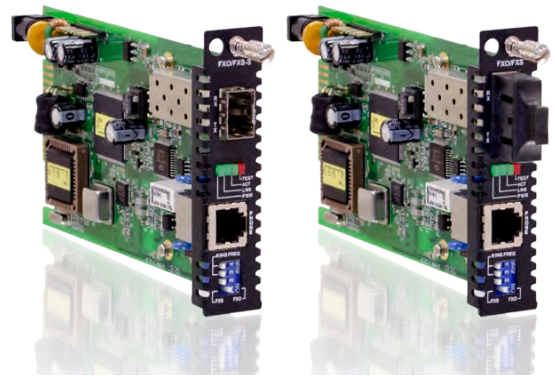


# FRM220-FX0/FXS FRM220-FX0/FXS-SFP

## Voice over Fiber with In-Band Management

### Single port FX0/FXS Fiber Converter



The FRM220-FX0/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-FX0/FXS is required to implement an end to end system. FX0 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-FX0/FXS card is placed in the FRM220 rack with NMC 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 FX0 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 (NMC)
- Supports caller ID Pass-Through
- Selectable FX0 or FXS mode
- Supports FXS to FXS hot line
- Supports D/D function for SFP fiber transceiver
- Will not support FAX or Modems

## Specifications

<b>Optical Interface</b>	Connector	SFP-LC / 1×9 (SC, ST, FC)
	Fiber	MM 62.2/125μm, 50/125μm, SM 9/125μm
		Rate: 51.84Mbps
	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)
<b>Indications</b>	LED (Power, FX Link, Phone Act, Test)	
<b>Power Input</b>	12VDC	
<b>Power Consumption</b>	< 6W	
<b>Dimensions</b>	159.5 × 20.8 × 88mm (D×W×H)	
<b>Weight</b>	120g	
<b>Temperature</b>	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)	
<b>Humidity</b>	10 ~ 90% non-condensing	
<b>Certification</b>	CE, FCC	
<b>MTBF</b>	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 ~55Hz Insertion Loss: 0.0 $\pm$ 1.0dB at 1000Hz Level Gain : TX 0dB, RX -3dB
	FXS mode	Coding : 16 bits liner
		Dial: DTMF and Dial Pulse
		Battery Source: 48VDC $\pm$ 4V
		Ringling Waveform : Sine wave
		Impedance : 600 ohms
		Ringling Frequency : 20/25/30/35/40/45/50/55 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 $\pm$ 1.0dB at 1000Hz
		REN: 4.0B(Ring Equivalence Number)
		Level Gain : TX 0dB, RX -3dB

## Application

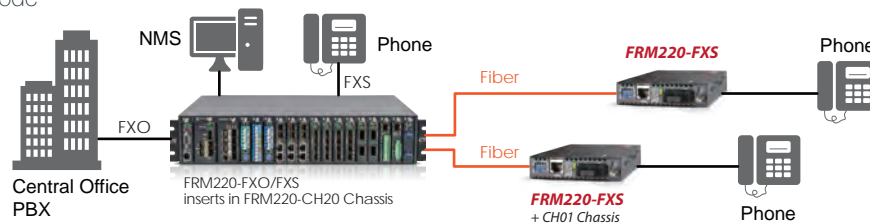
Figure 1 : Automatic Ring down hotline



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 card
FRM220-FXO/FXS-SFP	FXO / FXS fiber converter card (SFP-LC)

Connector Type	Connectivity Distance
SC, ST, FC (Not Applicable for SFP type)	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