

## Critical Analog Voice Applications at High Aggregate Rates

### Introduction to ANA-Voice LIMs

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 ANA Voice LIM meets the need for applications, such as Analog Voice Trunking in interconnecting office PBXs, Foreign Exchange, Private Line Ring-down (pickup-and-ring), and Push-to-Talk (ground to air communications) and VG services among others.

### Intended Use

The Xedge ANA Voice 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 ANA Voice LIM, or a different type of Xedge LIM to create a variety of multiservice combinations. The Xedge ANA Voice LIM supports as few as four or as many as 12 voice channels:

- FSX and FXO applications are supported in 4-port increments.
- 2/4 W E&M applications are supported with an 8-port module.

The ANA 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 ANA LIM will support a variety of additional applications: 4-port incremental async/sync data for mixed services on the same card, 2-port 2/4W E&M module for low density applications, and a standalone solution for voice and data service provisioning which can be used for CESoPSN encapsulation or VoIP.

### Status & Diagnostics

The Xedge ANA 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 ANA Voice LIM also can inject a test tone for troubleshooting purposes.

### LIM Features

- Single-slot LIM supports up to 12 voice ports
- Supported by the PCX slot controller in any Xedge chassis
- Manageable via RS232 console port, remote in-band Telnet, SNMP, Ethernet and the ProSphere Network Management System
- 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.

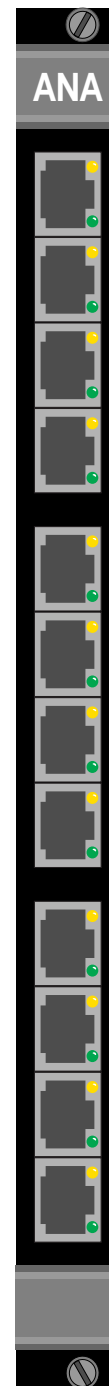


Figure 1: Front Panel Features of Xedge Analog Voice LIM (Shown: 2W FXO/FSX)