FXS Voice Card

Features

- **Terminating impedance options 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**

FXS cards can be installed in any user slot in the IMACS chassis. FXS cards encode the incoming analog voice signals into 64 Kbps PCM format before transmission onto the network. FXS cards can use the voice-compression features of the ADPCM card. Each FXS card provides a single 50-pin female Amphenol connector (RJ27X).

All port parameters are software selectable on a port by port basis. The mode setting specifies whether the port is to be used for standard Foreign Exchange Station ("FXS"), Foreign Exchange Software Defined Network ("FXSDN"), Private Line Automatic Ringdown ("PLAR"), or Dial Pulse Origination ("DPO") applications. The type setting specifies Loop Start ("LOOP"), Loop Forward ("LP-FD"), Ground Start ("GS"), Ground Start Immediate ("GS-I") and Ground Start Automatic ("GS-A") operation. The PCM coding options supported include "U-law", "A-law" and "A-inv" (inverted A-law), and the user may also select the trunk conditioning mode ("busy" or "idle") that should be applied towards the attached equipment should the WAN facility that the port is connected to fail.

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 the FXS card includes 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 FXS port and to set and monitor the state of the ABCD signaling bits of the digitized voice signal.

FXS 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 (FXS) 2 way connection to PRX or key system trunk. Foreign Exchange Station - Defined Network (FXSDN) - provides access to major carrier services. Wink option. Private Line Automatic Ringdown (PLAR) - point-to-point unswitched connections. Dial Pulse Originating (DPO) - similar to FXS but out-going only 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 812960 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 3400 Hz <-1.568, Typical 0.4dB
	Return loss (at 1 KHz) :	>28 dB
	Relative transhybrid Loss	Against 600 ohm, in series with 2.16 pF termination. ERL 34.5dB SRL LO 20.5dB SRL HI 20.5dB
	Idle channel noise (rcv and xmt):	<-65 dBmop Typical < - 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	Analog loopback and digital loopback Extensive support for test tone insertion, termination, signaling lead set and monitor.
	Trunk Conditioning	Idle or Busy
Standards Compliance	AT&T TR43801, TR-NWT-000057, 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 FCC Part 15 - Subpart J	
Product Numbers	PRM-812960	
Physical Specification	Card height	8 inches (20 cm)
	Card width	15/16 inches (2.35cm)
	Card depth	71/2 inches (18.75cm)
	Power consumption	9.7 Watts
	BTU/hr	33.12
	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) Ring generator 890620 required