FXO Voice Card

Features

- **Terminating impedance of 600ohms.**
- **Supports full range of CAS signaling states to ensure compatibility with most public networks.**
- **Encodes analog signals into 64 Kbps PCM format for connection to digital networks.**
- **Ability to specify, on a port-by-port basis, North American ANSI standard AB signaling or ITU (CCITT) ABCD signaling.**
- **Robust diagnostic evaluation and fault isolation through extensive loopbacks and test tone selection.**
- **Compatible with all IMACS voice compression server cards.**
- **Provides ring tone through additional ringing generators**

The FXO 2W*8-6 card manages the flow of FXO voice traffic through the IMACS system. Each card encodes analog signals to 64 Kbps PCM format before transmission onto the T1 or E1 network. It also decodes the digital signals to analog at the remote system. The card has a two-wire interface and supports Foreign Exchange - Office (FXO), Manual Ringdown (MRD), Foreign Exchange Office-Defined Network (FXODN), and Dial-Pulse Terminating (DPT) operations.

FXO cards can be installed in any user slot in the IMACS chassis. FXO cards can use the voice-compression features of the ADPCM card. Each FXO card provides a single 50-pin female Amphenol connector (RJ27X).

The mode setting is used to configure the card based on the type of equipment to which the port is connected. All options use two-wire balanced connections. The FXO option allows connection of the system to a 2 way PBX trunk (both inbound and outbound calls) or a key system trunk. The FXODN (Foreign Exchange Office-Defined Network) option provides access to new services in advanced networks offered by many major carriers. The DPT (Dial Pulse Terminating) option allows the unit to attach to incoming one-way trunks from a PBX, key system or a telephone set. This option is similar to the **fxo** option. The MRD (manual ring down) option provides point-to-point unswitched connections between two telephone sets. This configuration is usually not attached to an exchange or switch; rather it provides a “hot line” between two locations. *The system requires hardware changes and a ringing generator for this option*

The user may also specify, on a port-by-port basis, whether to use North American ANSI standard AB signaling or ITU (CCITT) ABCD signaling by turning the signaling conversion setting "on" or "off".

Software-initiated testing and diagnostics supported on FXO cards include the setting of both analog ("anlg") and digital ("dgtl") loopbacks towards the network and the generation of a digital milliwatt signal on a port-by-port basis. A robust set of test functions allow the user to monitor and set the state of the analog tip and ring leads of any FXO port and to set and monitor the state of the ABCD signaling bits of the digitized voice signal.

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FXO Voice Card

Card Specification	Number of ports	8
	Physical interface	1 female 50-pin RJ-27X telco connector
	Transmission performance	Exceeds requirements of ITU-T Sec. G.713
	Signaling modes	Software selectable on a per port basis. Foreign Exchange Station (FXO) 2 way connection to PRX or key system trunk. Foreign Exchange Station - Defined Network (FXSDN) - provides access to major carrier services. Private Line Automatic Ringdown (PLAR) - point-to-point unswitched connections. Dial Pulse Originating (DPO) slc96 - slc96 compatibility (requires additional software on CPU).
	Signaling types	Loop Start Loop Start - Forward Disconnect Ground Start Ground Start - Immediate Ground Start - Automatic
	Termination impedance	Model 8129 600 ohms with 2.16 uF
VF transmission characteristics		
	Nominal transmit TLP:	-10.0 dB to +5.0 dB in steps of 0.1 dB
	Nominal receive TLP:	-10.0dB to +2.0dB in steps of 0.1 dB
	PCM encoding:	Software selectable on a per port basis mu-law, A-law or a-inv (inverted A-law)
	Frequency response	300-3khz <-0.15+0.15dB, Typical 0.05dB 3200 hz <-0.75dB, Typical 0.07dB 3400hz <-1.568, Typical 0.4dB
	Return loss (at 1 Khz):	>28 dB
	Relative transhybrid	Against 600ohm, in series with 2.16 pF termination.
	Loss	ERL 34.5dB SRL LO 20.5dB SRL HI 20.5dB
	Idle channel noise (rcv and xmt):	<-65 dBmop Typ < - 70 dBmop or <20 dBrncp
	Interchannel crosstalk	Typical <-75 dBm0 using 7 adjacent channels being disturbed with a signal of 0.0 dBm0
	Total distortion including quantization (signal to distortion ratio) input frequencies 1004-1020 Hz:	

Input Level	Rcv or Xmt	Overall
-30 to 0 dBm0	>35dB	>33dB
-40 dBm0	>29dB	>27dB
-45 dEm0	>25dB	>22dB

	Absolute group delay	<750 microseconds
	Group delay distortion vs. frequency:	Within boundaries of ITU-T Rec. G.713 Figure 2
	Longitudinal balance	Nom > 46 dB Typical > 50 dB
	Variation of gain with Input level	Within boundaries of ITU-T Sec. G.713 Figure 7 Typical gain variation is within +0.25 dB from +3 to -50 dBm0
	Diagnostic capabilities	Analogue loopback and digital loopback Extensive support for test tone insertion, termination, signaling lead set and monitor.
	Trunk Conditioning	Idle or Busy
Standards	AT&T TR43801, ITU-T G.711 1988, ITU-T G.712, ITU-T G.713, ITU-T G.714, ITU-T Q.552, ITU-T Q.553, FCC Part 68	
Compliance	FCC Part 15 - Subpart J, UL 1459, 3rd edition	
Product Number	PRM-813970	
Physical Specification	Card height	8 inches (20 cm)
	Card width	15/16 inches (2.35cm)
	Card depth	71/2 inches (18.75cm)
	Power consumption	7 Watts
	BTU/hr	23.9
	Operating temperature	0 to 50C, 32 to 122 F
	Storage temperature	-20 to 80 C, -4 to 176 F
	Humidity	0 to 95% humidity, non-condensing
IMACS Platform	IMACS chassis	891630 IMACS 600, 891830 MACS 800, or 891930 IMACS 900
	Control CPU card	880460 bus-connect or 880370 cross-connect CPU
	System Host Code	3.6.y & 6.x.y or later
	Power supply options	8901 AC or 890220 DC; 8901 requires 8905 (voltage converters) Optional ring generator 890620 required