

# EBS-GSM SPX

EXTERNAL BOARD FOR SOFT PBX WITH 1 TO 16 GSM INTERFACE



## Main Characteristics

- 1 to 16 GSM channels
- DSPs for processing of audio
- Web interface for control, visualization and download of logs
- Classification of call answering (Call Analyzer)
- Compatible with open source soft PBX

## Typical Applications

- PBX Cellular
- Gateway Cellular
- IVR
- Sending and receiving of SMS
- Portability

## Models

- EBS-GSM 10, with 1 GSM channel
- EBS-GSM 20, with 2 GSM channels  
up to
- EBS-GSM 160, with 16 GSM channels

## Overview

The EBS-GSM SPX maintains the standard and quality of the Khomp family of boards, performing all of the audio and signaling processing within the hardware itself.

The voice resources available, such as detection of voice mail, detection and suppression of DTMF and AGC, call progress, reproduction and recording of audio messages, among others, allow for the use of the EBS-GSM SPX in a variety of applications, including: cellular dialer, call back, gateway cellular/VoIP, cellular interface for call centers or PBX, and SMS gateway, among many others.

The EBS-GSM SPX is a compact 1U half rack module with a capacity for up to 16 GSM channels in a single piece of equipment with an easily removable front for substitution of SIM Cards. Each GSM module handles up to 2 SIM Cards of different operators, allowing for the prioritizing of routes.

## Exclusive Resources of the EBS-GSM SPX:

- Modular with up to 16 GSM interfaces
- Capacity for 2 SIM Cards per channel, one active and another stand-by
- Allow for different operators on the same module
- 2G quad band GSM interfaces: 850/900/1800/1900 MHz
- **Optional\*** UMTS interface for 3G six-band: 800/850/900/1700/1900/2100 MHz
- Information on antenna and register of operator available via web interface
- Information on signaling and state of channels reported via AMI interface
- Detection of answering available via dialplan and AMI interface
- Specific signaling commands made available via AMI and AGI interfaces

- Possibility of restricting the sending of number of origin (if supported by operator)
- 1 3dB antenna with cable included per GSM channel

### Sending and receiving of SMS:

- Supports sending and receiving of SMS messages, via dialplan or AMI interface
- Receives confirmation of sending of SMS

### Physical characteristics:

- Connectors: SMA for antennas
- Weight: 2.66 to 4.09 Kg

\* *Optional items at additional cost.*

## 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

### 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®

- 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 handling

- 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*)

### Guarantees and Certifications

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

## KOMBINER

### EXCLUSIVE ACCESSORY FOR EBS-GSM

Kombiner is a piece of equipment that concentrates various GSM interfaces in a single antenna, allowing for the optimization of dB gain on the GSM signal for operations using Khomp EBS. Ask your Khomp Commercial Consultant for more information on this accessory.

## Additional product images



Open front view showing changing of SIM Cards.



Rear view of model with 16 GSM channels



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

## Application Model

