



Synway CTI Series

SHT-16D-CT/PCle

Analog Voice Board

Product Introduction

Synway Information Engineering Co., Ltd

www.synway.net

> Brief Introduction

The CTI Series SHT-16D-CT/PCIe is a 16-channel analog voice board with PCIe bus. All functions found on general voice boards and specific station boards are available with this board by configuring the various functional modules in different ways.

> Functions

- Supports ring-alert for external calls
- Station phones on-hook/off-hook detection
- Direct connection between trunk and station keeps call uninterrupted during power outage
- All voice channels can be used for faxing
- Calling party info (Caller ID) detection, DTMF and FSK support
- Activity/silence detection
- Automatic Gain Control (AGC) support in recording operation
- DTMF transmission and detection
- Automatic line voltage detection
- Automatically checks the number and the type of the modules on the board

> Characteristic Features

- **PCIe 1.0 Bus Support**

Includes PCI Express 1.0 bus and supports single-way transmission rate up to 2.5Gb, applicable to PCI Express X1, X2, X4, X8, X16 slots.

- **Module Configurable**

8 on-board dual channel modules can be freely arranged in pairs or groups for various complex, multi-functional applications, such as call center and recording functions available on a single board.

- **RJ45 Connectors Available**

A single board has four 8-pin RJ45 jacks, each of which can be converted to four 2-pin RJ11 jack via a four-way hub, making connection easy and malfunctions rare.

- **Teleconferencing**

The flexible distributed conferencing system sets no limit on the number of simultaneous conferences and participants in each conference, allows monitoring and recording of the whole conference and each individual speaker.

- **On-board Ringing Current & Battery Feed Power Supply**

Each station channel has a circuit to generate ringing current and battery feed for itself, saving the cost on external power supply and facilitating the use.

- **Programmable Tone Detector**

Detects single or dual tones at any frequency, offering facility for use with a variety of PBXes and key telephone systems.

- **Specialized Driver Algorithm**

Uses SPECdial – a specialized driver algorithm - to perform a complete automatic dial process through analog lines. Accurately identifies called-party statuses and precisely distinguishes an answering machine from a fax machine that is responding at the remote end.

- **Echo Cancellation**

The self-adaptive echo cancellation feature effectively eliminates echoes under various conditions, which cancels out the effect of voice playback on DTMF and busy tones detection, avoids self-excited oscillation and howling, and minimizes the possibility of registering wrong DTMF and busy tones in a conference call.

The board itself has the capability of 16ms echo cancellation. If it is installed with an E021 module, the capability of echo cancellation will increase to 128ms.

- **Optional Modules**

Compared with the B-type or C-type analog voice boards Synway launched previously, the SHT-16D-CT/PCIe board uses the modularized design more completely. Installing different kinds of modules on a same motherboard of SHT-16D-CT/PCIe can achieve various features and functions. At present, the supported modules are only E021 (with echo cancellation capability) and F021 (with faxing capability).

- **Various CODECs Support**

Offers a large selection of voice CODECs, including hardware-based A-law, μ -law, IMA-ADPCM, software-based 16-bit linear PCM, MP3 and VOX.

- **Supports WAV File**

The recorded speech files can be edited and played by audio tools such as Cooledit.

- **Audio Output Interface**

The analog tone amplifier circuit equipped on the first (default) channel allows the board to connect directly with the headset or sound box, and enable the voice to be played to a specified channel by simple function calls.

- **TDM Capability**

The use of H.100 CT-BUS facilitates smooth connectivity to third-party boards with H.100 bus for the transfer of acquired voice signals to other devices.

- **Unique Hardware Serial Number**

Each board has a unique hardware serial number written in the firmware to distinguish itself

from other boards and prevent piracy. The number is available via an easy function call with applications.

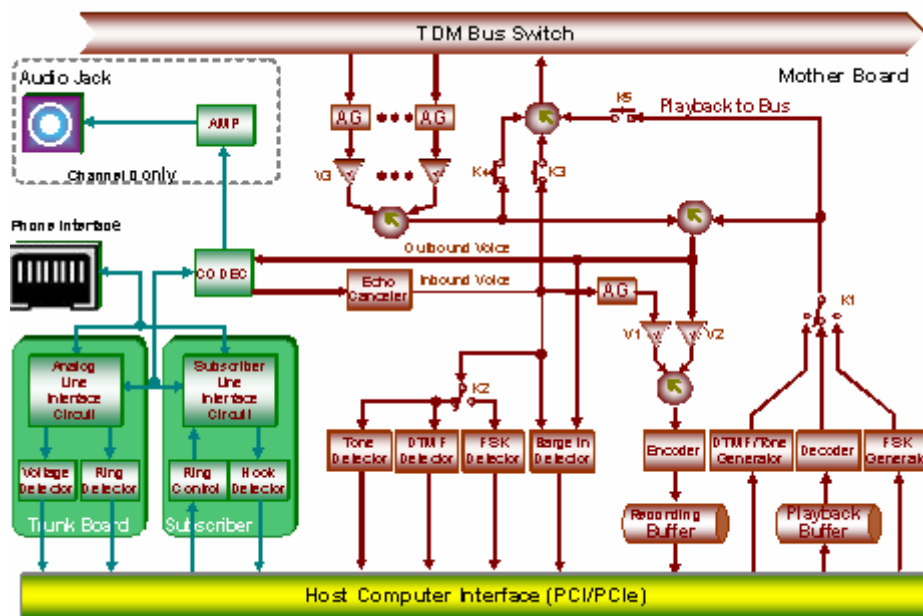
- **Authorized Code Identification Circuit**

The on-board authorized code identification circuit is designed for software safety. Users can apply to our company for the authorized code.

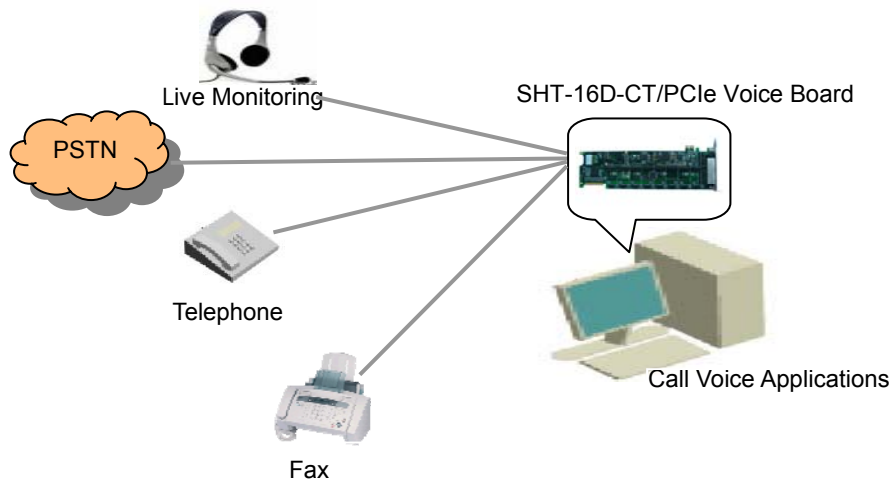
- **Synway's Unified SynCTI Driver Development Platform**

Synway owns the intellectual property rights for the unified high-intelligence SynCTI driver development platform. Each system supports up to 2048 channels. Functions such as the detection and analysis of rings, tones and Caller IDs, are available via simple function calls on the driver platform, without having to understand complex call procedures.

➤ Operation Principle



➤ Typical Application



➤ Technical Specifications

Dimensions

Board: 312×103mm² (excluding L-bracket)

Weight

Board: ≈ 400g

Environment

Operating temperature: 0 °C—55 °C

Storage temperature: -20 °C—85 °C

Humidity: 8%—90% non-condensing

Storage humidity: 8%—90% non-condensing

Input/output Interface

Headset jack: One ϕ 3.5 stereo jack

Telephone line jack: Four 8-pin RJ45 (16B)

Audio Specifications

CODEC: CCITT A/ μ -Law 64kbps,

IMA ADPCM 32kbps

Output power: ≥50mW

Distortion: ≤3%

Frequency response: 300-3400Hz(±3dB)

Signal-to-noise ratio: ≥38dB

Echo suppression: ≥40dB

Maximum System Capacity

With enough system power:

Up to 10 boards concurrently per system; up to 16 channels per board

Power Requirements

+5V DC: 1500mA

+12V DC: 1500mA

3.3V DC: 2000mA (with functional modules)

3.3V DC: 1200mA (without functional modules)

Maximum power consumption: ≤33W (with functional modules, all FXS channels, REN≤3)

Impedance

Input impedance: ≥1M Ω /500V DC;

≥10k Ω /1000V AC

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

Telephone line impedance:

Compliant with the national standard impedance for three-component network

Audio Encoding & Decoding

16Bit PCM 128kbps

8Bit PCM 64kbps

A-Law 64kbps

μ -Law 64kbps

VOX 32kbps

ADPCM 32kbps

GSM 13.6kbps

MP3 8kbps

Sampling Rate

8 kHz

Safety

Lightning Resistance: Level 4

➤ Purchasing Guide

The Synway SHT-16D-CT/PCIe board provides a complete range of features to meet all requirements.

➤ Model Description

Component	Optional Model	PCIe Bus	Echo Cancellation	Faxing
Motherboard	SHT-16D-CT/PCIe	PCIe	—	—
Modules	FXO200	—	—	—
	FXS200	—	—	—
	FXC200	—	—	—
	E021	—	√	—
	F021	—	—	√

➤ Technical/sales Support

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