

SFP Transceivers



- FibroLAN broad portfolio of optical transceivers include SFP, SFP+ and XFP series
- Optical Transceivers are Multi-Source Agreement (MSA) compliant
- These devices provide high performance Simplex and Duplex data links for bi-directional communications over MM and SM mode fibers
- These FibroLAN devices are protocol independent for the specified transmission speed and support the broadband range from FE to 10GE
- This document deals with SFP transceivers and their usage covering FE/OC3, GE, 1xFC, 2xFC, 4FC, SONET/SDH and CWDM/DWDM
- Typical Applications: Broadband Access, Business Enterprise, Mobile Backhaul, (P2P and Ring topologies)

The FibroLAN 100/155Mbps and 1.25/2.5 /4.0 **Small Form Factor Pluggable (SFP)** Optical Transceivers are Multi-Source Agreement (MSA) compliant and provide high performance simplex and duplex data links for bi-directional communication over Multi-mode and Single mode fiber.

DSB235R1114

Small Form Factor Pluggable Transceivers

The **SFP SF1G** series are designed for Gigabit Ethernet data links and are deployed in FibroLAN MCM1000X and MCM1000X-RL *MetroStar* modules, in GSM1000X, U.CON2500 remote access device, and in Falcon NTU&μFalcon series.

The **SF2G** series are designed to operate from 100Mbps to 2.5Gbps and are deployed in FibroLAN MSM2500U *MetroStar* module and in U.CON2500 Converter/Extender device

The **SFP SF4G** series transceivers operate within the range from 100 to 4.25Gbps and are suitable for Fiber Channel applications deploying the MSM4000U module and U.CON4000 device

These FibroLAN devices are protocol independent for the specified transmission speed and efficiently support Fast Ethernet, Fiber Channel, Gigabit Ethernet, OC3, OC12, OC48, STM1, STM4, and STM16.

Small Form-factor pluggable optical interfaces are suitable for ease of deployment, maintenance and logistics, and do not require any settings or measurements.

The main advantages of the hot-swappable SFP optical interfaces are the density, flexibility, and cost savings. **SFP** modules can be easily interchanged, thus fiber optic networks can be upgraded more conveniently than with traditional modules. The SFP transceivers provide status information (SFP modules status and digital diagnostic status). The key features are common to all SFP series.

Key Features

- Compliant with SFP/MSA Specification
- Compliant with SFF-8472
- Data Rate: 100Mbps to 4.0Gbps
- Hot Pluggable transceivers
- Compliant to full IEC825 and CDRH class1 eye safety
- Single fiber working support
- SFP status and diagnostic information
- Digital diagnostic monitoring
- Metal enclosure for lower EMI
- Network Extension: up to 80Km (120Km for GBE)
- Pull de-latch mechanism for easy deployment
- Supported topologies: P2P, and Ring topologies with fixed and reconfigurable OADM

CWDM SFP Specifications

- **CWDM DFB Laser**
- High sensitivity **PIN detector**
- **The ITU G.694.2 provides a grid for CWDM with 18 Wavelength** within the range 1260 ~ 1610 nm spaced 20nm
- **Passband** @0.5dB: ITU+/-6.5nm
- **Single 3.3V Power Supply**
- **LVTTTL Control** Logic Interface
- **Hot-Pluggable** SFP Duplex LC Connector Interface
- **Class 1 FDA** and IEC60825-1 Laser Safety Compliant
- **Compliant with Digital Diagnostic** Monitor Interface SFF-8472 MSA
- **Operating Case Temperature** Standard: 0°C~+70°C
- **Component Recognition**
UL and CUL
EN60950-1:2006
- **Electromagnetic Interference (EMI):**
FCC Part 15 Class B
EN55022:2006. CISPR 22B :2006
VCCI Class B
- **Immunity**
EN 55024:1998+A1+A2
IEC 61000-4-3
- **Laser Eye Safety**
CDRH compliant and Class I laser product
FDA 21CFR 1040.10 and 1040.11
EN (IEC) 60825-1:2007
EN (IEC) 60825-2:2004+A1
- **Storage Temperature:** -40°C~+85°C
- **Operating Relative Humidity:** Max 95%
- **RoHS6**
2002/95/EC 4.1&4.2
2005/747/EC 5&7&13

DWDM SFP Specifications

- **DWDM DFB Laser**
- **ITU-T G.694.1 Compliance**
- **Channel Spacing** 0.8nm (100GHz)
- **Passband@0.5dB** = ITU +/- 0.1nm
- **Operating Data Rate** up to 4.25Gbps
- Available in all 100 GHz **C-Band WL** on the 100GHz DWDM ITU Grid
- **DWDM Rated laser and APD High Sensitivity Receiver** (4.25Gbps SFP)
- **Single 3.3V Power Supply**
- **TTL/LVTTL Control** Logic Interface
- **Laser Eye Safety**
CDRH compliant and **Class I laser** product
FDA 21CFR 1040.10 and 1040.11
EN (IEC) 60825-1:2007
EN (IEC) 60825-2:2004+A1
- **RoHS6**
2002/95/EC 4.1&4.2
2005/747/EC 5&7&13
- **Hot-Pluggable** SFP Duplex LC Connector Interface
- **Class 1 FDA** and IEC60825-1 Laser Safety Compliant
- **Operating Case Temperature** Standard:
0°C~+70°C (SFP up to 2.67Gbps)
-5°C~+70°C (SFP up to 4.25Gbps)
- **Electromagnetic Interference (EMI):**
FCC Part 15 Class B
EN55022:2006. CISPR 22B :2006
VCCI Class B
- **Immunity**
EN 55024:1998+A1+A2
IEC 61000-4-3
- **Component Recognition**
UL and CUL
EN60950-1:2006
- **Storage Temperature:** -40°C~+85°C

General Specifications

- **Standard Compliance**
Fast Ethernet (100Base-FX), Gigabit Ethernet, Fiber Channel , OC3, OC12, OC48, STM-1, STM-4, STM-16
- **Conversion Method:**
Universal protocol transparent device
CWDM
DWDM
Other protocols (FC, SONET/SDH, etc)
- **F/O Ports**
Simplex and Duplex LC connectors
Each F/O port may be disconnected via management
- **Operating /Storage Temperature**
 $0^{\circ} \div + 70^{\circ}\text{C}$ / $-40^{\circ} \div + 85^{\circ}\text{C}$
- **Product Support**
MetroStar modules:
MCM1000X, MCM1000X-RL
MSM2500U MSM4000U
CPE Stand-alone devices:
GSM1000x, U.CON2500 U.CON4000, Falcon NTUs and μ Falcon series
- **Diagnostic LED**
TX-LOW LED for Port 1 and Port 2;
Off= Transmission is OK
Lit red = Transmission signal low (does not reach the required distance)
Blinking = Invalid Authentication: implies that is not a FibroLAN SFP used (no TX)

Applications

- Fast Ethernet, ATM, Giga Ethernet
- Tri-Rate 1.063/2.125/4.25Gbps
Fiber Channel
- CWDM/DWDM Networks
- Broadband Access
- Business enterprise
- Mobile Backhaul
- SONET/SDH infrastructure
- Network Extension: up to 120Km
- Supported topologies:
P2P and Ring with fixed and reconfigurable OADM's

Ordering Information (SFP List for FE/OC3, GE, 1xFC, 2xFC, 4xFC)

Part #	Model	Description
Fast Ethernet/OC3/ATM		
B289	SF155-SMRF15	SFP (Small Form Pluggable) OC3 Single Fiber Strand F/O transceiver, LC connector, SM 1550nmTx/1310nmRx, 15 km
B290	SF155-SMRF13	SFP (Small Form Pluggable) OC3 Single Fiber Strand F/O transceiver, LC connector, SM 1310nmTx/1550nmRx, 15 km
B312	SF100-SMRF15	SFP (Small Form Pluggable) 100Base-FX Single Fiber Strand F/O transceiver, SC connector, SM 1550nmTx/1310nmRx, 15km
B358	SF100-850	SFP (Small Form Pluggable) 100BaseFX, F/O transceiver, dual LC connector, MM 850nm, 1km/2km
B359	SF100-GMS1-85	SFP (Small Form Pluggable) 100BaseFX /transceiver, (suitable for the Falcon series or any other product with SGMII based SFP ports) , dual LC connector, MM 850nm, 0.5km/2km
B330	SF1G-GM51	SFP 100BaseFX transceiver, (suitable for the Falcon series or any other product with SGMII based SFP ports) , dual LC connector, MM 1310nm, 2km
B307	SF1G-GMLX1	SFP 100BaseFX transceiver, (suitable for the Falcon series or any other product with SGMII based SFP ports) , dual LC connector, SM 1310nm, 10km
Gigabit Ethernet		
B248	SF1G-T	SFP module, GBE F/O transceiver, 1000Base-T, shielded RJ45, 100m over Cat.6 cable
B304	SF1G-TX	SFP GBE STP transceiver, 10/100/1000BaseT, shielded RJ-45, 100m over Cat.6 cable (suitable for the Falcon series or any other product with SGMII based SFP ports)
B235	SF1G-S1	SFP module, GBE F/O transceiver, dual LC connector, MM 850nm, 220/550m
B435	SF1G-S2	SFP (Small Form Pluggable) GBE F/O transceiver, dual LC connector, MM 1310nm, 2km with 50/125µm MMF
B236	SF1G-LX1	SFP module, GBE F/O transceiver, dual LC connector, SM1310nm, 10km
B237	SF1G-LX2	SFP module, GBE F/O transceiver, dual LC connector, SM 1310nm, 20km
B238	SF1G-LX3	SFP module, GBE F/O transceiver, dual LC connector, SM 1550nm/DFB , 40km
B239	SF1G-LX4	SFP module, GBE F/O transceiver, dual LC connector, SM 1550nm/DFB , 80km
B240	SF1G-LX5	SFP module, GBE F/O transceiver, dual LC connector, SM1550nm/DFB/ APD, 120km
B241	SF1G-SF13	SFP module, Single Fiber Strand, GBE F/O transceiver, 1* LC, SM 1310nm Tx/1550nmRx, 20km
B242	SF1G-SF15	SFP module, SFS, GBE, F/O transceiver, 1*LC, SM 1550nmDFB Tx/1310nm Rx, 20km
B308	SF1G-SF13C	SFP (Small Form Pluggable) Single Fiber Strand GBE F/O transceiver, LC connector, SM 1310nmTx - 1490nmRx, 20km, color code - Blue
B309	SF1G-SF14C	SFP (Small Form Pluggable) Single Fiber Strand GBE F/O transceiver, LC connector, SM 1490nm-DFB Tx - 1310nmRx, 20km, color Code - Violet
B243	SF1G-LF13	SFP module, Single Fiber Strand GBE F/O transceiver, 1* LC, SM 1310nmDFB Tx/1550nmRx, 40km
B244	SF1G-LF15	SFP module, SFS, GBE F/O transceiver, 1*LC, SM 1550nmDFB Tx/1310nm Rx, 40km
B269	SF1G-ZF49	SFP, Single Fiber Strand, GBE F/O transceiver, LC connector, SM, 1490nmTxDFB/ 1570nmRx, 80km
B270	SF1G-ZF57	SFP, SFS, GBE F/O transceiver, LC connector, SM 1570nmDFBTx/1490nmRx, 80km
B281-XX	SF1G-LX5-5C-XX	CWDM SFP, 1.25Gbps F/O transceiver, dual LC connector, SM, Wavelength =1xx1nm, DFB/APD, 100km
B311-XX	SF1G-LX6 5C-XX	CWDM SFP 1.25Gbps F/O transceiver, dual LC connector, SM, Wavelength=1xx1nm-DFB/APD, 120 km
B335-XX	SF1G-LX7-5C-XX	CWDM SFP 1.25Gbps F/O transceiver, dual LC connector, SM Wavelength=1xx1nm-DFB/APD, 41db power budget, 120 km
B343-XX	SF1G-LX3-5D-XX	DWDM SFP 1Gbps F/O transceiver, dual LC connector, ITU channel xx, DFB/APD, 40km, 19dB power budge
B299-XX	SF1G-LX4-5D-XX	DWDM SFP 1Gbps F/O transceiver, dual LC connector, ITU channel xx (29/31/33/35/37/51/53/55/57/59), DFB/APD, 80km
B333-XX	SF1G-LX5-5D-XX	DWDM SFP 1Gbps F/O transceiver, dual LC connector, ITU channel xx (29/31/33/35/37/51/53/55/57/59), DFB/APD, 100km, 32dB power budget
B334-XX	SF1G-LX6-5D-XX	DWDM SFP 1Gbps F/O transceiver, dual LC connector, ITU channel xx (29/31/33/35/37/51/53/55/57/59), DFB/APD, 120km, 37dB power budget

SFP=Small Form Pluggable; SFS=Single Fiber Strand

2.5Gbps		
B268	SF2G-S1	SFP module, 2.5Gbps F/O transceiver, dual LC connector, MM 850nm, 300/400m
B249	SF2G-S2	SFP module, 2.5Gbps F/O transceiver, dual LC connector, SM 1310nm, 2 km
B250	SF2G-LX2-3	SFP module, 2.5Gbps F/O transceiver, dual LC connector, SM,1310nm DFB, 15 km
B251	SF2G-LX2-5	SFP module, 2.5Gbps F/O transceiver, dual LC connector, SM, 1550nm DFB, 15 km
B340	SF2GPL-LX2/ET	SFP (Small Form Pluggable), GPON OLT transceiver, Simplex SC connector, 2.5Gbps/1490nm Tx, /1310nm Rx, 20km, Extended temperature (-40 - +85C)
B252	SF2G-LX3-3	SFP module, 2.5Gbps F/O transceiver, dual LC connector, SM,1310nm DFB/APD, 40km
B253	SF2G-LX3-5	SFP module, 2.5Gbps F/O transceiver, dual LC connector, SM 1550nm DFB, 40 km
B254	SF2G-LX4-5	SFP module, 2.5Gbps F/O transceiver, dual LC connector, SM1550nm DFB/APD, 80 km
B301	SF2G-SF13	SFP Single Fiber Strand 2.5G F/O transceiver, LC connector, SM 1310nmTx 1550nmRx, 20km
B302	SF2G-SF15	SFP Single Fiber Strand 2.5G F/O transceiver, LC connector, SM 1550nm-DFB Tx 1310n mRx, 20km
B271-XX	SF2G-LX3-5C-XX	CWDM, SFP 2.5Gbps F/O transceiver, dual LC connector, SM 1471/1611nm DFB, 40Km
B258-XX	SF2G-LX4-5C-XX	CWDM, SFP 2.5Gbps F/O transceiver, dual LC connector, SM 1471/1611nm, DFB/APD, 80 km
B338-XX	SF2G-LX4-5D-XX	DWDM SFP 2.5Gbps F/O transceiver, dual LC connector, ITU channel xx, DFB/APD, 80km
4.0Gbps (1xFC, 2xFC, 4xFC)		
B316	SF4G-S1	SFP 4Gbps F/O transceiver, dual LC connector, MM 850nm, 70/150
B317	SF4G-LX1-3	SFP 4Gbps F/O transceiver, dual LC connector, SM 1310nm, 5km
B318	SF4G-LX2-3	SFP 4Gbps F/O transceiver, dual LC connector, SM 1310nm, 10km
B319	SF4G-LX3-3	SFP 4Gbps F/O transceiver, dual LC connector, SM 1310nm, 30km
B332	SF4G-LX4-3	SFP 4Gbps F/O transceiver, dual LC connector, SM 1310nm, 40km
B320	SF4G-LX4-5	SFP 4Gbps F/O transceiver, dual LC connector, SM 1550nm,DFB 80k
B321	SF4G-SF13	SFP SFS 4 Gbps F/O transceiver, LC connector, SM 1310nmTx - 1550nmRx,DFB, 20km
B322	SF4G-SF15	SFP SFS 4 Gbps F/O transceiver, LC connector, SM 1550nmTx - 1310nmRx,DFB, 20km
B323	SF4G-LF55	SFP SFS 4 Gbps F/O transceiver, LC connector, SM 1550nmTx - 1490nmRx,DFB,40km
B324	SF4G-LF49	SFP SFS 4 Gbps F/O transceiver, LC Connector,SM 1490nmTx, - 1550NM Rx DFB, 40km
B325	SF4G-ZF55	SFP Single Fiber Strand, 4 Gbps F/O transceiver, LC connector, SM 1550nmTx - 1490nmRx,DFB,APD 80km
B326	SF4G-ZF49	SFP (Small Form Pluggable) Single Fiber Strand, 4 Gbps F/O transceiver, LC connector, SM 1490nmTx - 1550nmRx,DFB,APD, 80km
B327-XX	SF4G-LX3-5C-XX	CWDM SFP (Small Form Pluggable) 4Gbps F/O transceiver, dual LC connector, Wavelength=1xx1nm (47/49/51/53/55/57/59/61), DFB, 40 km
B328-XX	SF4G-LX4-5C-XX	CWDM SFP (Small Form Pluggable) 4Gbps F/O transceiver, dual LC connector, Wavelength=1xx1nm (47/49/51/53/55/57/59/61), DFB/APD , 80 km
B329-XX	SF4G-LX4-5D-XX	DWDM SFP 4Gbps F/O transceiver, dual LC connector, ITU channel xx (29/31/33/35/37/51/53/55/57/59), DFB/APD, 80km

Specifications are subject to change w/out any prior notice. SFP=Small Form Pluggable; SFS=Single Fiber Strand

Notes: The SFP transceivers from SF1G-T (B248) through SF1G-LX6-5D-XX (B334-XX) are normally deployed in the following FibroLAN equipment: MetroStar modules MCM1000X, MCM100X-RL, CPE device GSM1000X, Falcon NTU and µFalcon series. For CWDM GbE distance 40 or 80Km applications, you may use the SFP B271-XX and B258-XX WL transceivers. The SFP transceivers from SF1G-GMLX1 (B307), (except copper SFP, B248 and B304), through SF2G-LX4-5C-XX (B258-XX) are deployed in the MetroStar module MSM2500U and U.CON2500 device

All the previous listed SFP transceivers may be used in the MetroStar module MSM4000U and in the U.CON4000 device

All recommended distances for CWDM/DWDM active components assume direct P2P or Ring topologies. If these are passing thru passive MUX/DEMUX/OADM, the additional attenuation introduced by such devices must be considered when assessing the actual distance.

SFP Transceivers Technical Specifications

Model	Minimal Output Power	Maximum Output Power	Minimal Receive Sensitivity	Maximum Input Power	Wavelength nm	Distance Km
SF155-SMRF13	-15dBm	-5dBm	-30dBm	-8dBm	OC3-1310Tx/1550Rx	5 -15
SF155-SMRF15	-15dBm	-5dBm	-30dBm	-8dBm	OC3-1550Tx/1310Rx	5 -15
SF100-SMRF15	-15dBm	-8dBm	-28dBm	-8dBm	100Base-Fx-1550Tx/1310Rx	5 -15
SF100-850	-9.5dBm	-4dBm	-25dBm	0dBm	Fast Ethernet-MM 850nm	1-2
SF100-GMS1-85	-9.5dBm	-4dBm	-24dBm	0dBm	100Base-FX MM 850nm	0.5-2
SF1G-GMLX1	-15dBm	-8dBm	-28dBm	-8dBm	100Base-Fx 1310 SM	5 -10
SF1G-GMS1					100Base-Fx -1310 MM	1-2
SF1G-T					1000Base-T Cat 6 cable	100m
SF1G-TX					10/100.1000BaseT Cat 6	100m
SF1G-S1	-9 dBm	0dBm	-19dBm	-3dBm	850 MM	220/500m
SF1G-S2	-9 dBm	-3dBm	-19dBm	-3dBm	1310 MM	0.5-2
SF1G-LX1	-9dBm	-3dBm	-21dBm	-3dBm	1310 SM	5 -10
SF1G-LX2	-5dBm	0dBm	-22dBm	-3dBm	1310 SM	5 - 20
SF1G-LX3	-5dBm	0dBm	-23dBm	-3dBm	1550/DFB SM	10 - 40
SF1G-LX4	-3dBm	2dBm	-24dBm	-3dBm	1550/DFB SM	25 -80
SF1G-LX5	0dBm	3dBm	-30dBm	-9dBm	1550/DFB/APD SM	80 -120
SF1G-SF13	-9dBm	0dBm	-21dBm	-3dBm	Tx1310/Rx1550 SFS	5 -20
SF1G-SF15	-9dBm	0dBm	-21dBm	-3dBm	Tx1550DFB /Rx1310 SFS	5 -20
SF1G-SF13C	-9dBm	0dBm	-21dBm	-3dBm	Tx1310Rx1490 SFS	5 -20
SF1G-SF14C	-9dBm	0dBm	-21dBm	-3dBm	Tx1490DFB/ Rx 1310 SFS	5 -20
SF1G-LF13	-3dBm	0dBm	-22dBm	-3dBm	Tx1310DFB/Rx1550 SFS	10 -40
SF1G-LF15	-3dBm	0dBm	-22dBm	-3dBm	Tx1550DFB /Rx1310 SFS	10 -40
SF1G-ZF49	0dBm	5dBm	-24dBm	-3dBm	Tx1490DFB/ Rx 1570 SFS	25 -80
SF1G-ZF57	0dBm	5dBm	-24dBm	-3dBm	Tx1570DFB/ Rx1490 SFS	25 -80
SF1G-LX5-5C-xx	0dBm	5dBm	-32dBm	-3dBm	DFB/APD SM, WL=1xx0nm	80 -100
SF1G-LX6-5C-xx	3dBm	5dBm	-34dBm	-8dBm	DFB/APD SM, WL=1xx0nm	80 -120
SF1G-LX7-5C-XX	4dBm	7dBm	-37dBm	-10dBm	CWDM DFB/APD	80 -120
SF1G-LX3-5D-XX	0dBm	5dBm	-24dBm	-3dBm	DWDM DFB/APD	10 -40
SF1G-LX4-5D-XX	0dBm	4dBm	-28dBm	-7dBm	XX=DWDM ITU Channels, DFB/APD	30-80
SF1G-LX5-5D-XX	0dBm	5dBm	-32dBm	-10dBm	XX=DWDM ITU Channels DFB/APD	80-100
SF1G-LX6-5D-XX	2dBm	7dBm	-35dBm	-10dBm	XX=DWDM ITU Channels DFB/APD	80 -120

xx= CWD:1470/1490/1510/1530/1550/1570/1590/1610nm

XX= DWDM ITU GRID CHANNELS(100GHz Spacing) MM=Multi Mode; SM= Single Mode; SFS= Single Fiber Strand

Model	Minimal Output Power	Maximum Output Power	Minimal Receive Sensitivity	Maximum Input Power	Wavelength nm	Distance Km
SF2G-S1	-10dBm	0dBm	-13dBm	-3dBm	850 MM	300/400
SF2G-S2	-10dBm	-3dBm	-18dBm	-3dBm	1310 SM	0 - 2
SF2G-LX2-3	-5dBm	0dBm	-18dBm	-3dBm	1310DFB SM	5 - 15
SF2G-LX2-5	-5dBm	0dBm	-21dBm	0dBm	1550DFB SM	5 - 15
SF2GPL-LX2/ET	+1.5dBm	5dBm	-28dBm	-8dBm	1490Tx/1310Rx	5 -20
SF2G-LX3-3	-2dBm	3dBm	-27dBm	-9dBm	1330/DFB/APD SM	10 -40
SF2G-LX3-5	-2dBm	3dBm	-20dBm	-3dBm	1550DFB SM	10 -40
SF2G-LX4-5	-2dBm	3dBm	-28dBm	-9dBm	1550/DFB/APD SM	25 -80
SF2G-SF13	-9dBm	0dBm	-18dBm	0dBm	Tx 1310 SM Rx1550, SFS	5 -20
SF2G-SF15	-9dBm	0dBm	-18dBm	0dBm	Tx1550DFB SM Rx1310, SFS	5 - 20
SF2G-LX3-5C-xx	-3dBm	2dBm	-20dBm	-3dBm	CWDM 1xx0nm/DFB	10-40
SF2G-LX4-5C-xx	0dBm	5dBm	-29dBm	-8dBm	CWDM 1xx0nm/DFB/APD	25 -80
SF2G-LX4-5D-XX	0dBm	5dBm	-25dBm	-9dBm	DWDM DFB/APD	25 -80
SF4G-S1	-9.5dBm	-2.5dBm	-15dBm	-3dBm	850 MM	70/150m
SF4G-LX1-3	-8dBm	-3dBm	-17dBm	-3dBm	1310 SM	1-5
SF4G-LX2-3	-8.4dBm	-1dBm	-17dBm	-3dBm	1310 SM	5-10
SF4G-LX3-3	0dBm	5dBm	-18dBm	-3dBm	1310 SM	10-30
SF4G-LX4-3	0dBm	5dBm	-18dBm	-3dBm	1310 SM	10-40
SF4G-LX4-5	2dBm	5dBm	-24dBm	-9dBm	1550 DFB SM	25-80
SF4G-SF13	-5dBm	0dBm	-18dBm	0dBm	Tx1310 DFB SM Rx1550 SFS	0 -20
SF4G-SF15	-5dBm	0dBm	-18dBm	0dBm	1550TxDFB SM 1310Rx SFS	0 -20
SF4G-LF55	-2dBm	3dBm	-18dBm	0dBm	Tx1550 DFBSM Rx 1490 SFS	10-40
SF4G-LF49	-2dBm	3dBm	-18dBm	0dBm	Tx1490DFBSM Rx1550 SFS	
SF4G-ZF55	0dBm	4dBm	-25dBm	-6dBm	Tx1550Rx1490DFB/APD SFS	25-80
SF4G-ZF49	0dBm	4dBm	-25dBm	-6dBm	Tx1490 Rx1550DFB/APD SFS	25-80
SF4G-LX3-5C-xx	0dBm	4dBm	-18dBm	-3dBm	CWDM 1xx0nm/DFB	10 -40
SF4G-LX4-5C-xx	0dBm	5dBm	-26dBm	-3dBm	CWDM 1xx0nm/DFB/APD	25 -80
SF4G-LX4-5D-XX	0dBm	4dBm	-24dBm	-6dBm	DWDM ITU Channels DFB/APD	25-80

xx= CWDM:1470/1490/1510/1530/1550/1570/1590/1610nm

XX= DWDM ITU GRID CHANNELS(100GHz Spacing)

Related Product

Model	Part#	Description
MS-CH/A	2100	<i>MetroStar</i> Chassis, 3U, 16 slots, including 2 AC Power Supplies, 6*BP-01, 1*BP-02, 19" Rack-mount bracket set (<i>MetroStar</i> with DC Power Supplies is also available)
MCM1000X	2650	Flexible Gigabit Ethernet conversion module for <i>MetroStar</i> with 2 SFP modular ports, each may accept any FibroLAN copper or fiber SFP transceiver, MA management
MCM1000X-RL	2651	Any to Any link protection Gigabit Ethernet conversion module for <i>MetroStar</i> with 4 SFP modular ports, each may accept any FibroLAN copper or fiber SFP transceiver, MA
MSM2500U	2519	Universal Extender module, 100Mbps to 2.5Gbps, includes 2 SFP slots (Only FibroLAN SFP transceivers can be used)
MSM4000U	2521	Universal Extender module, 100Mbps to 4.0Gbps, includes 2 SFP slots, (Only FibroLAN SFP transceivers can be used).
GSM1000X	3750	MA Managed Gigabit Ethernet converter/access device/extender with 2 SFP modular ports, each may accept any FibroLAN copper or fiber SFP transceiver.
U.CON2500	B266	Universal Extender , 100Mbps to 2.5Gbps, includes 2 SFP slots (Only FibroLAN SFP transceivers can be used)
U.CON40000	B315	Universal Extender , 100Mbps to 4.0Gbps, includes 2 SFP slots (Only FibroLAN SFP transceivers can be used)

Specifications are subject to change w/o prior notice

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