GENERAL DATACOMM

Xedge AVM LIMs

Critical Analog Voice Applications at High Aggregate Rates

INTRODUCTION

As mission critical enterprise networks evolve, there is a continuing need for analog voice/VG connections. Private network operators for defense, aviation, railways, utilities as well as other governmental agencies/industries are looking for a technology refresh that not only supports new and emerging Ethernet/IP/MPLS services with higher bandwidth applications, but also the transport of the legacy services now in place. Any viable migration of these critical legacy networks must include a flexible analog voice solution to be cost effective.

The Xedge Analog Voice module (AVM) meets the need for applications, such as Analog Voice Trunking in interconnecting office PBXs, Push-to-Talk (ground to air communications), and VG services, among others.

Intended Use

The Xedge AVM LIM installs behind the Xedge PCX slot controller at the midplane connector of any Xedge switch to provide all physical interfaces. Each controller can accept an additional AVM or other type of Xedge LIM to create a variety of multiservice combinations. The Xedge AVM LIM employs an 8-port plug-in interface module that supports up to 8 voice channels for 2/4 W E&M applications.

The AVM LIM also has a built-in digital codec that enables voice packetization (AAL-2 or VoIP) with or without standards-based compression schemes.

Future development of the Xedge AVM LIM will support additional applications: 4-port incremental async/sync data for mixed services on the same card, and a standalone solution for voice and data service provisioning which can be used for CESoPSN encapsulation or VoIP.

LIM FEATURES

- Single-slot LIM supports eight E&M voice ports. (*Figure 3*)
- Supported by the PCX2 slot controller in any Xedge chassis
- Manageable via RS232 console port, remote in-band Telnet, SNMP, Ethernet and the ProSphere NMS
- Supports AAL1 and CESoPSN in any Xedge shelf system
- Intended for in-building cabling
- Configurable audio level adjustment in each direction
- U-law and A-law encoding
- Busying out or administrative turndown
- Fax Bypass support
- Echo Cancellation per ITU-T G.165
- Supports silence suppression, white noise generation, voice compression
- Meets MOS scores greater than or equal to 3.5
- Provides a "test tone" on the circuit for troubleshooting, and a status of each port.
- Able to nail up two way voice paths with no signaling required.
- ITU-T G.729 CS-ACELP or ITU-T G.726 ADPCM compression schemes.
- G.729 8K VoIP to G.711 CESoP Transcoding
- Conforms to RFC 1884 IPV6 addressing schemes

Status & Diagnostics

The Xedge Analog Voice LIM provides several useful status and diagnostic tools, such as loopbacks on 4-wire circuits and Call and Signaling status (onhook/offhook, etc.). The AVM LIM also can inject a test tone for troubleshooting purposes.
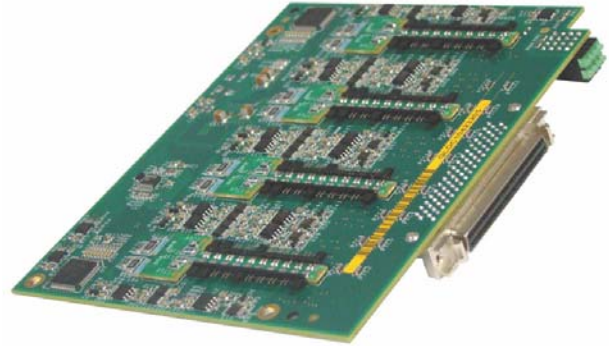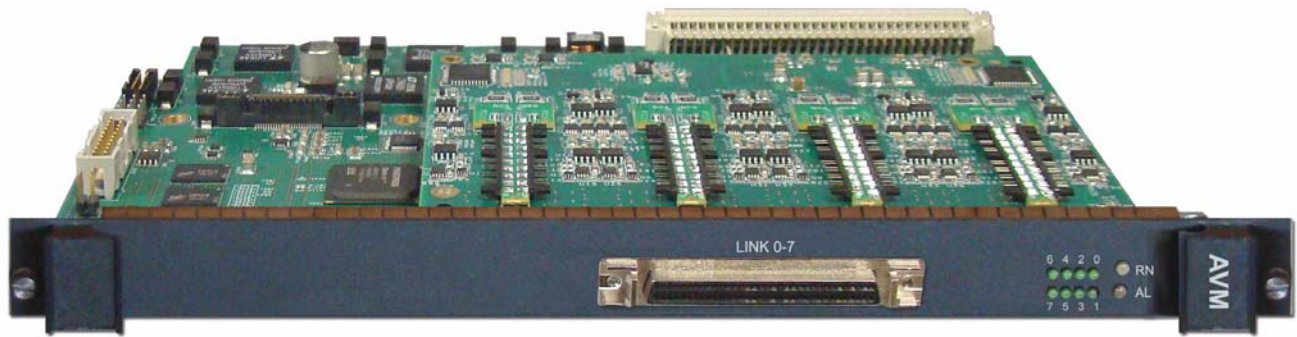
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Interface Card Options

The Xedge AVM LIM is ordered from the factory with one E&M interface plug-in card as listed in the table below. The E&M interface card has eight banks of jumpers that allow the user to individually configure an E&M signaling type for each of the eight ports: Type I, Type II, Type III, Type IV, Type V, or SSDC5A.

Figure 1 shows the AVM LIM basecard with the 8-port E&M interface plug-in card installed.

Figure 2 shows the E&M signaling jumpers on the 8-port E&M interface plugin card.

Figure 2: Onboard E&M Signaling Jumpers

Figure 1: Xedge AVM LIM with 8-port E&M interface plug-in card

Components	Ports	GDC P/N
Analog Voice LIM basecard	- -	032P209-001
E&M 2/4 wire interface plug-in	8 ports	032P205-001
AVM Basecard with E&M 2/4 wire interface plug-in	8 ports	032M209-019

Physical Specifications

LIM Model / Supported interface

AVM-E&M: One 2/4 W E&M interface card with 8 ports. The front panel connector and indicators are shown at right.

Operational Specifications (all models)

Compatible Controllers: PCX2
Compatible Chassis: Xedge 6002, 6160, 6280, 6640 and 6645
Port Capacity: up to 8 voice ports

Physical Specifications

Dimensions: 10.5" x 8" x 1"
Weight: Approximately 1 lb

Environmental Specifications

Non-operating Temp: -40 to 70 degrees C (-40 to 158 degrees F)
Non-operating Relative Humidity: Up to 95%
Non-operating Altitude: up to 12,191 m (40,000 ft)

Operating Temp: 0 to 50 degrees C (32 to 122 degrees F)
Operating Relative Humidity: Up to 95% non-condensing
Operating Altitude: -60 to 4,0000 m (-197 to 13,123 ft)

E&M Audio Parameters

Maximum Output Level	+.5 dBm
Maximum Input Level	+1.0 dBm
Nominal Input Impedance	600 ohm
Nominal Output Impedance	600 ohm
Gain Adjust Transmit/Receive	±6 dB
Gain Adjust Steps	N/A (±0.5 dB)
Idle Channel Noise, Psophometric Weighted	< -74 dBm
Frequency Response, 300 Hz to 3,000 Hz	±0.2 dB
Isolation	1,000 VAC

E&M Signaling Parameters

E&M Signaling Type	I, II, III, IV, or V
Configurable Signaling	Signaling Unit
Maximum Output Signaling Current	35 mA
Output Signaling Voltage	-24 to -60 VDC
E&M Circuit Isolation	1,000 VAC

Management Interfaces

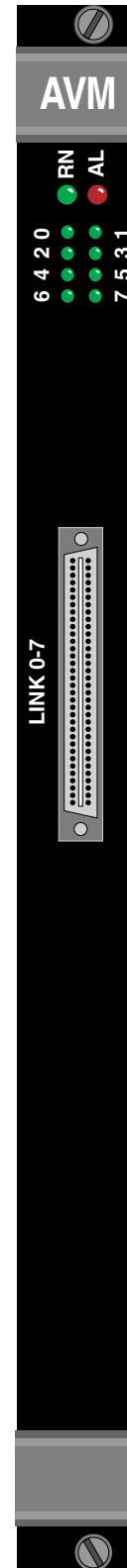Standard SNMP and GDC MIB management;
GDC's ProSphere Network Management System

Figure 3: Xedge AVM LIM Front Panel