dB/°C
Polarization Dependent Loss	⩽ 0.25							dB
Polarization Mode Dispersion	⩽ 0.15							ps
Return Loss	⩾ 50							dB
Directivity	⩾ 50							dB
Maximum Power Handling	⩾ 300							mW
Operating Temperature	-5 to 70							°C
Storage Temperature	-40 to 85							°C
Operating Humidity	5~95 non condensing							%
Storage Humidity	5~95 non condensing							%
Termination	LC connector							
Package Dimension	1U LGX (130mm x 127mm x30mm)							

Note:

1. IL and all PDL within Operating Temperature and with connectors.
2. Components used are complaint to Telecordia GR1209 & GR-1221.

Optional Services

Optical fiber measurements and qualification

Design and integration of complete system including active equipment

Custom configurations and OEM production is possible for orders with typically at least 10 equal components.

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