



FRM220-FXO/FXS

FXO/FXS over Fiber

The FRM220-FXO/FXS is a POTS (Plain Old Telephone System) over fiber converter/extender. The POTS connection uses a standard RJ-11C modular connector for one copper pair connection. A pair of FRM220-FXO/FXS is required to implement an end to end system. FXO mode connects to a telephone line (PSTN) or PBX station line and has ability to detect ringing voltages and to act as a telephone. FXS mode is the reciprocal unit and has ability to act as PSTN and connects to a telephone device. When the FRM220-FXO/FXS card is placed in the FRM220 rack with SNMP management, in-band management allows configuring and viewing the card and remote converter's status, type, version, fiber link status, on hook status and alarms. Both card and remote can be configured to enable or disable the port, reset the port and set the FXO or FXS mode. When configured in an FXS to FXS fashion, a private "hot line" or direct line is created. When placed in a single slot chassis and used standalone without management, the card may be configured by DIP switch.

Features

- Extend telephone voice transmission up to 120km over fiber
- Network management via terminal, web or SNMP in FRM220 chassis
- Supports caller ID Pass-Through
- Selectable FXO or FXS mode
- Supports FXS to FXS hot line

Specifications

Optical Interface	Connector	1x9 (SC)
	Fiber	MM 62.2/125μm, 50/125μm, SM 9/125μm
	Rate:	155Mbps
	Distance	MM 2km, SM 15/30/50km, WDM 20/40km
Wavelength	MM	1310nm, SM 1310, 1550nm
	WDM	1310Tx/1550Rx (type A) 1550Tx/1310Rx (type B)
Indications	LED (Power, FX Link, Phone Act, Test)	
Power Input	12VDC	
Power Consumption	< 6W	
Dimensions	Card: 155 x 20.8 x 88mm (D x W x H)	
Weight	120g	
Temperature	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)	
Humidity	10 ~ 90% non-condensing	
Certification	CE, FCC	
MTBF	65,000 hrs	

Electrical Interface	Connector	RJ-11		
	FXO mode	Impedance	: 600 ohms	
		Coding	: 16 bits liner	
		Loop Current	: 10~100mA	
		Ring Frequency	: Acceptable 20 ~50Hz	
		Insertion Loss	: 0.0 ± 1.0dB at 1000Hz	
		Impedance	: 600 ohms	
		Level Gain	: TX 0dB, RX -3dB	
		FXS mode	Coding	: 16 bits liner
			Dial	: DTMF and Dial Pulse
Battery Source			: 48VDC ± 4V	
Ringing Waveform	: Sine wave			
Ringing Frequency	: 20/25/30/35/40/45/50 Hz selectable			
Ring Cadence	: FXS to FXS : On / 1 sec, Off / 2 sec			
FXO to FXS	: Reproduces the cadence detected by FXO			
Insertion Loss	: 0.0 ± 1.0dB at 1000Hz			
REN	: 4.0B(Ring Equivalence Number)			
Level Gain	: TX 0dB, RX -3dB			

Application

Figure 1 : Automatic Ring down hotline



Figure 2 : Voice Transmission from 2km to 120km over fiber



Figure 3 : Selectable FXO or FXS mode



Ordering Information

Model Name	Description
FRM220-FXO/FXS	FXO / FXS fiber converter
Connector Type	Connectivity Distance

SC,ST,FC 002: 2km 015: 15km 030: 30km 050: 50km
 20A: WDM 20km A type 20B: WDM 20km B type 40A: WDM 40km A type 40B: WDM 40km B type

Connector Type Connectivity Distance
FRM220 – FXO/FXS –
 Example: FRM220 – FXO/FXS– SC002

Note: This card may be set by DIP switch and placed in CH01 standalone chassis. When connected as a remote to a managed central chassis, this card supports in-band management.