

# SFP-MC / SFP-SC

Optical Data SFP Modules

## Overview

The FiberPlex Technologies Small Form Factor Pluggable (SFP) transceivers are compatible with the Small Form Factor Pluggable Multi-Sourcing Agreement (MSA). The SFP transceivers are high performance, cost effective modules supporting a host of data rates and distances. They are RoHS compliant and lead-free. These optical modules are designed for digital data applications and are not recommended for digital video applications due to SMPTE encoding that may cause pathological signal errors. For video applications see our line of Video Optimized SFP Modules.



## Features:

- Duplex LC connector
- Hot-pluggable SFP footprint
- RoHS compliant and Lead Free
- Metal enclosure for lower EMI
- Single +3.3V power supply
- Low power dissipation <800mW
- SFP MSA SFF-8074i Compliant

## Applications:

- Telecom / VOIP
- SCADA
- Physical Security
- IT Infrastructure
- Industrial Controls
- Networked Audio
- MADI

## A Large Selection of Optics

The FiberPlex Technologies line of SFP Modules supports a host of data rates, wavelengths ( $\lambda$ ) and power configurations providing maximum flexibility. The SFPs simultaneously support various SONET, Synchronous Digital Hierarchy (SDH) and IEEE Ethernet standards. Both dual fiber transceivers and single fiber Bi-Directional (BiDi) round out the flexible offering. The table below lists many of the popular options and the corresponding FiberPlex SFP part number. Note that the part numbers in **bold** are standard parts. If you do not see exactly what you are looking for, contact your FiberPlex Technologies representative.

Two Fiber Optical Transceiver Modules										
FiberPlex SFP	TX/RX	Data Rate	SONET/SDH/IEEE	Fiber Type	$\lambda$ (nm)	Transmitter Power (dBm)		Receiver Sensitivity (dBm)	TX Jitter (J <sub>TxP-p</sub> )	Max Distance @ Max Data Rate
						Min	Max			
<b>SFP-MC03XC-8585-2</b>	VCSEL/PIN	155 Mbps	OC3 / STM-1 / Fast Ethernet	Multimode	850	-9	-3	-24	1000 ps	2 km
<b>SFP-MC03XC-3131-2</b>	FP/PIN				1310	-15	-8	-30	200 ps	2 km
<b>SFP-SC03XC-3131-B</b>	FP/PIN			1310	-15	-8	-30	200 ps	20 km	
SFP-SC03XC-3131-C	FP/PIN			1310	-5	0	-34.5	200 ps	40 km	
SFP-SC03XC-5555-F	DFB/PIN			1550	-5	0	-34.5	200 ps	80 km	
SFP-SC03XC-5555-H	DFB/PIN			1550	0	+5	-34.5	200 ps	120 km	
<b>SFP-MC24XC-8585-0</b>	VCSEL/PIN	1.25 Gbps	OC24 / Fibre Channel / GbE	Multimode	850	-9	-4	-18	200 ps	500 m
<b>SFP-MC24XC-3131-2</b>	FP/PIN				1310	-15	-8	-24	200 ps	2 km
<b>SFP-SC24XC-3131-B</b>	FP/PIN			1310	-9	-3	-25	200 ps	20 km	
SFP-SC24XC-3131-C	FP/PIN			1310	-5	0	-25	200 ps	40 km	
SFP-SC24XC-5555-F	DFB/PIN			1550	-0	+5	-25	200 ps	80 km	
SFP-SC24XC-5555-H	DFB/APD			1550	-0	+5	-32	200 ps	120 km	
<b>SFP-MC48XC-8585-0</b>	VCSEL/PIN	2.125 Gbps	OC48 / STM-16	Multimode	850	-9	-4	-16	119 ps	300 m
SFP-SC48XC-3131-2	FP/PIN	1310		-9	-4	-19	200 ps	2 km		
<b>SFP-SC48XC-3131-B</b>	DFB/PIN	1310		-5	0	-19	200 ps	20 km		
SFP-SC48XC-3131-C	DFB/APD	1310		-2	+3	-28	200 ps	40 km		
SFP-SC48XC-5555-C	DFB/PIN	1550		-2	+3	-20	200 ps	40 km		
SFP-SC48XC-5555-F	DFB/APD	1550		-2	+3	-29	200 ps	80 km		
Single Fiber Bi-Directional Optical Modules (BiDi)										
FiberPlex SFP	TX/RX	Data Rate (Mbps)	SONET/SDM/IEEE	Fiber Type	$\lambda$ (nm)	Transmitter Power (dBm)		Receiver Sensitivity (dBm)	TX Jitter (J <sub>TxP-p</sub> )	Max Distance @ Max Data Rate
						Min	Max			
SFP-SC03BD-3155-B	FP/PIN	155 Mbps	OC3 / STM-1 / Fast Ethernet	Singlemode	1310/1550	-15	-8	-30	200 ps	20 km
SFP-SC03BD-5531-B	FP/PIN	1.25 Gbps	OC24 / Fibre Channel / GbE	Multimode	1550/1310	-15	-8	-30	200 ps	20 km
<b>SFP-MC24BD-3155-0</b>	FP/PIN				1310/1550	-9	-3	-25	200 ps	500 m
<b>SFP-MC24BD-5531-0</b>	DFB/PIN			1550/1310	-9	-3	-25	200 ps	500 m	
<b>SFP-SC24BD-3155-B</b>	FP/PIN			1310/1550	-9	-3	-25	200 ps	20 km	
<b>SFP-SC24BD-5531-B</b>	DFB/PIN			1550/1310	-9	-3	-25	200 ps	20 km	
SFP-SC24BD-3149-B	FP/PIN			1310/1490	-9	-3	-25	200 ps	20 km	
SFP-SC24BD-4931-B	DFB/PIN	1490/1310	-9	-3	-25	200 ps	20 km			

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## SFP MSA Compliance

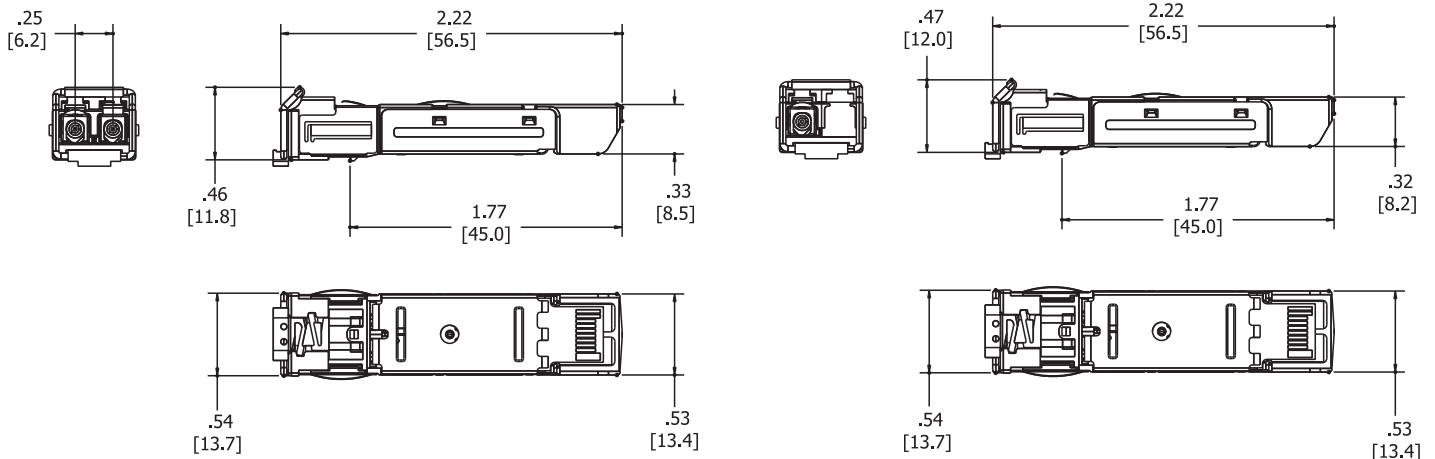
The SFP Multisource Agreement (MSA) is an agreement that was drafted among competing manufacturers of SFP optical modules. The SFF Committee was formed to oversee the creation and maintenance of these agreements including the SFP MSA designated as INF-8074i. This agreement describes a mutually agreed upon standard for the form and function of SFP modules. However, not all SFPs produced are MSA compliant. The MSA provides for a transceiver (TX/RX) pinout. FiberPlex Technologies Data SFPs are fully compliant with SFF-8074i. The pinout for these SFPs can be seen in the chart to on the right.

SFP PINOUT	
PIN	Transceiver / BiDi (MSA)
1	VEE
2	TX_FAULT [VEE]
3	TX_DIS
4	MOD_DEF(2) - SDA
5	MOD_DEF(1) - SCL
6	MOD_DEF(0) - PRESENCE [VEE]
7	Rate [NC]
8	LOS
9	VEE
10	VEE
11	VEE
12	RD-
13	RD+
14	VEE
15	VCC
16	VCC
17	VEE
18	TD+
19	TD-
20	VEE

## Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883 Method 3015
- ESD to the Duplex LC Receptacle: compatible with IEC 61000-4-2
- Immunity compatible with IEC 61000-4-3
- EMI compatible with FCC Part 15 Class B EN55022 Class B (CISPR 22B) VCCI Class B
- Laser Eye Safety compatible with FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2
- RoHs compliant with 2002/95/EC 4.1&4.2 2005/747/EC

## Physical Specifications



SFP Dimensions - Transceiver (Left) and BiDi (Right)

ELECTRICAL SPECIFICATIONS		Min	Typ	Max	unit
Environmental	Storage Temperature (°C)	-40	-	85	°C
	Operating Temperature (°C)	0	-	70	°C
Power Requirement	Voltage Range	3.13	3.3	3.47	VDC
	Supply Current	-	-	250	mA
PHYSICAL SPECIFICATIONS					
	Length	Width	Height	Weight	
SFP-MC / SFP-SC	2.22 in (56.5 mm)	0.54 in (13.7 mm)	0.47 in (12 mm)	0.8 oz (22.7 g)	