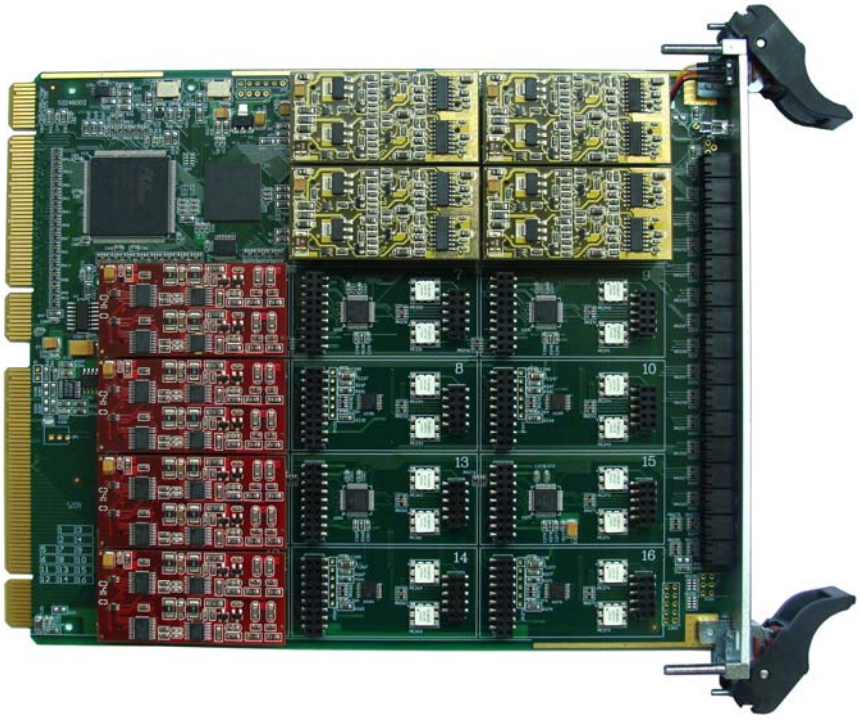
Synway SSW Series

FXM3201P(SSW)

AST Analog Voice Board

Special-for-Switch

Product Introduction



Synway Information Engineering Co., Ltd

www.synway.net

Brief Introduction

FXM3201P(SSW) (hereinafter referred to as FXM32_SSW) is an analog voice board special for the Synway UMCT intelligent switch in Asterisk. It is designed with a smart appearance and a flexible structure. The voice quality it provides is rather splendid. The echo canceller which we developed out independently to cancel echoes in hardware supports 128ms for time delay estimation. This product is really cost effective. With the extendable daughterboards and the selectable modules, you can customize systems to what you want.

Characteristic Features

- **Echo Cancellation**
  1) Compliant with G.168-2002.
  2) The basic motherboard supports 256 point (32ms) for time delay estimation on each channel while the enhanced motherboard supports 1024 point (128ms).
  3) Uses the DSPs on the motherboard to process echoes, not wasting any host resources.
  4) Not only cancels out the effect of voice playback on DTMF and busy tones detection, but also avoids self-excited oscillation and howling, minimizes the possibility of registering wrong DTMF and busy tones in a conference call, especially suitable for VoIP application environments.
- **DMA**

  Uses the DMA technique for data reading and writing, greatly minimizing the cost of host CPU.
- **Structure**
  1) A single board supports up to 32 analog voice channels.
  2) Several kinds of modules are optional for you to install with the mother/daughter boards to achieve different purposes. Actually, we provide FXS, FXO and FXC (a compound body of FXS and FXO). FXC has the capability to ensure safe communication even when the PC is powered off, which eliminates the damage caused by sudden power cuts.
  3) Thanks to the modular design, it is allowed to assemble different number of modules and to acquire analog channels as many as you want (less than 32 per board).
  4) To satisfy the requirement on complex PBX connection, we provide the outlet board RFX321 to connect on-board channels with phone lines. This outlet board has two RJ21 connectors, allowing the direct link to many third-party PBXes and the successful establishment of calls on up to 32 channels at the same time. It is equipped with the lightning-proof circuit, greatly improving the complete security.
- **Compatibility in Software and Hardware**
  1) Includes PCI 2.2 bus with burst data transmission rate up to 132 MB/s; PNP (plug and play) feature eliminates the need for jumper leads; general PCI design supports 3.3V/5V PCI slot and PCI-X slot.
  2) FXM32_SSW has the same processing circuit and software environment as the Synway FXM32 series PCI/PCIe boards. The board driver is compatible with Zaptel and therefore supports a lot of open source PBX systems, like Asterisk, Trixbox, Yate, CallWeaver, FreeSwitch, etc.
- **Interface**

  FXM32_SSW can be extended to have two RJ21 connectors through the outlet board

RFX321. These two RJ21 connectors can either be converted to 32 RJ11 jacks with the help of two SHR-24DA-JB interface converters from Synway, or be used directly to connect with a third-party PBX or a patch panel.

- **Power**

  As our developers have considered the characteristic of FXM32_SSW while designing the Synway UMCT intelligent switch, the use of FXM32_SSW does not require extra power.

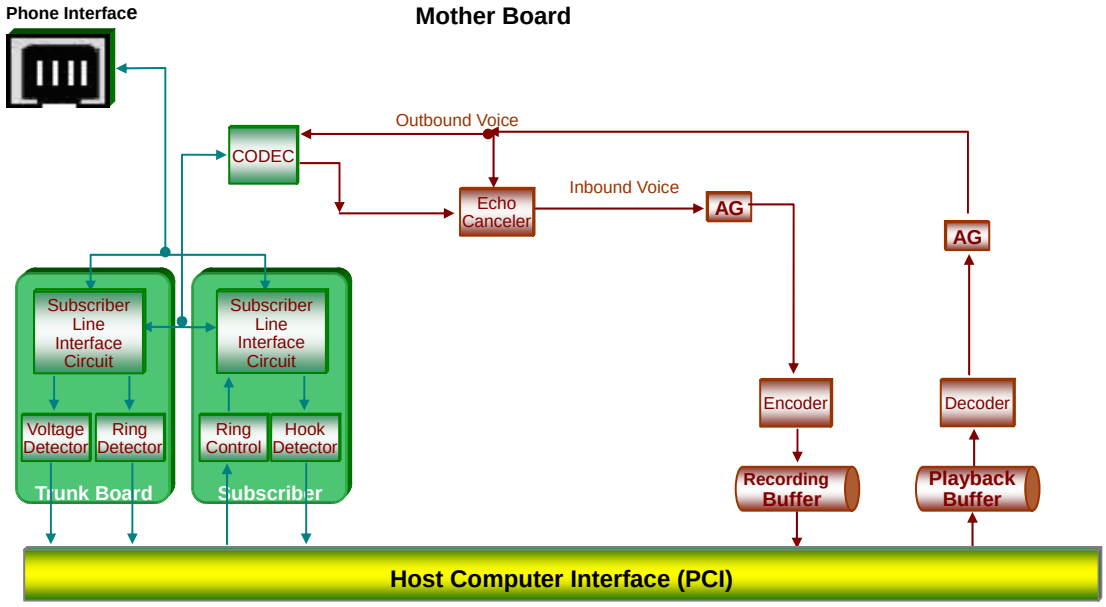
- **Indicator**

  There are 32 two color indicators reserved on the baffle of the motherboard, corresponding to 32 channels. Red represents the FXO channel while green indicates the FXS channel.

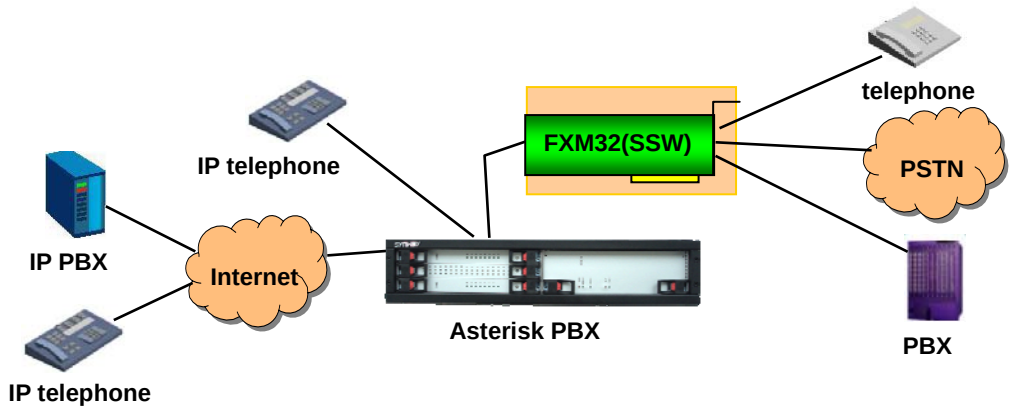
- **Hot Swapping**

  Equipped with hot-swap circuits on the board, supporting insertion and extraction of boards while the system is running, easy for maintenance and backup.

Operation Principle



Typical Application



Technical Specifications

Dimensions

219x175 mm^2 (excluding L-bracket)

Weight

Motherboard: about 185g

(excluding modules)

Module: about 10g

Outlet board: about 90g

Environment

Operating temperature: 0℃—55℃

Storage temperature: -20℃—85℃

Humidity: 8%—90% non-condensing

Storage humidity: 8%—90%
non-condensing

Input/output Interface

Telephone line jack: 2 RJ21

Audio Specifications

CODEC: CCITT A/μ-Law 64kbps

Distortion: ≤3%

Frequency response: 300-3400Hz (±3dB)

Signal-to-noise ratio: ≥38dB

Echo suppression: ≥40dB

Maximum System Capacity

Depends on how many slots on the PBX

Power Requirements

Total Power Consumption includes the electricity use of all motherboards and daughterboards.

Only motherboards
(with modules fully inserted)

+3.3V DC: 4300mA
(power consumption: 14.2 W)

+12V DC: 4000mA
(power consumption: 48W)

Impedance

Insulation resistance for PC isolation from telephone line: ≥2MΩ/500V DC

Telephone line impedance:

Compliant with the national standard impedance for three-component network

Audio Encoding & Decoding

A-Law	*64kbps*
μ-Law	*64kbps*

Sampling Rate

8kHz

Safety

Lightning resistance: Level 4

Purchasing Guide

The Synway FXM32_SSW analog voice board (special-for-switch) provides a complete range of features to meet all requirements.

Model Description

Component	Model	Bus	Echo Cancellation
Motherboard	FXM3201P（SSW）	PCI	Enhanced
Outlet Board	RFX321	—	—
Module	FXO200	—	—
	FXS200	—	—
	FXC200	—	—
RJ21 Line		—	—
Interface Converter	SHR-24DA-JB	—	—

Technical/sales Support

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TIPS

- All the content and data herein have been scrupulously checked. However, we do not guarantee the absence of errors.
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