

# EBS-FXO SPX

ANALOG LINES EXTERNAL BOARD FOR SOFT PBX WITH 4, 8 OR 12 LINES



## Main Characteristics

- 4, 8 or 12 analog channels
- Echo canceling in hardware
- DSPs for processing of audio and signaling
- Web interface for control, visualization and download of logs
- Compatible with open source soft PBX

## Typical Applications

- PBX
- IP PBX
- Gateway
- IVR
- DAC

## Models

- EBS-FXO 40, with 4 FXO interfaces
- EBS-FXO 80, with 8 FXO interfaces
- EBS-FXO 120, with 12 FXO interfaces

## Overview

The EBS-FXO SPX was developed for applications that use open code software and require analog trunking. Added value platforms, Audible Response Unit (IVR), IP, PBX, Telemarketing, Voice Mail, Conference, and Help desk, among other items, are examples of applications in which the equipment can be used.

Its voice resources, which include detection of voice mail, detection and suppression of DTMF and AGC, call progress, reproduction and recording of audio messages, detection of fax signals, among other items, in addition to echo canceling, are performed in the hardware without consuming the processing capacity of the host. This robust architecture allows for the use of the EBS-FXO SPX in high density applications using servers with less processing capacity and low cost.

## Exclusive Resources of the EBS-FXO SPX:

- Network channels: 4, 8 or 12 analog channels
- Modularity: 3 x 4 lines
- PBX protocols: generation and flash detection
- Line impedance configurable for 900 or 600 Ohms
- Assistant for configuration of call progress
- Information on signaling and state of channels reported via AMI interface
- Balancing of calls between channels from one or more output routes
- Reports inversion of polarity

### Physical characteristics:

- Connectors: RJ11
- Weight: from 2.08 to 2.21Kg

## Resources available on the entire EBS family of products

### Voice processing

#### High capacity resources:

- All voice resources available simultaneously on all channels
- DSPs for processing of audio and signaling

#### Detection and generation of tones (DSP)

- MFC exchange (R2 signaling)
- Detection and generation of DTMF digits, fax tones, 425Hz (dial tone) and TDD messages (*Telecommunications Device for the Deaf*)
- Detection of intercept tones (voice mail, collect calls, etc.)
- Generation of programmable tones (beep)
- Detection of silence and presence of audio before and after answering
- Detection of fax signal and voice mail with standard signaling: 600Hz/450ms – 1000Hz/450ms or 300Hz/250ms
- Detection of programmable frequencies (for example: portability tone, non-standard voice mail, etc)

#### Audio enhancement features

- DTMF suppression
- Manual and automatic volume control (AGC)
- *Carrier grade* echo canceling in hardware
  - Up to 64ms (512 TAPS) simultaneously on all channels, independent of other resources
  - Convergence and automatic delay adjustment during the entire call
  - Compatible with ITU-T G.165 and G.168 norms (2000 and 2002)

#### Call signaling and handing

- Detection of collect calls through recognition of tones, signaling or double answering
- Call progress for generation of call control events in FXO interfaces and PBX protocols
- Classification of call answering (*Call Analyzer*)

### High availability

- 2 Ethernet ports for server connection (network redundancy)
- Server redundancy (supports virtual IP)

### OAMPT

- Automated installer for updating and implementing new systems
- Web system for configuration, monitoring and diagnostics
- Native integration with SNMP
- Signaling analyzer
- Remote monitoring in real time (via web)
- Web interface for control, visualization and download of logs

### Physical Characteristics

- Standard 1U Module and 1/2 19" rack
- Measurements in mm: 44.5 (height) x 220.5 (width) x 280 (length)
- Power source: Full Range (100~240Vac - 50/60 Hz)

### Compatibility

- Compatible with Asterisk®

### Guarantees and Certifications

- Factory warranty 3 years
- The entire EBS line is Anatel certified
- ISO 9001:2008 Industry certified

## Additional product images



Rear view of model with 12 FX0



Rear view of model with 8 FX0



Rear view of model with 4 FX0



Example of 7 EBS modules arranged in a standard 19" rack

## Application Model

