

01

# OPTICAL NETWORKING



Optical Transceivers  
Fibre Optic Patch Leads  
Patch Panels  
Fibre Optic Couplers  
ProLabs Media Converters

smartoptics

**AVAGO**  
TECHNOLOGIES



# OPTICAL NETWORKING

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## GBIC, SFP, XFP, X2 & Xenpak (Optical & Copper Transceivers) Solutions

- Major brands include JDSU, Smartoptics, Avago & ProLabs
- Guaranteed Product Quality
- Extensive Cost Savings
- 3 Year Advanced Replacement Warranty
- Large Stock Range - Fast Distribution
- Experienced Product Support & Back-up
- Compatible & Approved ranges available

- |           |              |           |           |                  |
|-----------|--------------|-----------|-----------|------------------|
| ✓ Cisco   | ✓ Juniper    | ✓ 3 COM   | ✓ SMC     | ✓ Dothill        |
| ✓ Huawei  | ✓ Alcatel    | ✓ Emulex  | ✓ AVAYA   | ✓ Trendnet       |
| ✓ HP      | ✓ DLink      | ✓ Vixel   | ✓ MARCONI | ✓ Allied Telesyn |
| ✓ Nortel  | ✓ Riverstone | ✓ Brocade | ✓ Netgear | ✓ Zyxel          |
| ✓ Extreme | ✓ Enterasys  | ✓ MiLAN   | ✓ Foundry | ✓ McData         |

### About Optical Transceivers

There are five main products within the optical transceiver range:

1. GBIC's 2. SFP's 3. Xenpaks 4. XFP's 5. X2's

#### GBIC, SFP

- SX - Short Haul (range up to 500metres)
- LX - Long Haul (range up to 10kms\*)
- ZX - Extended Reach (range up to 70kms)
- EZX - Extended Reach + (range up to 120kms)

#### XENPAK, X2, XFP

- SR - Short Range (range up to 300metres)
- LR - Long Range (range up to 10kms)
- ER - Extended Reach (range up to 40kms)
- ZR - Extended Reach + (range up to 80kms)
- LX4 - Extended Reach + (range up to 300metres)

(\* Depending on what type of fibre is being used: Multi-mode or Single-mode)



## Authorised & Compatible Solutions

Zycko offers a range of approved and compatible optical and copper transceiver products for a variety of manufacturers systems. The following guide is sectioned by system manufacturer guiding you on both approved and compatible solutions. Please contact your Zycko Account Manager for full details and specifications.

## ALCATEL Approved or Compatible

### SFP

Alcatel MiniGBIC SX SFP Network Adapter  
Alcatel MiniGBIC LX SFP Network Adapter  
Alcatel MiniGBIC LH SFP Network Adapter 70km

**MINIGBIC-SX**  
**MINIGBIC-LX**  
**MINIGBIC-LH**



## ALLIED TELESYN Approved or Compatible

### GBIC

500m 1000BaseSX GBIC, Multimode SC  
10km 1000BaseLX GBIC, Singlemode SC  
40km 1000BaseLX GBIC, Singlemode SC  
70km 1000BaseLX GBIC, Singlemode SC  
100m 1000Base-T GBIC, RJ45

**AT-G8SX**  
**AT-G8LX10**  
**AT-G8LX40**  
**AT-G8LX70**  
**AT-G8T**



### SFP

550m 1000BaseSX SFP, Multimode LC  
10km 1000BaseLX SFP, Singlemode LC  
40km 1000BaseLX SFP, Singlemode LC  
80km 1000BaseLX SFP, Singlemode LC  
100m 1000BaseT SFP, RJ45  
1000LX SFP 40 Km (1550nm)  
100FX (LC) SFP, 40km  
100FX (LC) SFP, 2km  
100FX (LC) SFP, 15km  
10km, 1000LX SFP, Bi-Di 1490Tx/1310Rx  
10km, 1000LX SFP, Bi-Di 1310Tx/1490Rx

**AT-SPSX**  
**AT-SPLX10**  
**AT-SPLX40**  
**AT-SPLX80**  
**AT-SPTX**  
**AT-SPLX40/1550**  
**AT-SPFX/40**  
**AT-SPFX/2**  
**AT-SPFX/15**  
**AT-SPBD10-14**  
**AT-SPBD10-13**



### CWDM

80km, SFP Module, 1470nm (CWDM)  
80km, SFP Module, 1490nm (CWDM)  
80km, SFP Module, 1510nm (CWDM)  
80km, SFP Module, 1530nm (CWDM)  
80km, SFP Module, 1550nm (CWDM)  
80km, SFP Module, 1570nm (CWDM)  
80km, SFP Module, 1590nm (CWDM)  
80km, SFP Module, 1610nm (CWDM)

**AT-SPZX80/1470**  
**AT-SPZX80/1490**  
**AT-SPZX80/1510**  
**AT-SPZX80/1530**  
**AT-SPZX80/1550**  
**AT-SPZX80/1570**  
**AT-SPZX80/1590**  
**AT-SPZX80/1610**



### XFP

10Gbps XFP, 10km  
10Gbps XFP, 300m

**AT-XPLR**  
**AT-XPSR**



## ASANTE Approved or Compatible

### GBIC

1000BaseSX (SC type) GBIC option module  
1000Base-LX (SC type) GBIC option module  
1000Base-LH (SC type) GBIC option module  
1000Base-LZ (SC type) GBIC option module  
1000 Base-T-GBIC

99-00609-01  
99-00629-01  
99-00769-01  
99-00770-01  
99-00673-01



## AVAYA Approved or Compatible

### GBIC

GBIC SX transceiver ; F/O 1000BaseSX GBIC  
GBIC LX transceiver; F/O 1000BaseLX GBIC  
1000Base-SX compliant GBIC module  
1000Base-LX compliant GBIC module  
GBIC for up to 70km over single-mode fiber

108659228  
108659210  
M8001-1000SX  
M8001-1000LX  
M8001-1000ELX



### SFP

1000BASE-SX SFP - Multimode  
1000BASE-LX SFP - Singlemode  
1000BASE-ZX SFP 70km - Singlemode  
1000BaseTX SFP RJ45-connector

108873241  
108873258  
700260185  
700283872-AV



## BROCADE Approved or Compatible

### GBIC

GBIC, Shortwave, Dual SC Connector, Single-pack  
GBIC, Longwave, Dual SC Connector, Single-pack

XBR-000025  
XBR-000011



### SFP

SX SFP GBIC LC ( pack of 1 )  
SX SFP GBIC LC ( pack of 4 )  
LX SFP GBIC LC connector DIGITAL DIAGS  
SFP 2gig GBIC, Shortwave Dual LC Connector 4-Pack  
SFP 4gig GBIC, Shortwave, Dual LC , Single Pack

XBR-000075  
XBR-000076  
XBR-000077  
XBR-000052  
XBR-000090



## BLACKBOX Approved or Compatible

### SFP

1000BaseZX SM  
1000BaseSX MM  
1000BaseLX SM  
1000BaseT Gigabit Copper

LBG200C-SZC  
LBG200C-MLC  
LBG200C-SLC  
LBG200C-T



### GBIC

1000BASE-T  
 1000BASE-SX Short Wavelength (Multimode only)  
 1000BASE-SX Short Wavelength (Multimode only)  
 1000BASE-LX/LH long haul (Singlemode or Multimode)  
 1000BASE-ZX extended reach (Singlemode only)  
 ProLabs 1000Base-SX GBIC - 2K

WS-G5483  
 WS-G5484  
 WS-G5484-2K  
 WS-G5486  
 WS-G5487  
 WS-G5484-2K



### GBIC CWDM

Set of 4 pairs of Cisco 1000BASE-CWDM GBICs  
 Set of 4 pairs of Cisco 1000BASE-CWDM GBICs  
 1000BASE-ZX CWDM 1470nm GBIC  
 1000BASE-ZX CWDM 1490nm GBIC  
 1000BASE-ZX CWDM 1510nm GBIC  
 1000BASE-ZX CWDM 1530nm GBIC  
 1000BASE-ZX CWDM 1550nm GBIC  
 1000BASE-ZX CWDM 1570nm GBIC  
 1000BASE-ZX CWDM 1590nm GBIC  
 1000BASE-ZX CWDM 1610nm GBIC

CWDM-8GBIC-SET1  
 CWDM-8GBIC-SET2  
 CWDM-GBIC-1470  
 CWDM-GBIC-1490  
 CWDM-GBIC-1510  
 CWDM-GBIC-1530  
 CWDM-GBIC-1550  
 CWDM-GBIC-1570  
 CWDM-GBIC-1590  
 CWDM-GBIC-1610



### MINIGBIC (SFP)

1000BASE-SX SFP (DOM)  
 1000BASE-LX/LH SFP (DOM)  
 1000BASE-ZX Gigabit Ethernet SFP (DOM)  
 ProLabs GE SFP SX transceiver 2k reach  
 OC3/STM1 SFP, Multi-mode fiber  
 OC3/STM1 SFP, Single-mode fiber, Short Reach  
 OC3/STM1 SFP, Single-mode, Intermediate Reach  
 OC3/STM1 SFP, Single-mode fiber, Long Reach (40km)  
 OC-12/ STM-4 SFP, Multi-mode Fiber  
 OC12/STM4 SFP, Short Reach  
 OC-12/STM-4 sfp, 15km  
 OC-48c/STM-16c, SFP, Short Reach  
 OC-48c/STM-16c, SFP, Intermediate Reach  
 OC-48c/STM-16c SFP, Long Reach (80km)  
 1 Gbps Ethernet-2Gbps Fibre Chnl-SW SFP LC  
 1 Gbps Ethernet-2Gbps Fibre Chnl-SW SFP LC  
 2Gbps Fibre Channel-SW SFP LC  
 2Gbps Fibre Channel-LW SFP LC

SFP-GE-S  
 SFP-GE-L  
 SFP-GE-Z  
 GLC-SX-MM-2K  
 SFP-OC3-MM  
 SFP-OC3-SR  
 SFP-OC3-IR1  
 SFP-OC3-LR1  
 SFP-OC12-MM  
 SFP-OC12-SR  
 SFP-OC12-IR1  
 SFP-OC48-SR1  
 SFP-OC48-IR1  
 SFP-OC48-LR2  
 DS-SFP-FCGE-SW  
 DS-SFP-FCGE-LW  
 DS-SFP-FC-2G-SW  
 DS-SFP-FC-2G-LW



### SFP

GE SFP, LC connector SX transceiver  
 GE SFP, LC connector SX transceiver  
 GE SFP,LC connector LX/LH transceiver  
 1000BASE-ZX SFP  
 1000BASE-T SFP  
 1000BASE-BX SFP, 1490NM  
 1000BASE-BX SFP, 1310NM  
 100BASE-FX SFP for FE port  
 100BASE-LX SFP for FE port  
 100BASE-BX10-U SFP  
 100BASE-BX10-D SFP  
 100BASE-FX SFP port GE port

GLC-SX-MM  
 GLC-SX-MM-2K  
 GLC-LH-SM  
 GLC-ZX-MM  
 GLC-T  
 GLC-BX-D  
 GLC-BX-U  
 GLC-FE-100FX  
 GLC-FE-100LX  
 GLC-FE-100BX-U  
 GLC-FE-100BX-D  
 GLC-GE-100FX



### **SFP CWDM**

CWDM 1470nm SFP Gigabit  
CWDM 1490nm SFP Gigabit  
CWDM 1510nm SFP Gigabit  
CWDM 1530nm SFP Gigabit  
CWDM 1550nm SFP Gigabit  
CWDM 1570nm SFP Gigabit  
CWDM 1590nm SFP Gigabit  
CWDM 1610nm SFP Gigabit

**CWDM-SFP-1470**  
**CWDM-SFP-1490**  
**CWDM-SFP-1510**  
**CWDM-SFP-1530**  
**CWDM-SFP-1550**  
**CWDM-SFP-1570**  
**CWDM-SFP-1590**  
**CWDM-SFP-1610**



### **Xenpak**

10GBASE-SR XENPAK Module  
10GBASE-LR XENPAK Module  
10GBASE-ER XENPAK Module  
10GBASE-ZR XENPAK Module  
10GBASE-LX4 XENPAK Module  
10GBASE-LW XENPAK Module  
10GBASE-LR XENPAK Module for Catalyst 3750

**XENPAK-10GB-SR**  
**XENPAK-10GB-LR**  
**XENPAK-10GB-ER**  
**XENPAK-10GB-ZR**  
**XENPAK-10GB-LX4**  
**XENPAK-10GB-LW**  
**C3-XENPAK10GB-LR**



### **X2**

10GBASE-SR X2 Module  
10GBASE-LR X2 Module  
10GBASE-ER X2 Module

**X2-10GB-SR**  
**X2-10GB-LR**  
**X2-10GB-ER**



## DELL Approved or Compatible

### **SFP**

1000BASE SX SFP  
1000BASE LX SFP

**790-10070**  
**790-10071**



## DLINK Approved or Compatible

### **GBIC**

1000BASE-SX GBIC Module For Multimode Fiber  
1000BASE-LX GBIC Module For SM or MM Fiber  
1000BASE-LX GBIC Gigabit ETH Module 3.3V (10Km)  
1000BASE-LX GBIC Gigabit ETH Module 3.3V (30Km)  
100BASE-LX GBIC Gigabit ETH Module 5.0V (10Km)  
1000BASE-LX GBIC Gigabit ETH Module 5.0V (30Km)  
1000BASE-SX GBIC Gigabit ETH Module 5.0V (550m)  
1000BASE-LX GBIC Gigabit ETH Module 3.3/5.0V (80Km)  
1000BASE-T GBIC Gigabit ETH Module 3.3V

**DGS-701**  
**DGS-702**  
**DGS-703**  
**DGS-704**  
**DGS-705**  
**DGS-706**  
**DGS-707**  
**DGS-708**  
**DGS-711**



## DLINK Approved or Compatible - Continued

### **SFP**

1000BASE-LX Mini Gigabit Interface Converter  
1000BASE-SX Mini Gigabit Interface Converter  
1000BASE-LX Gigabit Interface Converter  
1000BASE-LX Gigabit Interface Converter

**DEM-310GT**  
**DEM-311GT**  
**DEM314GT**  
**DEM315GT**



### **XFP**

10GIGABIT XFP - 850nm Multi-MODE  
10GIGABIT XFP - 1310nm Single-MODE

**DEM-421XT**  
**DEM-422XT**



## EMULEX Approved or Compatible

### **GBIC**

Multi-Mode Shortwave Fiber Optic GBIC Module  
Single-Mode Longwave Fiber Optic GBIC Module

**LGB100-A1**  
**LGB100-L1**



## ENTERASYS Approved or Compatible

### **GBIC**

Gigabit Ethernet Port Interface Module - 1000BaseSX  
Gigabit Ethernet Port Interface Module - 1000Base-T  
Gigabit Ethernet Port Interface Module - 1000baseZX  
Gigabit Ethernet Port Interface Module - 1000BaseLX

**GPIM-01**  
**GPIM-02**  
**GPIM-08**  
**GPIM-09**



### **SFP**

1000Base-T, Mini Gbic w - RJ45 Connector  
1000Base-LX/LH (70Km Long Haul) Mini GBIC  
1000Base-SX Mini GBIC w - LC connector  
1000Base-SX Mini GBIC w - LC connector 2k reach  
1000Base-LX Mini GBIC w - LC connector  
1000Base-SX Mini GBIC w/MTRJ for 1G694-13

**MGBIC-02**  
**MGBIC-08**  
**MGBIC-LC01**  
**MGBIC-LC03**  
**MGBIC-LC09**  
**MGBIC-MT01**



### **XFP**

10GIGABIT Ethernet Interface with 850nm  
10GIGABIT Ethernet Interface with 1310nm

**10GBASE-SR-XFP**  
**10GBASE-LR-XFP**





## EXTREME Approved or Compatible

### GBIC

1000BASE-SX GBIC - Multimode  
1000BASE-LX GBIC - Singlemode  
1000BASE-ZX GBIC 70km - Singlemode  
1000BASE-ZX GBIC - Long Haul  
1000BASE-T GBIC - RJ45  
1000BASE-ZX GBIC 100km - Singlemode

10011  
10013  
10016  
10017  
10018  
10019



### SFP

1000BASE-SX SFP - Multimode  
1000BASE-LX SFP - Singlemode  
1000BASE-ZX SFP - Singlemode  
SFP, 1000BASE-BX-U, SMF (1310-nm TX/1490-nm RX)  
SFP, 1000BASE-BX-D, SMF (1490-nm TX/1310-nm RX)

10051  
10052  
10053  
10057  
10056



## FORCE 10 Approved or Compatible

### SFP

1000BaseSX Gig Eth SFP optics module, LC  
1000BaseT Gig Eth SFP optics module, RJ45  
1000BaseLX Gig Eth SFP optics module, LC  
1000BaseZX Gig Eth SFP optics module, LC  
1000BaseSX Gig Eth SFP optics module, MTRJ

GP-SFP2-1S  
GP-SFP2-1T  
GP-SFP2-1Y  
GP-SFP2-1Z  
GP-SFP2-MTRJ-1S



### XFP

LR/LW 10G XFP optics module (10KM)  
SR/SW 10 Gig Eth XFP optics module, LC (300m)

GP-XFP-1L  
GP-XFP-1S



## FOUNDRY Approved or Compatible

### GBIC

1000Base-SX GBIC optic  
1000Base-LX GBIC optic  
1000Base-LH GBIC optic

E1G-SX  
E1G-LX  
E1G-LH



### SFP

1000Base-SX SFP optic  
1000Base-LX SFP optic  
1000Base-LHA SFP optic  
1000Base-LHB SFP optic  
1000BASE-TX SFP Copper, RJ-45 Connector

E1MG-SX  
E1MG-LX  
E1MG-LHA  
E1MG-LHB  
E1MG-TX



## FOUNDRY Approved or Compatible - Continued

### XFP

10-GbE SR XFP OPTIC, MMF, LC  
10-GbE LR XFP OPTIC, SMF, LC

10G-XFP-SR  
10G-XFP-LR



## HEWLETT PACKARD Approved or Compatible

### GBIC

Short wave GBIC for Brocade/HP 2400 Switch  
Long wave GBIC for Brocade/HP 2400 Switch

A5225A  
A5226A



### SFP

HP Procurve mini-gbic 1000 base SX  
HP Procurve mini-gbic 1000 base LX  
HP Procurve mini-gbic 1000 base LH  
B Ver HP Procurve mini-gbic 1000base SX  
B Ver HP Procurve mini-gbic 1000base LX  
B Ver HP Procurve mini-gbic 1000base LH  
B Ver HP Procurve Mini-Gbic 1000Base-T

J4858A  
J4859A  
J4860A  
J4858B  
J4859B  
J4860B  
J8177B



### CWDM SFP

1470nm CWDM SFP HP compatible  
1490nm CWDM SFP HP compatible  
1510nm CWDM SFP HP compatible  
1530nm CWDM SFP HP compatible  
1550nm CWDM SFP HP compatible  
1570nm CWDM SFP HP compatible  
1590nm CWDM SFP HP compatible  
1610nm CWDM SFP HP compatible

ZX-SFP-CWDM-1470-HP  
ZX-SFP-CWDM-1490-HP  
ZX-SFP-CWDM-1510-HP  
ZX-SFP-CWDM-1530-HP  
ZX-SFP-CWDM-1550-HP  
ZX-SFP-CWDM-1570-HP  
ZX-SFP-CWDM-1590-HP  
ZX-SFP-CWDM-1610-HP



## HUAWEI Approved or Compatible

### GBIC

GBIC multi mode optical module(850nm,550m,SC)  
GBIC single mode optical module(1310nm,10km,SC)  
GBIC single mode optical module(1310nm,30km,SC)  
GBIC single mode optical module(1550nm,40km,SC)  
GBIC single mode optical module(1550nm,60km,SC)  
GBIC single mode optical module(1550nm,70km,SC)  
GBIC single mode optical module(1550nm,100km,SC)  
Electronic module-GBIC-1000base-T

GBIC-SX-MM850-A  
GBIC-LX-SM1310-A  
GBIC-LH30-SM1310  
GBIC-LH40-SM1550-A  
GBIC-LH40-1550NM  
GBIC-LH70-SM1550-A  
GBIC-LH100-SM1550  
GBIC-T-A



### GBIC

GBIC multi mode optical module(850nm,550m,SC)  
 GBIC single mode optical module(1310nm,10km,SC)  
 GBIC single mode optical module(1310nm,30km,SC)  
 GBIC single mode optical module(1550nm,40km,SC)  
 GBIC single mode optical module(1550nm,60km,SC)  
 GBIC single mode optical module(1550nm,70km,SC)  
 GBIC single mode optical module(1550nm,100km,SC)  
 Electronic module-GBIC-1000base-T

**GBIC-SX-MM850-A**  
**GBIC-LX-SM1310-A**  
**GBIC-LH30-SM1310**  
**GBIC-LH40-SM1550-A**  
**GBIC-LH40-1550NM**  
**GBIC-LH70-SM1550-A**  
**GBIC-LH100-SM1550**  
**GBIC-T-A**



### SFP

SFP single mode optical module(1310nm, 40km, LC)  
 SFP single mode optical module(1310nm,10km,LC)  
 SFP multi mode optical module(850nm, 550m,LC)  
 SFP single mode optical module(1550nm, 70km, LC)  
 100BASE-FX-SM-LR-1310nm-40KM-SFP-LC  
 100BASE-FX-SM-VLR-1550nm-80KM-SFP-LC  
 100 BASE-LX single mode sfp  
 SFP single mode optical module(1550nm, 40km, LC)  
 SFP single mode optical module(1550nm, 70km, LC)  
 1000BASE-LX-SM-IR-1310nm-10km-SFP-LC  
 SFP multi mode optical module(850nm, 550m,LC)  
 1000BASE-SX-MM-SR-850nm-0.55km-SFP-LC  
 SFP 1000Base-T electrical module (RJ-45, 100m)

**SFP-1.25G-LH40**  
**SFP-1.25G-LX10**  
**SFP-1.25G-SX**  
**SFP-1.25G-ZX70**  
**SFP-FE-LH40-SM1310**  
**SFP-FE-LH80-SM1550**  
**SFP-FE-LX-SM1310-A**  
**SFP-FE-LH40-SM1550**  
**SFP-GE-LH70-SM1550**  
**SFP-GE-LX-SM1310-A**  
**SFP-GE-SX-MM850**  
**SFP-GE-SX-MM850-A**  
**SFP-GE-T**



### CWDM SFP

CWDM SFP single mode optical module(1470nm,70km,LC)  
 CWDM SFP single mode optical module(1490nm,70km,LC)  
 CWDM SFP single mode optical module(1510nm,70km,LC)  
 CWDM SFP single mode optical module(1530nm,70km,LC)  
 CWDM SFP single mode optical module(1550nm,70km,LC)  
 CWDM SFP single mode optical module(1570nm,70km,LC)  
 CWDM SFP single mode optical module(1590nm,70km,LC)  
 CWDM SFP single mode optical module(1610nm,70km,LC)

**SFP-GE-LH70-SM1470**  
**-CW**  
**SFP-GE-LH70-SM1490**  
**-CW**  
**SFP-GE-LH70-SM1510**  
**-CW**  
**SFP-GE-LH70-SM1530**  
**-CW**  
**SFP-GE-LH70-SM1550**  
**-CW**  
**SFP-GE-LH70-SM1570**  
**-CW**  
**SFP-GE-LH70-SM1590**  
**-CW**  
**SFP-GE-LH70-SM1610**  
**-CW**



### Xenpak

10GBASE-ER-SM-1550nm-40KM-XENPAK-SC  
 10GBASE-SR-MM-850nm-300M-XENPAK-SC  
 10GBASE-LR-SM-1310nm-10KM-XENPAK-SC/PC

**XENPAK-LH40-SM1550**  
**XENPAK-LX-MM850**  
**XENPAK-LX-SM1310**



## HUAWEI Approved or Compatible - Continued

### **XFP**

10GBASE-SR XFP Module, Multi-Mode (850nm, LC)  
10GBASE-LR XFP Module Single Mode (1310nm, 10km, LC)

**XFP-SX-MM850**  
**XFP-LX-SM1310**



## INTEL Approved or Compatible

### **GBIC**

Intel(r) NetStructure Module, 1000BASE-SX GBIC  
Intel(r) NetStructure Module, 1000BASE-LX GBIC

**ESGBIC35VSX**  
**ESGBIC35VLX**



## JUNIPER Approved or Compatible

### **SFP**

1000BASE-SX transceiver SFP LC Connector  
1000BASE-LX transceiver SFP LC connector  
1000BASE-LH transceiver SFP LC connector  
1000BASE-T transceiver SFP RJ45 connector

**SFP-1GE-SX**  
**SFP-1GE-LX**  
**SFP-1GE-LH**  
**SFP-1GE-T**



### **Xenpak**

XENPAK 10GE Pluggable Optic Module, 10GBASE-SR, MM  
XENPAK 10GE Pluggable Optic, 10GBASE-LR, 10km  
XENPAK 10GE Pluggable Optic Module, 10GBASE-ER, 40  
XENPAK 10GE Pluggable Optic Module, 10GBASE-ZR 80km

**XENPAK-1XGE-SR**  
**XENPAK-1XGE-LR**  
**XENPAK-1XGE-ER**  
**XENPAK-1XGE-ZR**



## LINKSYS Approved or Compatible

### **SFP**

Gigabit SX Mini GBIC SFP  
1000BaseT Mini-GBIC SFP

**MGBSX1-UK**  
**MGBT1-UK**



## MARCONI Approved or Compatible

### **GBIC**

1 port GBIC 1000 Base-SX (MMF,SC)  
1 port GBIC 1000 Base-LX (SMF,SC)  
1 port GBIC 1000 Base-ZX (SMF,SC)  
Gigabit Ethernet GBIC up to 550m, SC connectors  
Gigabit Ethernet GBIC up to 10km, SC connectors  
Gigabit Ethernet GBIC up to 70km, SC connectors

**213-1002-000**  
**213-1003-000**  
**213-1004-000**  
**GBIC-GE-SXSC**  
**GBIC-GE-LXSC**  
**GBIC-GE-ZXSC**



## MARCONI Approved or Compatible - Continued

### **SFP**

Gigabit Ethernet SFP up to 550m, LC connectors  
Gigabit Ethernet SFP up to 10km, LC connectors  
Gigabit Ethernet SFP up to 70km, LC connectors

**SFP-GE-SXLC**  
**SFP-GE-LXLC**  
**SFP-GE-ZXLC**



## MILAN Approved or Compatible

### **GBIC**

1000Base SX Multimode GBIC  
1000Base LX Singlemode GBIC

**MIL-GBIC-SX**  
**MIL-GBIC-LX10**



### **SFP**

1000Base SX Multimode SFP  
1000Base LX Multimode SFP

**MIL-SFP-SX**  
**MIL-SFP-LX10**



## NETGEAR Approved or Compatible

### **GBIC**

1000BASE-SX GBIC Module  
1000BASE-LX GBIC Module

**AGM721F**  
**AGM722F**



### **SFP**

FIBER SFP GBIC MODUL / GSM73XX-SERIENS CPNT NMS  
1000BASE-LX SFP GBIC Module

**AGM731F**  
**AGM732F**



### **XFP**

10GBASE-SR XFP OPTICS MODULE  
10GBASE-LR XFP OPTICS MODULE

**AXM751**  
**AXM752**



## GBIC

1-port 1000Base-SX Gigabit Interface Converter  
1-port 1000Base-LX Gigabit Interface Converter  
1-port 1000Base-XD Gigabit Interface Converter - 50 km  
1-port 1000Base-ZX Gigabit Interface Converter  
1000Base-T GBIC, for BayStack products

AA1419001  
AA1419002  
AA1419003  
AA1419004  
AA1419042



## CWDM GBIC

1000BaseWDM GBIC - 1470nm  
1000BaseWDM GBIC - 1490nm  
1000BaseWDM GBIC - 1510nm  
1000BaseWDM GBIC - 1530nm  
1000BaseWDM GBIC - 1550nm  
1000BaseWDM GBIC - 1570nm  
1000BaseWDM GBIC - 1590nm  
1000BaseWDM GBIC - 1610nm

AA1419017  
AA1419018  
AA1419019  
AA1419020  
AA1419021  
AA1419022  
AA1419023  
AA1419024



## CWDM SFP

1000BaseCWDM SFP - 1470nm Wavelength 40km  
1000BaseCWDM SFP - 1490nm Wavelength 40km  
1000BaseCWDM SFP - 1510nm Wavelength 40km  
1000BaseCWDM SFP - 1530nm Wavelength 40km  
1000BaseCWDM SFP - 1550nm Wavelength 40km  
1000BaseCWDM SFP - 1570nm Wavelength 40km  
1000BaseCWDM SFP - 1590nm Wavelength 40km  
1000BaseCWDM SFP - 1610nm Wavelength 40km  
1000BaseCWDM SFP - 1470nm Wavelength, 70km  
1000BaseCWDM SFP - 1490nm Wavelength, 70km  
1000BaseCWDM SFP - 1510nm Wavelength, 70km  
1000BaseCWDM SFP - 1530nm Wavelength, 70km  
1000BaseCWDM SFP - 1550nm Wavelength, 70km  
1000BaseCWDM SFP - 1570nm Wavelength, 70km  
1000BaseCWDM SFP - 1590nm Wavelength, 70km  
1000BaseCWDM SFP - 1610nm Wavelength, 70km

AA1419025  
AA1419026  
AA1419027  
AA1419028  
AA1419029  
AA1419030  
AA1419031  
AA1419032  
AA1419033  
AA1419034  
AA1419035  
AA1419036  
AA1419037  
AA1419038  
AA1419039  
AA1419040



## SFP

1-port 1000Base-SX Gigabit Interface Converter  
1-port 1000Base-SX Small Form MT-RJ  
1-port 1000Base-LX Gigabit Interface Converter  
1-Port 1000BASE-T SFP  
1000 BASE-SX SFP  
1000BASE-BX10 SFP Tx1310nm/Rx1490nm  
1000BASE-BX10 SFP Tx1490nm/Rx1310nm  
100BASE-FX SFP 1310nm MMF 2KM

AA1419013  
AA1419014  
AA1419015  
AA1419043  
AA1419046  
AA1419069  
AA1419070  
AA1419074



## PACKETFRONT Approved or Compatible

### SFP

1000BASESX 850 nm MM SFP Packetfront  
1000BASEFX 1310 nm SM SFP Packetfront  
1000BASEFX 1550 nm SM SFP Packetfront  
Packet front compatible BIDI SFP TX1310 - RX1490  
Packet front compatible BIDI SFP TX1490 - RX1310

*SFP-8519-7D-PAC*  
*SFP-1319-7D-PAC*  
*SFP-1521-7D-PAC*  
*SFP-BD-TX1310-RX1490*  
*SFP-BD-TX1490-RX1310*



## PLANET Approved or Compatible

### SFP

SFP-Port 1000Base-T Module  
SFP-Port 1000Base-LX mini-GBIC module  
SFP-Port 1000Base-SX mini-GBIC module  
SFP-Port 1000Base-LX mini-GBIC module-70KM  
SFP-Port 1000Base-LX mini-GBIC module-120KM  
SFP 1000Base-LX (WDM,TX:1310nm) module-10KM  
SFP 1000Base-LX (WDM,TX:1550nm) module-10KM  
SFP 1000Base-LX (WDM,TX:1310nm) module-40KM  
SFP 1000Base-LX (WDM,TX:1550nm) module-40KM

*MGB-GT*  
*MGB-LX*  
*MGB-SX*  
*MGB-L70*  
*MGB-L120*  
*MGB-LA10*  
*MGB-LB10*  
*MGB-LA40*  
*MGB-LB40*



## RIVERSTONE Approved or Compatible

### GBIC

GBIC, MMF 850nm, Typical Reach: 500 meters  
GBIC, 1000BaseT, Typical Reach: 100 meters  
GBIC, SMF 1550nm, Typical Reach: 80 km  
GBIC, SMF 1310nm, Typical Reach: 10 km

*GIC-11*  
*GIC-12*  
*GIC-18*  
*GIC-19*



### SFP

Single Gb Ethernet Small Form-factor Pluggable SFP SX  
Single Gb Ethernet Small Form-factor Pluggable SFP ZX  
Single Gb Ethernet Small Form-factor Pluggable SFP LX

*SFPGE-11*  
*SFPGE-18*  
*SFPGE-19*



## SMC Approved or Compatible

### GBIC

1000BASE-SX GBIC 550m Transceiver  
1000BASE-LX GBIC 10Km Transceiver  
1000BASE-ZX GBIC 70Km Transceiver

*SMCBGSSCX1*  
*SMCBGLSCX1*  
*SMCBGZSCX1*



### SFP

1000BASE-SX Small Form Pluggable (SFP)  
1000BASE-LX Small Form Pluggable (SFP)  
1000BASE-ZX Small Form Pluggable (SFP)

*SMCBGSLCX1*  
*SMCBGLLCX1*  
*SMCBGZLCX1*



## TELCO Approved or Compatible

### SFP

Telco 1000BaseSX MM SFP (850nm) LC Distance 550m  
Telco 1000BaseLX SM SFP (1310nm) LC Distance 10km  
Telco 1000BaseTX MiniGBIC transceiver

**BTI-MGBIC-GSX-LC**  
**BTI-MGBIC-GLX-LC**  
**BTI-MGBIC-GTX**



## TRENDNET Approved or Compatible

### GBIC

1000Base-SX GBIC  
1000Base-LX GBIC  
1000Base-ZX GBIC

**TEG-GBSX**  
**TEG-GBS10**  
**TEG-GBS50**



### SFP

1000Base-SX SFP  
1000Base-LX SFP

**TEG-MGBSX**  
**TEG-MGBS10**



## VIXEL Approved or Compatible

### GBIC

GBIC, Shortwave, Dual SC Connector, Single-pack  
GBIC, Longwave, Dual SC Connector, Single-pack

**OE1063SW-1**  
**OE1063LW-1**



## ZYXEL Approved or Compatible

### GBIC

1.25Gbps Multi-mode 850nm VCSEL, 550M reach  
1.25Gbps Single Mode 1310nm FP, 10KM reach  
1.25Gbps Single Mode 1550nm DFB, 80KM reach

**GBIC-SX-ZYXEL**  
**GBIC-LX-10-ZYXEL**  
**GBIC-ZX-80-ZYXEL**



### SFP

1.25Gbps Multi-mode 850nm VCSEL, 550M reach  
1.25Gbps Single Mode 1310nm FP, 10KM reach  
1.25Gbps Single Mode 1310nm DFB, 40KM reach  
1.25Gbps Single Mode 1550nm DFB, 80KM reach

**SFP-SX-ZYXEL**  
**SFP-LX-10-ZYXEL**  
**SFP-LHX1310-40**  
**-ZYXEL**  
**SFP-ZX-80-ZYXEL**





## Optical transceiver

### Introduction

JDSU customers have access to a broad range of optical transceiver product families for applications requiring high data rates. JDSU transceivers are available in both short wave (850 nm) and long wave (1310 nm) lasers. All fibre optic products have integrated electronics that are designed and manufactured by JDSU to ensure exceptional quality. JDSU offers RoHS 6/6 compliance, multiple data rates, distances up to 20 km for various applications, and excellent reliability and performance.

## SFP Pluggable Transceivers for Ethernet and Fibre Channel

The JDSU Datacom Small Form Factor Pluggable (SFP) transceiver product families provide high-speed serial links at signaling rates of up to 4.25 Gb/s, which conform either to the Gigabit Ethernet 802.3 or American National Standards Institute's (ANSI) Fibre Channel, FC- PI specification. All Datacom SFP transceivers are Class 1 laser safe and have EMI emissions below residential FCC Class B.

This family of products exceeds MSA compliance with broader supply and laser voltage tolerances, interoperability with legacy devices that use CD lasers, and interoperability with other standards-compliant transceivers at link distances up to 80 km. All 850 nm products use enhanced oxide lasers and transmit optical subassemblies designed for reliability and extra-long-life operations.

The JSH family expands upon the original JSP/JSM family features with extended temperature operation and a bail latch for high density host card packaging. JSH products are respectively product-enhanced with SFF 8472 compliant digital diagnostic monitoring features.



### Key Features

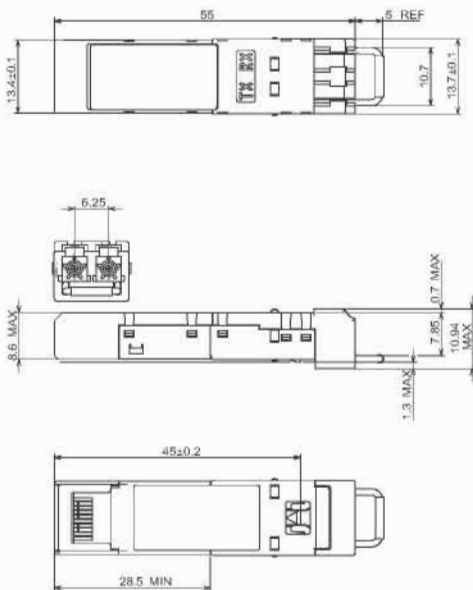
- Proven high reliability, <100 FIT
- Low bit error rate (<10<sup>-12</sup>)
- Hot-plug surge protection
- 850 nm VCSEL, 1310 Fabry Perot
- Ethernet and/or Fibre Channel data rates
- Tri-speed versions for stocking simplicity
- Metal bail de-latching option
- Extended temperature operation options
- Digital Diagnostic Monitoring (SFF8472)

### Applications

- High speed data communications

### Compliance

- Class 1 laser safe
- EMI emissions below FCC Class B
- UL, CDRH, and TUV certified
- SFP Transceiver MSA compliant
- IEC 60825, IEC 60950 compliant
- Ethernet 802.3 compliance
- Fibre Channel FC-PI compliance
- CE Mark, CTIK approved
- Telcordia GR-468-CORE stress tested



# 850 nm Short Wave Transceiver Specifications

<b>Parameter</b>	<b>JSH-21S3AB3<sup>1</sup></b> <b>JSH-21S3AB3<sup>1,2</sup></b>	<b>JSH-42S3AB3<sup>1</sup></b> <b>JSH-42S3AR3<sup>1</sup></b> <b>JSH-42S4DB3<sup>1</sup></b> <b>JSH-42S4DR3<sup>1,2</sup></b> <b>JSH-42S3AD3<sup>1,2</sup></b> <b>JSH-42S4DD3<sup>1,2</sup></b>
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## Applications:

Fibre channel	2/1 Gb/s	4/2/1 Gb/s
Ethernet	1 Gb/s (SX)	1 Gb/s (SX) compatible/compliant
Diagnostic monitoring	Yes	Yes

## Electrical Interface

Transmit signal input differential swing	400 to 2000 mV <sub>P-P</sub>	-
Receive signal input differential swing	-	390 to 1600 mV <sub>P-P</sub> 600 to 1600 mV <sub>P-P</sub>
Control I/O signals	TTL	TTL

## Optical

Data rate(s)	1.0625, 1.250, 2.125 Gb/s	1.0625, 1.250, 2.125, 4.25 Gb/s
Max. launch power into fiber (average)	-4.0 dBm	-1.5 dBm
Min. launch power into fiber (average)	-9.5 dBm	-9.0 dBm
Receiver optical modulation amplitude (OMA)		
1.0625 Gb/s	31 to 2000 μW	31 to 2000 μW
2.125 Gb/s	449 to 2000 μW	49 to 2000 μW
4.25 Gb/s	-	61 to 2000 μW
Maximum bit error rate at minimum receiver sensitivity		<10 <sup>-12</sup>

## Power

Voltage	3.3 V±10%
Current	200 mA maximum

## Environment

Operating temperature	
JSH	-15 to 85 °C
JSH-42S4DB3, JSH-42S4DD3, JSH-42S4DR3	-40 to 85 °C
Operating humidity	8 to 80%
Storage temperature	-40 to 90 °C

## Mechanical

Dimensions	SFP MSA compliant.
Form factor	Small form factor, LC connector

## Digital Diagnostics

Standard	SFP8472
Enhance features	Yes

## Laser Safety

US	DHHS 21 CFR(J) conformant & UL Class-1
International	IEC 60825 -1 with TUV & UL marks, Class-1

# 1310 nm Long Wave Transceiver Specifications

Parameter	JSH-21L3AR3 <sup>1</sup>	JSH-42L3AB3-5G <sup>1</sup> JSH-42L3AD3-5G <sup>1,2</sup> JSH-42L3AB3-5 <sup>1</sup> JSH-42L3AD3-5 <sup>1,2</sup> JSH-42L3AB3-20 <sup>1</sup> JSH-42L3AD3-20 <sup>1,2</sup>
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## Applications:

Fibre channel	2/1 Gb/s, 1Gb/s	4/2/1 Gb/s, 1Gb/s
Ethernet	1 Gb/s (LX)	1 Gb/s (LX)
Diagnostic monitoring	Yes	Yes

## Electrical Interface

Transmit signal input differential swing	400 to 2000 mV <sub>p-p</sub>	300 to 2400 mV <sub>p-p</sub>
Receive signal input differential swing	600 to 1000 mV <sub>p-p</sub>	390 to 1600 mV <sub>p-p</sub>
Control I/O signals	TTL	600 to 1600 mV <sub>p-p</sub>

## Optical

Data rate(s)	2.125, 1.250, 1.0625 Gb/s	4.25, 2.125, 1.250, 1.0625 Gb/s
Max. launch power into fiber (average)	-3.0 dBm	-
Min. launch power into fiber (average)	-8.0 dBm	-
Receiver optical modulation amplitude (OMA)	15 to 1000 $\mu$ W	-
Maximum bit error rate at minimum receiver sensitivity	$<10^{-12}$	$<10^{-12}$

## Power

Voltage	3.3 V $\pm$ 10%
Current	225 mA maximum

## Environment

Operating temperature		
JSH (except JSH-xxLxDxx)	-15 to 85 °C	-15 to 85 °C
JSH offering <sup>3</sup> 4G	-	-40 to 85 °C
Operating humidity		8 to 80%
Storage temperature		-40 to 90 °C

## Mechanical

Dimensions	SFP MSA compliant
Form factor	Small form factor, LC connector

## Digital Diagnostics

Standard	SFF8472
Enhance features	Yes

## Laser Safety

US	DHHS 21 CFR(J) conformant & UL Class-1
International	IEC 60825 -1 with TUV & UL marks, Class-1

# 10GBASE-LR XFP Optical Transceiver

The JDSU 10 Gb/s 1310 nm Optical XFP Transceiver is an integrated fibreoptic transceiver that provides a high-speed serial link at signaling rates from 9.95 Gb/s to 11.10 Gb/s. The module complies with the IEEE 802.3ae 10GBASE-LR standard, the 10GFC standard and the 10 Gigabit Small Form Factor Pluggable (XFP) Multi-Source Agreement (MSA).



The 10 Gb/s 1310nm Optical XFP Transceiver integrates the receive and transmit paths in one package. On the transmit side, the 10 Gb/s serial data stream is recovered, retimed, and passed to a laser driver. The laser driver biases and modulates a 1310 nm distributed feedback (DFB) laser, enabling data transmission over single-mode fibre through an industry-standard LC connector. On the receive side, the 10 Gb/s optical data stream is recovered from a PIN photodetector/transimpedance amplifier, retimed, and passed to an output driver. This module features a hot-pluggable XFI-compliant electrical interface.

## Key Features

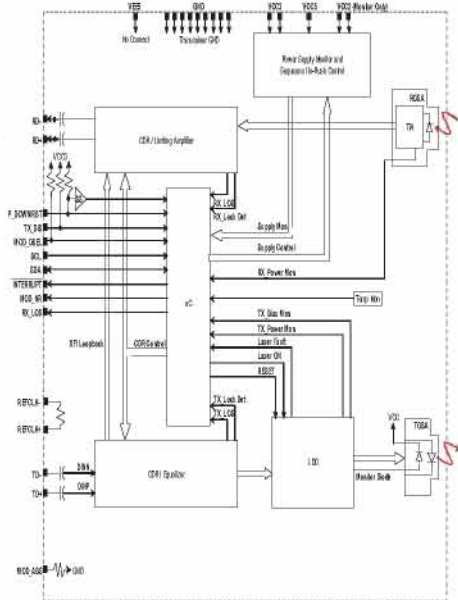
- 1310 nm
- Compliant at 10.31 Gb/s (Ethernet) and 10.52 Gb/s (Fibre Channel)
- Positive power supply operation (3.3 V, 5.0 V)
- Typical power dissipation of 2.0 W
- Power-down capability to less than 50 mW
- Digital Diagnostic Monitoring (DDM) support
- No reference clock required
- XFI AC-coupled electrical interface
- XFI loopback implemented
- Integrated electrical equalization on transceiver transmit side
- Integrated Clock and Data Recovery (CDR) for receive and transmit data path
- Bail latch for easy removal
- Bit error rate <10<sup>-12</sup>
- RoHS with lead in solder exemption

## Applications

- Storage Area Networks (SAN)
- Local Area Networks (LAN)
- Ethernet switches and applications
- Fibre channel switches and applications
- Client/Server environments

## Compliance

- IEEE 802.3ae standard
- 10 GFC 1200-MX-SN-I standard
- Class 1 Laser Safety
- UL and TUV certified
- Tested in accordance with Telcordia GR-468



Parameter	Specifications
<b>Electrical:</b>	
Transmit signal input differential swing	120/820 mV <sub>r,p</sub>
Receive signal output differential swing	340/850 mV <sub>r,p</sub>
Control I/O signals	Low voltage TTL (3.3 V)
<b>Optical</b>	
Wavelength	1310 nm
Data rate	Compliant at 10.31 Gb/s (Ethernet) and 10.52 Gb/s (Fibre Channel)
Minimum launch power into fiber (average)	-8.2 dBm
Maximum launch power into fiber (average)	0.5 dBm
Transmitter and dispersion penalty (TDP)	Maximum 3.2 dBm
Optical modulation amplitude (OMA)	Maximum -5.2 dBm
Stressed receiver sensitivity (OMA)	Maximum -10.3 dBm
Maximum bit error rate at minimum receiver sensitivity	<10 <sup>-12</sup>
<b>Power</b>	
Transceiver power	Typical 2.0W (2.5W maximum)
Voltage	3.3V, 5.0V
Voltage tolerance	±5%
Current	Typical 375 mA (3.3V), 150 mA (5.0V)
<b>Environmental</b>	
Operating temperature, case	Maximum 0 to 75 °C
Operating humidity	8 to 80%
<b>Mechanical</b>	
Dimensions (W x D x H)	XFP MSA compliant
Form factor	XFP, LC connector
<b>Digital Diagnostic Monitoring</b>	
Base	XFP DDM
Enhance options	XFP DDM
<b>Laser Safety</b>	
US	21 CFR 1040.10 except for deviations pursuant to Laser Notice 50 (2001); UL approved for US and Canada
International	IEC 60825:Am.2 (2001) and IEC 60950 (CB Scheme)

# 10GBASE-SR XFP Optical Transceiver

The JXP Series 10 Gb/s 850 nm XFP Transceiver is an integrated fibreoptic transceiver that provides a high-speed serial link at signaling rates from 9.95 Gb/s to 11.10 Gb/s. The module complies with IEEE 802.3ae 10GBASE-SR (Ethernet) and 10 GFC 1200-MX-SN-I (Fibre Channel) standards, as well as with the XFP Transceiver Multisource Agreement (MSA). The 10 Gb/s 850 nm XFP Transceiver is protocol-agnostic and can be used for Ethernet or Fibre Channel systems, thereby lowering customer inventory requirements and costs.



The 10 Gb/s 850 nm XFP Transceiver integrates receive and transmit paths in one package and is designed for reliability and performance. On the transmit side, the 10 Gb/s serial data stream is recovered, retimed and passed to a laser driver. The laser driver biases and modulates an 850 nm VCSEL, enabling data transmission at distances of up to 300m over multimode fibre (MMF) through an industry standard LC connector. On the receive side, the 10 Gb/s optical data stream is recovered from a PIN photodetector/transimpedance amplifier, retimed and passed to an output driver. This module features a hot-pluggable XFI compliant electrical interface.

## Key Features

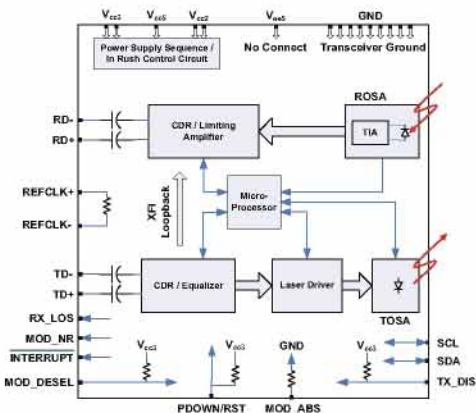
- 850 nm VCSEL for up to 300 m reach over MMF
- Positive power supply operation (1.8 V, 3.3 V, 5.0 V)
- Power dissipation 2.0 W max
- Power-down capability to less than 50 mW
- Supports data rates from 9.95 Gb/s to 11.10 Gb/s
- XFI AC-coupled electrical interface
- Digital Diagnostic Monitoring (DDM) support
- Integrated electrical equalization on transceiver transmit side
- Integration Clock and Data Recovery (CDR) for receive and transmit data path
- No reference clock needed for JXP-01SGAA1
- Bail latch for easy removal
- Bit error rate <10<sup>-12</sup>

## Applications

- Storage Area Networks (SAN)
- Ethernet switches and applications
- Fibre channel switches and applications
- Local Area Networks (LAN)
- Client/Server environments

## Compliance

- IEEE 802.3ae standard
- 10 GFC 1200-MX-SN-I standard
- Class 1 Laser Safety
- UL and TUV certified
- Tested in accordance with Telcordia GR-468



# 10GBASE-SR XFP Optical Transceiver

Parameter		JXP-D1SWAA1	JXP-D1SGAA1
<b>Electrical:</b>			
Transmit signal input differential swing		120/820 mV <sub>P-P</sub>	120/820 mV <sub>P-P</sub>
Receive signal output differential swing		340/850 mV <sub>P-P</sub>	340/850 mV <sub>P-P</sub>
Control I/O signals		Low voltage TTL (3.3 V)	Low voltage TTL (3.3 V)
External reference clock		Yes	No
<b>Optical</b>			
Wavelength		850 nm	850 nm
Data rate		9.95 to 11.10 Gb/s	9.95 to 11.10 Gb/s
Minimum launch power into fiber (average)		-7.3 dBm	-7.3 dBm
Maximum launch power into fiber (average)		-1.0 dBm	-1.0 dBm
Transmitter and dispersion penalty (TDP)	Maximum	3.9 dBm	3.9 dBm
Stressed receiver sensitivity (OMA)	Maximum	-7.5 dBm	-7.5 dBm
Maximum bit error rate at minimum receiver sensitivity		<10 <sup>-12</sup>	<10 <sup>-12</sup>
<b>Power</b>			
Transceiver power	Maximum	2.0W	2.0W
Voltage		1.8V, 3.3V, 5.0V	1.8V, 3.3V, 5.0V
Voltage tolerance		±5%	±5%
Current	Typical	530 mA (1.8V), 110 mA (3.3V), 60 mA (5.0V)	
<b>Environmental</b>			
Operating temperature, ambient		0 to 55 °C	0 to 55 °C
Operating temperature, case	Maximum	70 °C	70 °C
Operating humidity		8 to 80%	8 to 80%
Storage temperature		-40 to 85 °C	-40 to 85 °C
<b>Mechanical</b>			
Dimensions (W x D x H)		XFP MSA compliant	XFP MSA compliant
Form factor		XFP, LC connector	XFP, LC connector
<b>Digital Diagnostic Monitoring</b>			
Diagnostics		XFP DDM compliant	XFP DDM compliant
Control		XFP DDM compliant	XFP DDM compliant
Serial ID (base & extended)		XFP DDM compliant	XFP DDM compliant
<b>Laser Safety</b>			
US		21 CFR 1040.10 except for deviations pursuant to Laser Notice 50 (2001); UL approved for US and Canada	
International		IEC 60825:Am.2 (2001) and IEC 60950 (CB Scheme)	

# 10GBASE-SR X2 Optical Transceiver

The JDSU 10GBASE-SR X2 Transceiver is an integrated fibreoptic transceiver that provides a high-speed serial link at a signaling rate of 10.3125 Gb/s for Ethernet and 10.51875 Gb/s for Fibre Channel. This product complies with the IEEE 802.3ae 10GBASE-SR standard, the 10G Fibre Channel standard, and the X2 Transceiver Multi-Source Agreement (MSA) (Rev 2.0b).



The transceiver uses a short wavelength (850 nm) VCSEL that enables data transmission over multi-mode fibre at distances of up to 300 m. This module features a 4-bit XAUI differential hot-pluggable electrical interface and accepts an industry standard duplex SC optical connector.

Digital diagnostic monitoring (DDM) is implemented and fully compliant with X2 DDM architecture. The unit monitors temperature, receive optical power, transmit optical power, and laser bias current.

Support for longer distances is available. Contact your Zyco Account Manager.

## Key Features

- 850 nm, up to 300 m over multimode fibre (MMF)
- 10.3125 Gb/s data rate (Ethernet); 10.51875 Gb/s (Fibre Channel)
- 4-bit XAUI differential AC-coupled electrical interface
- Positive power supply operation (1.8 V, 3.3 V)
- 2.8 W typical, 3.6 W maximum
- Low power mode
- Digital diagnostic monitoring
- Single-mode duplex SC optical connector

## Applications

- Local Area Networks (LAN)
- Storage Area Networks (SAN)
- Ethernet switches and applications
- Fibre Channel switches and applications

## Compliance

- IEEE 802.3ae standard
- 10GFC standard
- X2 MSA Revision 2.0b
- Tested in accordance with Telcordia GR-468
- Class 1 laser safety
- UL and TUV certified



## Parameter

**JX2-13SMAA1 (Ethernet)**  
**JX2-15SMAA1 (Fibre Channel)**

### Electrical Interface:

Transmit signal input differential swing	160/2000 mV <sub>P-P</sub>
Receive signal output differential swing	800/1600 mV <sub>P-P</sub>
Control I/O signals	Low voltage TTL (3.3 V)

### Optical

Wavelength	850 nm
Data rate	10.3125 Gb/s and 10.51875 Gb/s
Distance	Up to 300 m
Maximum launch power into fiber (average)	-1.08dBm
Minimum launch power into fiber (average)	-4.0 dBm
Transmitter and dispersion penalty (TDP)	Maximum 3.9 dB
Optical modulation amplitude (OMA)	Maximum -5.2 dBm
Stressed receiver sensitivity (OMA)	Maximum -10.3 dBm
Extinction ratio (ER)	Maximum 3.0 dB
Maximum bit error rate at minimum receiver sensitivity	$<10^{-12}$

### Power

Power	Typical	2.8 W
	Maximum	3.6 W
Voltage		1.8 V (±5%), 3.3 V (±5%)
Supply current	Typical	375 mA (1.8 V), 650 mA (3.3 V)
	Maximum	500 mA (1.8 V), 800 mA (3.3 V)

### Environmental

Operating temperature (case)	0 to 70 °C
Operating humidity	8 to 80%
Storage temperature	-40 to 85 °C

### Mechanical

Dimension	X2 MSA Revision 2 compliant
Form factor	X2, SC connector

### Digital Diagnostics

Base	XENPAK DDM
Enhance options	ALL

### Laser Safety

US	21 CFR 1040.10 except for deviations pursuant to Laser Notice 50 (2001); UL approved for US and Canada
International	IEC 60825:Am.2 (2001) and IEC 60950 (CB Scheme)

## C-Series CWDM Multiplexers

### Introduction

The C-series is an equivalent passive Mux/Demux and OADM portfolio to Cisco Systems second generation of passive CWDM devices. The modules multiplex and demultiplex optical CWDM wavelength and increase fibre capacity by a factor of 8. The C-series offers identical functional design but with improved performance and interoperability. Cisco's network design rules can be applied. They are fully compliant to ITU G.694.2 and ITU G.695.

The modules are based on a standard LGX building practice and offer an easy installation and connection process. Two modules can be mounted into a 19" or 23" bracket. Wavelength colour coding to industry practice and in-line with CWDM devices from Cisco Systems.

The C-series consists of an 8 channel Mux/Demux module, two 4 channel Optical Add/Drop Multiplexers (OADMs) and eight single-wavelength dual channel OADMs. Each module offers low insertion loss, optical monitoring ports tapping 2% of the optical light signals allowing live monitoring and troubleshooting of the CWDM signals, as well as the mixing of 1310 nm CWDM signals on the same fibre infrastructures.

### Applications

All optical communication systems such as:-  
Gigabit Ethernet, SDH/SONET, ATM, ESCON, Fibre Channel, FTTx and CATV.

### Features & Benefits

- Multiplexing of up to 8 CWDM wavelengths
- Low insertion loss
- Compliant to ITU G.694.2 and G.695
- 2% Monitoring ports on every network port
- 1 and 4 channel OADM's
- LC/UPC connectors
- 1300 nm transparency on OADMs for legacy traffic
- 1U Low profile modular design
- passive, no electric power is required
- extremely reliable (MTBF ca. 500 years)



### Mechanical Specification

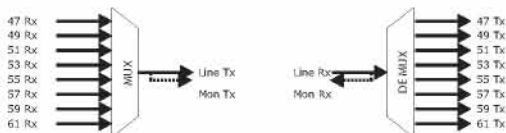
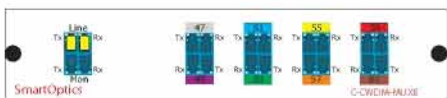
Material: Aluminium

Weight: 1.0 kg

Dimensions: W212 x H43 x D192 mm  
19" and ETSI mountable

## Product description

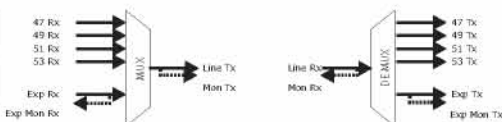
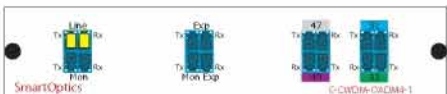
8 ch. CWDM Mux/Demux, LC connectors, 2% monitor port  
1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610



## Part code

**CWDM-MUX8A-C**

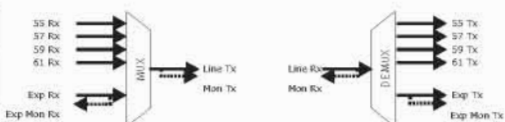
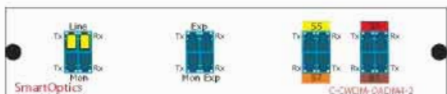
4 ch. CWDM OADM, LC connectors, 2% monitor port  
1470, 1490, 1510, 1530



**CWDM-OADM4-1-C**

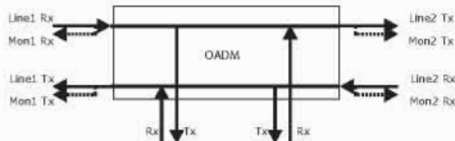
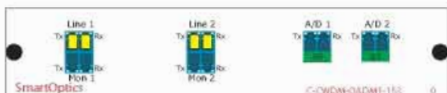
4 ch. CWDM OADM, LC connectors, 2% monitor port  
1550, 1570, 1590, 1610

**CWDM-OADM4-2-C**



Single wavelength, 2 channels OADM, 2% monitor ports  
xxxx = 1470, 1490, 1510, 1530, 1550, 1570, 1590 or 1610 nm

**CWDM-OADM1-XXXX-C**



2 Slot Chassis for CWDM Mux Plug in Modules

**CWDM-CHASSIS-2-C**

Find: [CWDM Optical Transceivers - pages 03-04](#)



## T-Series CWDM Multiplexers

### Introduction

The T-Series CWDM Multiplexers, multiplex and demultiplex optical CWDM wavelengths using high quality filters. They fully support ITU G.694.2 and G.695 and are the ideal way to add more capacity to an existing fibre network. By multiplexing 8 CWDM wavelengths, the capacity of the fibre will be increased significantly. Furthermore, the modules are prepared for a DWDM upgrade path to add further 16 DWDM channels. An optional 1310 nm expansion port allows legacy 1310 nm traffic to also be added to the same fibre network. It can also be used to increase the capacity of the fibre from 8 to 16 CWDM channels by utilising 8 CWDM channels in the 1310 nm window. Monitoring ports tapping 2% of the optical light signals allowing live monitoring and troubleshooting of the CWDM signals, as well as the mixing of 1310 nm CWDM signals on the same fibre infrastructures.

The modules are based on a standard LGX building practice and offer a very easy installation and connection process. Two modules can be mounted into a 19" or 23"-bracket. Industry practise wavelength colour coding allows easy set-up and installation resulting in a true Plug and Play experience.

### Applications

All optical communication systems, such as:  
-Gigabit Ethernet, SDH/SONET, ATM, ESCON,  
Fibre Channel, FTTx and CATV.

### Features & Benefits

- Multiplexing of up to 16 CWDM wavelengths
- Low insertion loss
- Compliant to ITU G.694.2 and G.695
- Optional 1310 nm port for legacy traffic or CWDM upgrade
- LC/UPC connectors
- 1U Low profile modular design
- passive, no electric power is required
- extremely reliable (MTBF ca. 500 years)

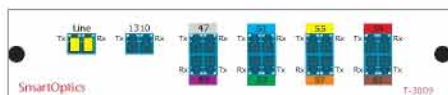


### Mechanical Specification

Material: Aluminium  
Weight: 1.0 kg  
Dimensions: W212 x H43 x D192 mm  
19" and ETSI mountable

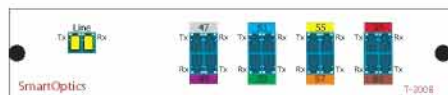
8 ch. + 1 CWDM Mux/Demux, LC connectors, 1310 nm extension port 1471, 1491, 1511, 1531, 1551, 1571, 1591, 1611

**T-3009**



8 ch. CWDM Mux/Demux, LC connectors 1471, 1491, 1511, 1531, 1551, 1571, 1591, 1611

**T-3008**



4 ch. + 1 CWDM OADM, LC connectors, 1310 nm extension port 1511, 1531, 1551, 1571

**T-3005**



4 ch. CWDM OADM, LC connectors 1511, 1531, 1551, 1571

**T-3004**



1310/1550 bandsplitter, CWDM enabled

**T-3001**



See overleaf full list of 4GB fc CWDM SFP's.

## 4 Gbit/S Fibre Channel Transceivers

The SO-SFP-4GFC transceiver family are small form factor pluggable (SFP) modules for bi-directional serial optical data communications such as 4x/2x/1x Fibre Channel and 1000BASE Ethernet. The modules are hot pluggable and digital diagnostic functions are available via an I2C serial bus specified in the SFP MSA SFF-8472.

The modules meet the requirements of the IEEE 802.3 Gigabit Ethernet standard and ANSI Fibre Channel specifications, and are suitable for interconnections in Gigabit Ethernet and Fibre Channel environments. The family covers a wide range of applications, with 850nm versions available for multimode fibre and 1310nm and CWDM wavelengths available for singlemode fibre.

CWDM modules operate at nominal Coarse Wavelength Division Multiplexing (CWDM) wavelengths. Eight centre wavelengths are available from 1471 nm to 1611 nm with each step being 20 nm. The CWDM characteristics are fully compliant to the wavelength parameters specified in ITU standards G.694.2 and G.695

### Applications

- 4.25 Gb/s, 2,125 Gb/s & 1.0625 Gb/s Fibre Channel
- 1000BASE Ethernet

### Features

- Up to 20 km transmission at 1310 nm
- Up to 100 km transmission at 1550 nm
- Up to 80 km transmission at CWDM wavelengths
- Hot-Pluggable SFP footprint LC Optical Transceiver
- Small Form-Factor Pluggable (SFP) MSA compatible
- 8 CWDM wavelengths ( $\lambda$ ): 1471 nm to 1611 nm
- SFF-8472 Digital Diagnostic Function



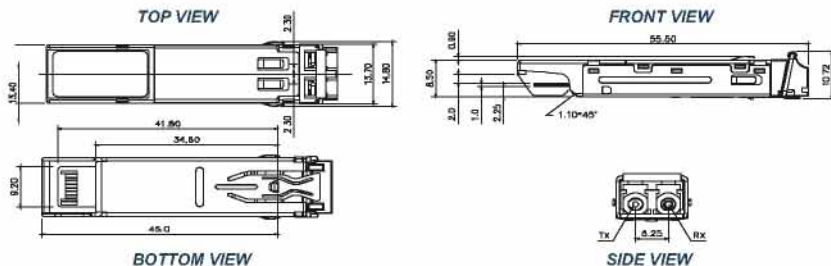
## Product description

## Part code

### 4x/2x/1x Fibre Channel/FICON

- 4/2/1 Gbps Fibre Channel/FICON, 850nm, 7dB, 150m
- 4/2/1 Gbps Fibre Channel/FICON, Digital Diagnostic, 1310nm, 10dB, 5km
- 4/2/1 Gbps Fibre Channel/FICON, Digital Diagnostic, 1310nm, 10dB, 10km
- 4/2/1 Gbps Fibre Channel/FICON, Digital Diagnostic, 1310nm, 13dB, 20km
- 4/2/1 Gbps Fibre Channel/FICON, Digital Diagnostic, 1310nm, 18dB, 30km
- 4/2/1 Gbps Fibre Channel, Digital Diagnostic, 1550nm, 18dB, 50km
- 4/2/1 Gbps Fibre Channel, Digital Diagnostic, 1550nm, 28dB, 100km

- SO-SFP-4GFC-SD
- SO-SFP-4GFC-L5D
- SO-SFP-4GFC-L10D
- SO-SFP-4GFC-L20D
- SO-SFP-4GFC-L30D
- SO-SFP-4GFC-L50D
- SO-SFP-4GFC-L100D



### CWDM 4x/2x/1x Fibre Channel/FICON

- 4/2/1 Gbps Fibre Channel, Digital Diagnostic, CWDM, 18dB, 50km
- 4/2/1 Gbps Fibre Channel, Digital Diagnostic, CWDM, 28dB, 80km

- SO-SFP-4GFC-50D-Cxx
- SO-SFP-4GFC-80D-Cxx

C47 = CWDM 1470nm, C49 = CWDM 1490nm, C51 = CWDM 1510nm, C53 = CWDM 1530nm  
C55 = CWDM 1550nm, C57 = CWDM 1570nm, C59 = CWDM 1590nm, C61 = CWDM 1610nm

### DWDM 4x/2x/1x Fibre Channel/FICON

- 4/2/1 Gbps Fibre Channel, Digital Diagnostic, DWDM, 30dB, 80km

- SO-SFP-4GFC-80D-Dxxxx

Dxxxx = 45 lambda'da's at ITU grid (please see datasheet)

Dxxxx = D9160 ~ D9600 = 191.60 THz - 196.00 THz

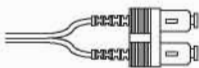
1564.68 nm = 191.60 THz = D9160 and 1529.55 nm = 196.00 THz = D9600

# Fibre optic patch leads

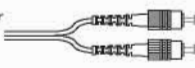
As a leading global distributor of optical products Zycko understands the requirements of fibre optic patch leads in today's and tomorrow's networks. As well as understanding the products we also understand the demands laid upon those who have to install them. This is why we hold vast stocks of fibre leads in many different lengths in OM1, OM2, OM3 & OS1 fibre

## Fibre cable selection guide

SC Connector



FC Connector



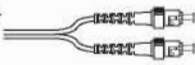
LC Connector



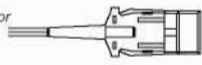
E2000 Connector



ST Connector



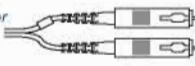
Escon Connector



MTRJ Connector



MU Connector



SMA Connector



FDDI Connector



**We can offer the following:**

**OM1** = Multimode 62.5/125 Fibre / **OM2** = Multimode 50/125 Fibre

**OM3** = Enhanced multimode 50/125 Fibre / **OS1** = Singlemode 9/125 Fibre

## Fibre types

Zycko stocks and supplies all types of fibre used in networking and storage applications. Do your customers need more than fibre optic patch leads?

Find: [Optical Transceivers - page 01](#)  
[Patch Panels - page 61](#)

CONNECTORS	1m	2m	3m	5m	10m	15m	20m
FC-FC	✓	✓	✓	✓	✓	✓	✓
SC-SC	✓	✓	✓	✓	✓	✓	✓
ST-ST	✓	✓	✓	✓	✓	✓	✓
LC-LC	✓	✓	✓	✓	✓	✓	✓
FC-ST	✓	✓	✓	✓	✓	✓	✓
FC-SC	✓	✓	✓	✓	✓	✓	✓
SC-ST	✓	✓	✓	✓	✓	✓	✓
LC-FC	✓	✓	✓	✓	✓	✓	✓
LC-SC	✓	✓	✓	✓	✓	✓	✓
LC-ST	✓	✓	✓	✓	✓	✓	✓
MTRJ-MTRJ	✓	✓	✓	✓	✓	✓	✓

**Also available in bespoke lengths**  
 for all the above connection types.

**BESPOKE LENGTHS**  
 available on all connection types



## 62.5/125 Multimode

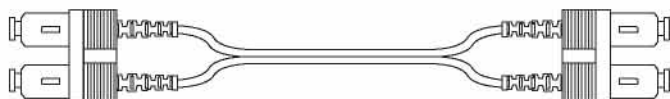
62.5/125 OM1 ST-ST 1mtr  
 62.5/125 OM1 ST-ST 2mtr  
 62.5/125 OM1 ST-ST 3mtr  
 62.5/125 OM1 ST-ST 5mtr  
 62.5/125 OM1 ST-ST 10mtr  
 62.5/125 OM1 ST-ST 15mtr  
 62.5/125 OM1 ST-ST 20mtr

**CAB-OM1-ST-ST-1M**  
**CAB-OM1-ST-ST-2M**  
**CAB-OM1-ST-ST-3M**  
**CAB-OM1-ST-ST-5M**  
**CAB-OM1-ST-ST-10M**  
**CAB-OM1-ST-ST-15M**  
**CAB-OM1-ST-ST-20M**



62.5/125 OM1 SC-SC 1mtr  
 62.5/125 OM1 SC-SC 2mtr  
 62.5/125 OM1 SC-SC 3mtr  
 62.5/125 OM1 SC-SC 5mtr  
 62.5/125 OM1 SC-SC 10mtr  
 62.5/125 OM1 SC-SC 15mtr  
 62.5/125 OM1 SC-SC 20mtr

**CAB-OM1-SC-SC-1M**  
**CAB-OM1-SC-SC-2M**  
**CAB-OM1-SC-SC-3M**  
**CAB-OM1-SC-SC-5M**  
**CAB-OM1-SC-SC-10M**  
**CAB-OM1-SC-SC-15M**  
**CAB-OM1-SC-SC-20M**



62.5/125 OM1 SC-ST 1mtr  
 62.5/125 OM1 SC-ST 2mtr  
 62.5/125 OM1 SC-ST 3mtr  
 62.5/125 OM1 SC-ST 5mtr  
 62.5/125 OM1 SC-ST 10mtr  
 62.5/125 OM1 SC-ST 15mtr  
 62.5/125 OM1 SC-ST 20mtr

**CAB-OM1-SC-ST-1M**  
**CAB-OM1-SC-ST-2M**  
**CAB-OM1-SC-ST-3M**  
**CAB-OM1-SC-ST-5M**  
**CAB-OM1-SC-ST-10M**  
**CAB-OM1-SC-ST-15M**  
**CAB-OM1-SC-ST-20M**



62.5/125 OM1 LC-LC 1mtr  
 62.5/125 OM1 LC-LC 2mtr  
 62.5/125 OM1 LC-LC 3mtr  
 62.5/125 OM1 LC-LC 5mtr  
 62.5/125 OM1 LC-LC 10mtr  
 62.5/125 OM1 LC-LC 15mtr  
 62.5/125 OM1 LC-LC 20mtr

**CAB-OM1-LC-LC-1M**  
**CAB-OM1-LC-LC-2M**  
**CAB-OM1-LC-LC-3M**  
**CAB-OM1-LC-LC-5M**  
**CAB-OM1-LC-LC-10M**  
**CAB-OM1-LC-LC-15M**  
**CAB-OM1-LC-LC-20M**



## Duplex multimode fibre - Continued

62.5/125 OM1 ST-LC 1mtr  
 62.5/125 OM1 ST-LC 2mtr  
 62.5/125 OM1 ST-LC 3mtr  
 62.5/125 OM1 ST-LC 5mtr  
 62.5/125 OM1 ST-LC 10mtr  
 62.5/125 OM1 ST-LC 15mtr  
 62.5/125 OM1 ST-LC 20mtr

**CAB-OM1-ST-LC-1M**  
**CAB-OM1-ST-LC-2M**  
**CAB-OM1-ST-LC-3M**  
**CAB-OM1-ST-LC-5M**  
**CAB-OM1-ST-LC-10M**  
**CAB-OM1-ST-LC-15M**  
**CAB-OM1-ST-LC-20M**



62.5/125 OM1 SC-LC 1mtr  
 62.5/125 OM1 SC-LC 2mtr  
 62.5/125 OM1 SC-LC 3mtr  
 62.5/125 OM1 SC-LC 5mtr  
 62.5/125 OM1 SC-LC 10mtr  
 62.5/125 OM1 SC-LC 15mtr  
 62.5/125 OM1 SC-LC 20mtr

**CAB-OM1-SC-LC-1M**  
**CAB-OM1-SC-LC-2M**  
**CAB-OM1-SC-LC-3M**  
**CAB-OM1-SC-LC-5M**  
**CAB-OM1-SC-LC-10M**  
**CAB-OM1-SC-LC-15M**  
**CAB-OM1-SC-LC-20M**



62.5/125 OM1 MTRJ-MTRJ 1mtr  
 62.5/125 OM1 MTRJ-MTRJ 2mtr  
 62.5/125 OM1 MTRJ-MTRJ 3mtr  
 62.5/125 OM1 MTRJ-MTRJ 5mtr  
 62.5/125 OM1 MTRJ-MTRJ 10mtr  
 62.5/125 OM1 MTRJ-MTRJ 15mtr  
 62.5/125 OM1 MTRJ-MTRJ 20mtr

**CAB-OM1-MTRJ-MTRJ-1M**  
**CAB-OM1-MTRJ-MTRJ-2M**  
**CAB-OM1-MTRJ-MTRJ-3M**  
**CAB-OM1-MTRJ-MTRJ-5M**  
**CAB-OM1-MTRJ-MTRJ-10M**  
**CAB-OM1-MTRJ-MTRJ-15M**  
**CAB-OM1-MTRJ-MTRJ-20M**



62.5/125 OM1 ST-MTRJ 1mtr  
 62.5/125 OM1 ST-MTRJ 2mtr  
 62.5/125 OM1 ST-MTRJ 3mtr  
 62.5/125 OM1 ST-MTRJ 5mtr  
 62.5/125 OM1 ST-MTRJ 10mtr  
 62.5/125 OM1 ST-MTRJ 15mtr  
 62.5/125 OM1 ST-MTRJ 20mtr

**CAB-OM1-ST-MTRJ-1M**  
**CAB-OM1-ST-MTRJ-2M**  
**CAB-OM1-ST-MTRJ-3M**  
**CAB-OM1-ST-MTRJ-5M**  
**CAB-OM1-ST-MTRJ-10M**  
**CAB-OM1-ST-MTRJ-15M**  
**CAB-OM1-ST-MTRJ-20M**





## Duplex multimode fibre - Continued

62.5/125 OM1 SC-MTRJ 1mtr  
62.5/125 OM1 SC-MTRJ 2mtr  
62.5/125 OM1 SC-MTRJ 3mtr  
62.5/125 OM1 SC-MTRJ 5mtr  
62.5/125 OM1 SC-MTRJ 10mtr  
62.5/125 OM1 SC-MTRJ 15mtr  
62.5/125 OM1 SC-MTRJ 20mtr

*CAB-OM1-SC-MTRJ-1M*  
*CAB-OM1-SC-MTRJ-2M*  
*CAB-OM1-SC-MTRJ-3M*  
*CAB-OM1-SC-MTRJ-5M*  
*CAB-OM1-SC-MTRJ-10M*  
*CAB-OM1-SC-MTRJ-15M*  
*CAB-OM1-SC-MTRJ-20M*



### **50/125 Multimode**

50/125 OM2 ST-ST 1mtr  
50/125 OM2 ST-ST 2mtr  
50/125 OM2 ST-ST 3mtr  
50/125 OM2 ST-ST 5mtr  
50/125 OM2 ST-ST 10mtr  
50/125 OM2 ST-ST 15mtr  
50/125 OM2 ST-ST 20mtr

*CAB-OM2-ST-ST-1M*  
*CAB-OM2-ST-ST-2M*  
*CAB-OM2-ST-ST-3M*  
*CAB-OM2-ST-ST-5M*  
*CAB-OM2-ST-ST-10M*  
*CAB-OM2-ST-ST-15M*  
*CAB-OM2-ST-ST-20M*



50/125 OM2 SC-SC 1mtr  
50/125 OM2 SC-SC 2mtr  
50/125 OM2 SC-SC 3mtr  
50/125 OM2 SC-SC 5mtr  
50/125 OM2 SC-SC 10mtr  
50/125 OM2 SC-SC 15mtr  
50/125 OM2 SC-SC 20mtr

*CAB-OM2-SC-SC-1M*  
*CAB-OM2-SC-SC-2M*  
*CAB-OM2-SC-SC-3M*  
*CAB-OM2-SC-SC-5M*  
*CAB-OM2-SC-SC-10M*  
*CAB-OM2-SC-SC-15M*  
*CAB-OM2-SC-SC-20M*



50/125 OM2 SC-ST 1mtr  
50/125 OM2 SC-ST 2mtr  
50/125 OM2 SC-ST 3mtr  
50/125 OM2 SC-ST 5mtr  
50/125 OM2 SC-ST 10mtr  
50/125 OM2 SC-ST 15mtr  
50/125 OM2 SC-ST 20mtr

*CAB-OM2-SC-ST-1M*  
*CAB-OM2-SC-ST-2M*  
*CAB-OM2-SC-ST-3M*  
*CAB-OM2-SC-ST-5M*  
*CAB-OM2-SC-ST-10M*  
*CAB-OM2-SC-ST-15M*  
*CAB-OM2-SC-ST-20M*



## Duplex multimode fibre - Continued

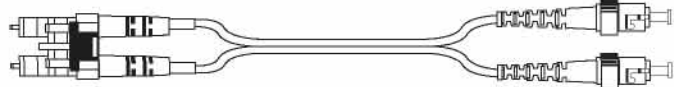
50/125 OM2 LC-LC 1mtr  
50/125 OM2 LC-LC 2mtr  
50/125 OM2 LC-LC 3mtr  
50/125 OM2 LC-LC 5mtr  
50/125 OM2 LC-LC 10mtr  
50/125 OM2 LC-LC 15mtr  
50/125 OM2 LC-LC 20mtr

**CAB-OM2-LC-LC-1M**  
**CAB-OM2-LC-LC-2M**  
**CAB-OM2-LC-LC-3M**  
**CAB-OM2-LC-LC-5M**  
**CAB-OM2-LC-LC-10M**  
**CAB-OM2-LC-LC-15M**  
**CAB-OM2-LC-LC-20M**



50/125 OM2 ST-LC 1mtr  
50/125 OM2 ST-LC 2mtr  
50/125 OM2 ST-LC 3mtr  
50/125 OM2 ST-LC 5mtr  
50/125 OM2 ST-LC 10mtr  
50/125 OM2 ST-LC 15mtr  
50/125 OM2 ST-LC 20mtr

**CAB-OM2-ST-LC-1M**  
**CAB-OM2-ST-LC-2M**  
**CAB-OM2-ST-LC-3M**  
**CAB-OM2-ST-LC-5M**  
**CAB-OM2-ST-LC-10M**  
**CAB-OM2-ST-LC-15M**  
**CAB-OM2-ST-LC-20M**



50/125 OM2 SC-LC 1mtr  
50/125 OM2 SC-LC 2mtr  
50/125 OM2 SC-LC 3mtr  
50/125 OM2 SC-LC 5mtr  
50/125 OM2 SC-LC 10mtr  
50/125 OM2 SC-LC 15mtr  
50/125 OM2 SC-LC 20mtr

**CAB-OM2-SC-LC-1M**  
**CAB-OM2-SC-LC-2M**  
**CAB-OM2-SC-LC-3M**  
**CAB-OM2-SC-LC-5M**  
**CAB-OM2-SC-LC-10M**  
**CAB-OM2-SC-LC-15M**  
**CAB-OM2-SC-LC-20M**



50/125 OM2 MTRJ-MTRJ 1mtr  
50/125 OM2 MTRJ-MTRJ 2mtr  
50/125 OM2 MTRJ-MTRJ 3mtr  
50/125 OM2 MTRJ-MTRJ 5mtr  
50/125 OM2 MTRJ-MTRJ 10mtr  
50/125 OM2 MTRJ-MTRJ 15mtr  
50/125 OM2 MTRJ-MTRJ 20mtr

**CAB-OM2-MTRJ-MTRJ-1M**  
**CAB-OM2-MTRJ-MTRJ-2M**  
**CAB-OM2-MTRJ-MTRJ-3M**  
**CAB-OM2-MTRJ-MTRJ-5M**  
**CAB-OM2-MTRJ-MTRJ-10M**  
**CAB-OM2-MTRJ-MTRJ-15M**  
**CAB-OM2-MTRJ-MTRJ-20M**



## Duplex multimode fibre - Continued

50/125 OM2 ST-MTRJ 1mtr  
50/125 OM2 ST-MTRJ 2mtr  
50/125 OM2 ST-MTRJ 3mtr  
50/125 OM2 ST-MTRJ 5mtr  
50/125 OM2 ST-MTRJ 10mtr  
50/125 OM2 ST-MTRJ 15mtr  
50/125 OM2 ST-MTRJ 20mtr

*CAB-OM2-ST-MTRJ-1M*  
*CAB-OM2-ST-MTRJ-2M*  
*CAB-OM2-ST-MTRJ-3M*  
*CAB-OM2-ST-MTRJ-5M*  
*CAB-OM2-ST-MTRJ-10M*  
*CAB-OM2-ST-MTRJ-15M*  
*CAB-OM2-ST-MTRJ-20M*



50/125 OM2 SC-MTRJ 1mtr  
50/125 OM2 SC-MTRJ 2mtr  
50/125 OM2 SC-MTRJ 3mtr  
50/125 OM2 SC-MTRJ 5mtr  
50/125 OM2 SC-MTRJ 10mtr  
50/125 OM2 SC-MTRJ 15mtr  
50/125 OM2 SC-MTRJ 20mtr

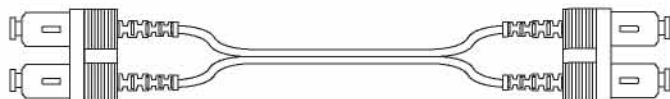
*CAB-OM2-SC-MTRJ-1M*  
*CAB-OM2-SC-MTRJ-2M*  
*CAB-OM2-SC-MTRJ-3M*  
*CAB-OM2-SC-MTRJ-5M*  
*CAB-OM2-SC-MTRJ-10M*  
*CAB-OM2-SC-MTRJ-15M*  
*CAB-OM2-SC-MTRJ-20M*



### 50/125 OM3 Multimode

50/125 OM3 SC-SC 1mtr  
50/125 OM3 SC-SC 2mtr  
50/125 OM3 SC-SC 3mtr  
50/125 OM3 SC-SC 5mtr  
50/125 OM3 SC-SC 10mtr  
50/125 OM3 SC-SC 15mtr  
50/125 OM3 SC-SC 20mtr

*CAB-OM3-SC-SC-1M*  
*CAB-OM3-SC-SC-2M*  
*CAB-OM3-SC-SC-3M*  
*CAB-OM3-SC-SC-5M*  
*CAB-OM3-SC-SC-10M*  
*CAB-OM3-SC-SC-15M*  
*CAB-OM3-SC-SC-20M*



50/125 OM3 SC-LC 1mtr  
50/125 OM3 SC-LC 2mtr  
50/125 OM3 SC-LC 3mtr  
50/125 OM3 SC-LC 5mtr  
50/125 OM3 SC-LC 10mtr  
50/125 OM3 SC-LC 15mtr  
50/125 OM3 SC-LC 20mtr

*CAB-OM3-SC-LC-1M*  
*CAB-OM3-SC-LC-2M*  
*CAB-OM3-SC-LC-3M*  
*CAB-OM3-SC-LC-5M*  
*CAB-OM3-SC-LC-10M*  
*CAB-OM3-SC-LC-15M*  
*CAB-OM3-SC-LC-20M*



## Duplex multimode fibre - Continued

50/125 OM3 LC-LC 1mtr  
50/125 OM3 LC-LC 2mtr  
50/125 OM3 LC-LC 3mtr  
50/125 OM3 LC-LC 5mtr  
50/125 OM3 LC-LC 10mtr  
50/125 OM3 LC-LC 15mtr  
50/125 OM3 LC-LC 20mtr

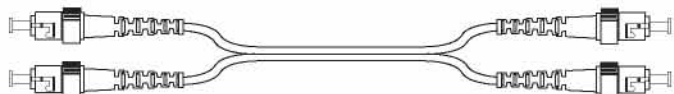
**CAB-OM3-LC-LC-1M**  
**CAB-OM3-LC-LC-2M**  
**CAB-OM3-LC-LC-3M**  
**CAB-OM3-LC-LC-5M**  
**CAB-OM3-LC-LC-10M**  
**CAB-OM3-LC-LC-15M**  
**CAB-OM3-LC-LC-20M**



## Duplex singlemode fibre

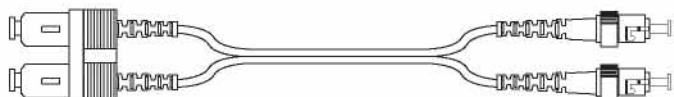
9/125 OS1 ST-ST 1mtr  
9/125 OS1 ST-ST 2mtr  
9/125 OS1 ST-ST 3mtr  
9/125 OS1 ST-ST 5mtr  
9/125 OS1 ST-ST 10mtr  
9/125 OS1 ST-ST 15mtr  
9/125 OS1 ST-ST 20mtr

**CAB-OS1-ST-ST-1M**  
**CAB-OS1-ST-ST-2M**  
**CAB-OS1-ST-ST-3M**  
**CAB-OS1-ST-ST-5M**  
**CAB-OS1-ST-ST-10M**  
**CAB-OS1-ST-ST-15M**  
**CAB-OS1-ST-ST-20M**



9/125 OS1 SC-ST 1mtr  
9/125 OS1 SC-ST 2mtr  
9/125 OS1 SC-ST 3mtr  
9/125 OS1 SC-ST 5mtr  
9/125 OS1 SC-ST 10mtr  
9/125 OS1 SC-ST 15mtr  
9/125 OS1 SC-ST 20mtr

**CAB-OS1-SC-ST-1M**  
**CAB-OS1-SC-ST-2M**  
**CAB-OS1-SC-ST-3M**  
**CAB-OS1-SC-ST-5M**  
**CAB-OS1-SC-ST-10M**  
**CAB-OS1-SC-ST-15M**  
**CAB-OS1-SC-ST-20M**



9/125 OS1 ST-LC 1mtr  
9/125 OS1 ST-LC 2mtr  
9/125 OS1 ST-LC 3mtr  
9/125 OS1 ST-LC 5mtr  
9/125 OS1 ST-LC 10mtr  
9/125 OS1 ST-LC 15mtr  
9/125 OS1 ST-LC 20mtr

**CAB-OS1-ST-LC-1M**  
**CAB-OS1-ST-LC-2M**  
**CAB-OS1-ST-LC-3M**  
**CAB-OS1-ST-LC-5M**  
**CAB-OS1-ST-LC-10M**  
**CAB-OS1-ST-LC-15M**  
**CAB-OS1-ST-LC-20M**



## Duplex singlemode fibre - Continued

9/125 OS1 FC/PC-FC/PC  
 9/125 OS1 FC/PC-FC/PC  
 9/125 OS1 FC/PC-FC/PC  
 9/125 OS1 FC/PC-FC/PC  
 9/125 OS1 FC/PC-FC/PC  
 9/125 OS1 FC/PC-FC/PC  
 9/125 OS1 FC/PC-FC/PC

**CAB-OS1-FC-FC-1M**  
**CAB-OS1-FC-FC-2M**  
**CAB-OS1-FC-FC-3M**  
**CAB-OS1-FC-FC-5M**  
**CAB-OS1-FC-FC-10M**  
**CAB-OS1-FC-FC-15M**  
**CAB-OS1-FC-FC-20M**



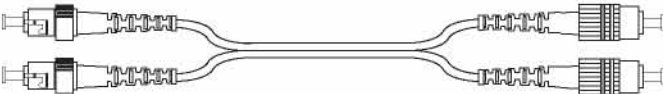
9/125 OS1 SC-FC 1mtr  
 9/125 OS1 SC-FC 2mtr  
 9/125 OS1 SC-FC 3mtr  
 9/125 OS1 SC-FC 5mtr  
 9/125 OS1 SC-FC 10mtr  
 9/125 OS1 SC-FC 15mtr  
 9/125 OS1 SC-FC 20mtr

**CAB-OS1-SC-FC-1M**  
**CAB-OS1-SC-FC-2M**  
**CAB-OS1-SC-FC-3M**  
**CAB-OS1-SC-FC-5M**  
**CAB-OS1-SC-FC-10M**  
**CAB-OS1-SC-FC-15M**  
**CAB-OS1-SC-FC-20M**



9/125 OS1 FC-ST 1mtr  
 9/125 OS1 FC-ST 2mtr  
 9/125 OS1 FC-ST 3mtr  
 9/125 OS1 FC-ST 5mtr  
 9/125 OS1 FC-ST 10mtr  
 9/125 OS1 FC-ST 15mtr  
 9/125 OS1 FC-ST 20mtr

**CAB-OS1-FC-ST-1M**  
**CAB-OS1-FC-ST-2M**  
**CAB-OS1-FC-ST-3M**  
**CAB-OS1-FC-ST-5M**  
**CAB-OS1-FC-ST-10M**  
**CAB-OS1-FC-ST-15M**  
**CAB-OS1-FC-ST-20M**



9/125 OS1 LC-LC 1mtr  
 9/125 OS1 LC-LC 2mtr  
 9/125 OS1 LC-LC 3mtr  
 9/125 OS1 LC-LC 5mtr  
 9/125 OS1 LC-LC 10mtr  
 9/125 OS1 LC-LC 15mtr  
 9/125 OS1 LC-LC 20mtr

**CAB-OS1-LC-LC-1M**  
**CAB-OS1-LC-LC-2M**  
**CAB-OS1-LC-LC-3M**  
**CAB-OS1-LC-LC-5M**  
**CAB-OS1-LC-LC-10M**  
**CAB-OS1-LC-LC-15M**  
**CAB-OS1-LC-LC-20M**



## Duplex singlemode fibre - Continued

9/125 OS1 SC-LC 1mtr  
9/125 OS1 SC-LC 2mtr  
9/125 OS1 SC-LC 3mtr  
9/125 OS1 SC-LC 5mtr  
9/125 OS1 SC-LC 10mtr  
9/125 OS1 SC-LC 15mtr  
9/125 OS1 SC-LC 20mtr

*CAB-OS1-SC-LC-1M*  
*CAB-OS1-SC-LC-2M*  
*CAB-OS1-SC-LC-3M*  
*CAB-OS1-SC-LC-5M*  
*CAB-OS1-SC-LC-10M*  
*CAB-OS1-SC-LC-15M*  
*CAB-OS1-SC-LC-20M*



9/125 OS1 SC-SC 1mtr  
9/125 OS1 SC-SC 2mtr  
9/125 OS1 SC-SC 3mtr  
9/125 OS1 SC-SC 5mtr  
9/125 OS1 SC-SC 10mtr  
9/125 OS1 SC-SC 15mtr  
9/125 OS1 SC-SC 20mtr

*CAB-OS1-SC-SC-1M*  
*CAB-OS1-SC-SC-2M*  
*CAB-OS1-SC-SC-3M*  
*CAB-OS1-SC-SC-5M*  
*CAB-OS1-SC-SC-10M*  
*CAB-OS1-SC-SC-15M*  
*CAB-OS1-SC-SC-20M*

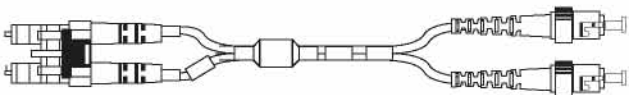


As well as the above Zycko also supplies leads terminated with:  
MPO, SC/APC, FC/APC, MU & E2000 connectors

## Mode conditioning patch cords

Mode conditioning patch cord ST-SC  
Mode conditioning patch cord ST-LC  
Mode conditioning patch cord SC-LC  
Mode conditioning patch cord SC-SC

*CAB-GELX-625-SC-ST*  
*CAB-GELX-625-ST-LC*  
*CAB-GELX-625-SC-LC*  
*CAB-GELX-625-SC-SC*



# Patch panels

To compliment our range of patch leads Zycko also stocks a **wide range of fibre optic patch panels**. All of our panels are the tray type with cable management included. We supply patch panels in both **Multimode & Singlemode** with the following connections & part densities.

## Selection guide

Multimode 8 Port SC  
Multimode 12 Port SC  
Multimode 16 Port SC  
Multimode 24 Port SC

**PATCH-PANEL-8-FIBRE-SC**  
**PATCH-PANEL-12-FIBRE-SC**  
**PATCH-PANEL-16-FIBRE-SC**  
**PATCH-PANEL-24-FIBRE-SC**



Multimode 8 Port ST  
Multimode 12 Port ST  
Multimode 16 Port ST  
Multimode 24 Port ST

**PATCH-PANEL-8-FIBRE-ST**  
**PATCH-PANEL-12-FIBRE-ST**  
**PATCH-PANEL-16-FIBRE-ST**  
**PATCH-PANEL-24-FIBRE-ST**



Multimode 8 Port LC  
Multimode 12 Port LC  
Multimode 16 Port LC  
Multimode 24 Port LC

**PATCH-PANEL-8-FIBRE-LC**  
**PATCH-PANEL-12-FIBRE-LC**  
**PATCH-PANEL-16-FIBRE-LC**  
**PATCH-PANEL-24-FIBRE-LC**



Multimode 8 Port MTRJ  
Multimode 12 Port MTRJ  
Multimode 16 Port MTRJ  
Multimode 24 Port MTRJ

**PATCH-PANEL-8-FIBRE-MTRJ**  
**PATCH-PANEL-12-FIBRE-MTRJ**  
**PATCH-PANEL-16-FIBRE-MTRJ**  
**PATCH-PANEL-24-FIBRE-MTRJ**



Singlemode 8 Port SC  
Singlemode 12 Port SC  
Singlemode 16 Port SC  
Singlemode 24 Port SC

**PATCH-PANEL-OS1-8-FIBRE-SC**  
**PATCH-PANEL-OS1-12-FIBRE-SC**  
**PATCH-PANEL-OS1-16-FIBRE-SC**  
**PATCH-PANEL-OS1-24-FIBRE-SC**



Singlemode 8 Port ST  
Singlemode 12 Port ST  
Singlemode 16 Port ST  
Singlemode 24 Port ST

**PATCH-PANEL-OS1-8-FIBRE-ST**  
**PATCH-PANEL-OS1-12-FIBRE-ST**  
**PATCH-PANEL-OS1-16-FIBRE-ST**  
**PATCH-PANEL-OS1-24-FIBRE-ST**



Singlemode 8 Port LC  
Singlemode 12 Port LC  
Singlemode 16 Port LC  
Singlemode 24 Port LC

**PATCH-PANEL-OS1-8-FIBRE-LC**  
**PATCH-PANEL-OS1-12-FIBRE-LC**  
**PATCH-PANEL-OS1-16-FIBRE-LC**  
**PATCH-PANEL-OS1-24-FIBRE-LC**



# Fibre optic couplers

## Multimode fibre coupler

Multimode fibre coupler ST-ST  
Multimode fibre coupler SC-ST  
Multimode fibre coupler SC-SC  
Multimode fibre coupler LC-LC

***ADPT-ST-ST***  
***ADPT-SC-ST***  
***ADPT-SC-SC***  
***ADPT-LC-LC***



## Singlemode fibre coupler

Singlemode fibre coupler ST-ST  
Singlemode fibre coupler SC-ST  
Singlemode fibre coupler SC-SC  
Singlemode fibre coupler LC-LC

***ADPT-OS1-ST-ST***  
***ADPT-OS1-SC-ST***  
***ADPT-OS1-SC-SC***  
***ADPT-OS1-LC-LC***



## Fibre optic attenuators

Fibre optic attenuator FC male to female 5Db  
Fibre optic attenuator FC male to female 10Db  
Fibre optic attenuator SC male to female 5Db  
Fibre optic attenuator SC male to female 10Db  
Fibre optic attenuator LC male to female 5Db  
Fibre optic attenuator LC male to female 10Db

***CAB-ATTN-FC-FC-M/F-5DB***  
***CAB-ATTN-FC-FC-M/F-10DB***  
***CAB-ATTN-SC-SC-M/F-5DB***  
***CAB-ATTN-SC-SC-M/F-10DB***  
***CAB-ATTN-LC-LC-M/F-5DB***  
***CAB-ATTN-LC-LC-M/F-10DB***





# ProLabs Media Converters

The ProLabs media converters are designed to provide a simple and low cost effect means of conversion between copper and fibre optic media on ethernet/fast ethernet networks. Enclosed in a compact, metal case, the converters support half or full duplex operation with auto-detection and fully compliant with IEEE802.3u specifications.

## Connectivity Types

TX/RJ45 to SX/ST Multimode 100Base 2km  
TX/RJ45 to SX/SC Multimode 100Base 2km  
TX/RJ45 to LX/SC Singlemode 100Base 15km  
TX/RJ45 to LX/SC Singlemode 100Base 30km  
TX/RJ45 to SX/SC Singlemode 100Base 40km  
TX/RJ45 to SX/SC Multimode 1000Base 2km  
TX/RJ45 to LX/SC Singlemode 1000Base 15km  
TX/RJ45 to SX/SC Multimode 1000Base 15km  
TX/RJ45 to LX/SC Singlemode 1000Base 50km

**MC-TX-SX/ST-MM-100B-2K**  
**MC-TX-SX/SC-MM-100B-2K**  
**MC-TX-SX/SC-SM-100B-15K**  
**MC-TX-SX/SC-SM-100B-30K**  
**MC-TX-SX/SC-SM-100B-40K**  
**MC-TX-SX/SC-MM-1000B-2K**  
**MC-TX-SX/SC-SM-1000B-15K**  
**MC-TX-SX/SC-MM-1000B-15K**  
**MC-TX-SX-SC-SM-100B-50K**



*Available with UK, US & European power supplies*

## Specifications

Applicable Standards	IEEE802.3 10BASE-T Ethernet IEEE802.3u 100BASE-TX/FX Fast Ethernet
Power	External AC/DC Power Adaptor 12VDC@0.8A
Storage Temperature	-40 °C to 85 °C
Operating Temperature	-0 °C to 70 °C
Humidity	10%-90%; non condensing
Weight	130grams
Safety	FCC Part 15 Class A & CE Approval

## RoHS Statement:

The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment". This Directive will ban the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants from 1 July 2006.

## WEEE Statement:

The WEEE (Waste Electrical and Electronic Equipment) Directive aims to conserve landfill and support more sustainable development by providing an impetus to boost recycling.