



# FRM220-FXO-4 FRM220-FXS-4

4x FXO over fiber & 4x FXS over fiber

FRM220-FXO-4/FXS-4 are 4 channel POTS (Plain Old Telephone System) over fiber converter/extender. The four POTS connection uses standard RJ-11C modular connectors for each copper pair connection. A pair of FRM220-FXO-4/FXS-4 is required to implement an end to end system. FXO type unit connects to a telephone line (PSTN) or PBX station line and has ability to detect ringing voltages and to act as a telephone. FXS type unit is the reciprocal unit and has ability to act as PSTN and connects to a telephone device. Two FXS cards may be connected back-to-back to provide a private "hot line".

When the FRM220-FXO-4/FXS-4 cards are 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. 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 telephone voice transmission
- Supports FXS to FXS hot line
- Supports caller ID Pass-Through

## Specifications

<b>Optical Interface</b>	Connector	SFP-LC
	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)
<b>Indications</b>	LED (Power, FX Link, Phone Act, Test)	
<b>Power Input</b>	12VDC	
<b>Power Consumption</b>	< 6W (FRM220-FXO-4) < 12W (FRM220-FXS-4)	
<b>Dimensions</b>	Card: 155 x 20.8 x 88mm (D x W x 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	

<b>Electrical Interface</b>	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
Provides			: 48VDC ± 4V to FXO	
Ring Waveform	: Sine wave			
Ring 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

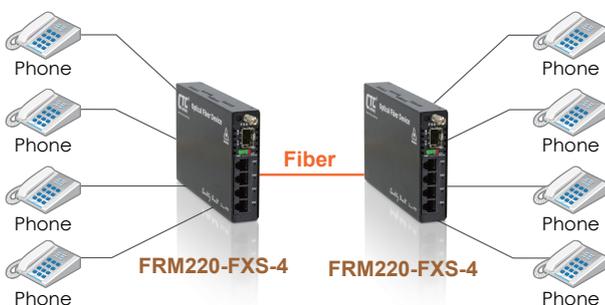
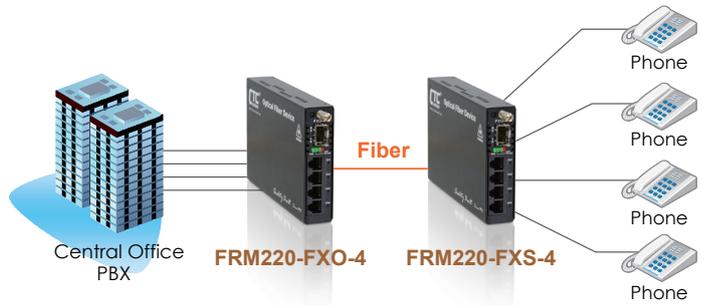


Figure 2 : Voice transmission from 2km to 120km over fiber



## Ordering Information

Model Name	Description
FRM220-FXO-4	4-port FXO fiber converter SFP-LC
FRM220-FXS-4	4-port FXS fiber converter SFP-LC

**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.