

# FRM220-FX0-4 FRM220-FXS-4

## Voice over Fiber with In-Band Management



### 4 × FXO over fiber & 4 × 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 (NMC)
- Supports telephone voice transmission
- Supports FXS to FXS hot line
- Supports caller ID Pass-Through
- Supports FAX and Modem transmissions

## 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>	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 model	Impedance : 600 ohms Coding : 16 bits liner Loop Current : 10~100mA Ring Frequency : Acceptable 20 ~55Hz Insertion Loss: 0.0 ± 1.0dB at 1000Hz Level Gain : TX 0dB, RX -3dB
	FXS model	Coding : 16 bits liner Dial: DTMF and Dial Pulse Provides 48VDC ± 4V to FXO Ringing Waveform : Sine wave Impedance : 600 ohms Ringing 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 ± 1.0dB at 1000Hz REN: 4.0B(Ring Equivalence Number) Level Gain : TX 0dB, RX -3dB

## Application

Figure 1 : Automatic Ring down hotline

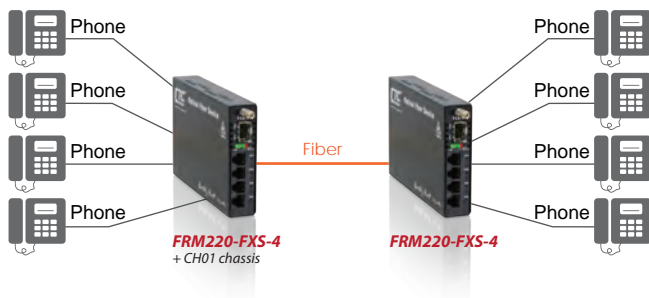
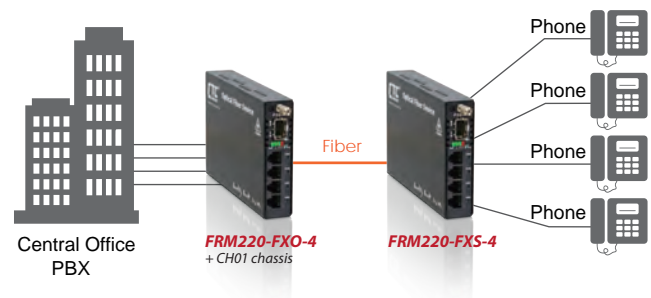


Figure 2 : Voice transmission from 2km to 120km over fiber



## Ordering Information

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

### ■ Chassis Option

Model Name	Description
FRM220-CH1	1-slot chassis with 100~240VAC to 12VDC adapter (12W), fanless
FRM220-CH01-AD	1-slot chassis with AC/12W+DC/12W, fanless
FRM220-CH01M	1-slot chassis with console port and AC/12W+DC/12W, fanless