



Synway AST Series

TEJ400P/TEJ401P

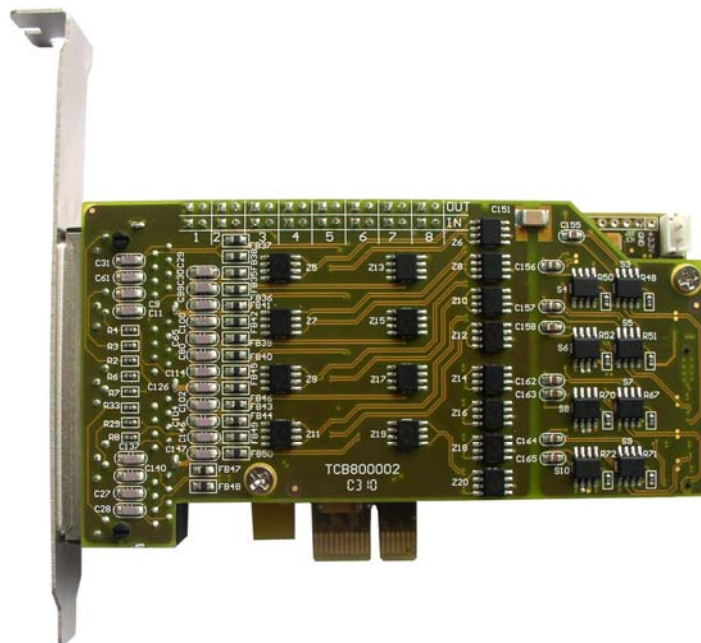
TEJ400E/TEJ401E

TEJ800P/TEJ801P

TEJ800E/TEJ801E

Digital Trunk Interface Board

Product Introduction



Synway Information Engineering Co., Ltd

www.synway.net

➤ Brief Introduction

The Synway TEJ400P, TEJ400E, TEJ800P, TEJ800E, TEJ401P, TEJ401E, TEJ801P and TEJ801E are digital trunk interface boards which support E1, T1 and J1 in Asterisk. As the second generation of the Synway TEJ series, they are in 2U size, 120mm in length, compact in structure and high in integration. Among them, TEJ400P, TEJ401P, TEJ800P and TEJ801P include 3.3V PCI bus, while TEJ400E, TEJ401E, TEJ800E and TEJ801E include PCIe bus, designed especially for various application systems that require high performance.

They all perform echo cancellation by on-board DSPs. The enhanced capability of TEJ401P, TEJ401E, TEJ801P, TEJ801E in echo cancellation reaches 128ms for time delay estimation, which ensures high-quality voice talk without extra modules or devices to support echo cancellation. They are absolutely cost-effective. The design of on-board EMC and lightning-proof circuits further guarantees the security in use.

➤ Characteristic Features

- **PCI/PCIe Bus Support**

TEJ400P/TEJ401P/TEJ800P/TEJ801P includes PCI bus, PCI r2.2 compliant; in the universal PCI design, it supports 3.3V/5V PCI slot and PCI-X slot.

TEJ400E/TEJ401E/TEJ800E/TEJ801E includes PCIe bus, PCI Express r1.0a compliant; supports PCI Express X1, X4, X8, X16 slots and the PNP (plug and play) feature.

- **DMA Read and Write**

The use of DMA technique for data reading and writing helps minimize the cost of the host CPU.

- **Compatible with Asterisk**

Entirely compatible with Asterisk in hardware, with all source codes open.

- **RJ48C Jack**

The TEJ400P, TEJ400E, TEJ800P, TEJ800E, TEJ401P, TEJ401E, TEJ801P, TEJ801E boards all have four RJ48C jacks. Among them, TEJ400P, TEJ400E, TEJ401P and TEJ401E have common RJ48C jacks which can either connect directly with digital trunks or convert to BNC connectors via a proper adapter, while TEJ800P, TEJ800E, TEJ801P and TEJ801E have special RJ48C jacks (RJ48C/M) each of which can convert to two common RJ48C jacks via a two-way hub, making connection easy and malfunctions rare.

- **Echo Cancellation**

The echo cancellers that Synway developed for these boards use on-board DSPs to work. TEJ401P, TEJ401E, TEJ801P and TEJ801E support up to 128ms for time delay estimation per channel, while TEJ400P, TEJ400E, TEJ800P and TEJ800E support 32ms, really cost-effective. It not only cancels out the effect of voice playback on DTMF and busy tones detection, but also avoids self-excited oscillation and howling, and minimizes the possibility of registering wrong DTMF and busy tones in a conference call, designed especially for VoIP application environments.

- **Voice CODEC Support**

Supports A-law, μ -law codecs.

- **Clock Sync Support**

Supports input and output of CT clock, allowing clock synchronization with multiple boards.

- EMC & Lightning-proof Circuits Available

➤ Operation Principle

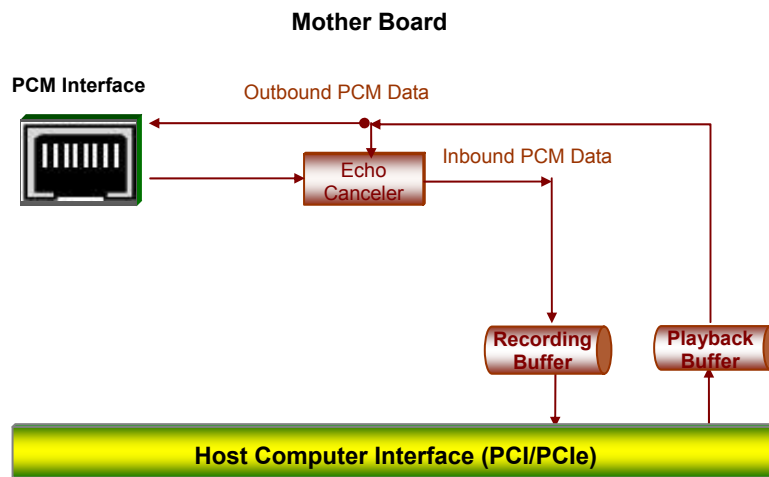


Figure 1 Operation Principle

➤ Typical Application

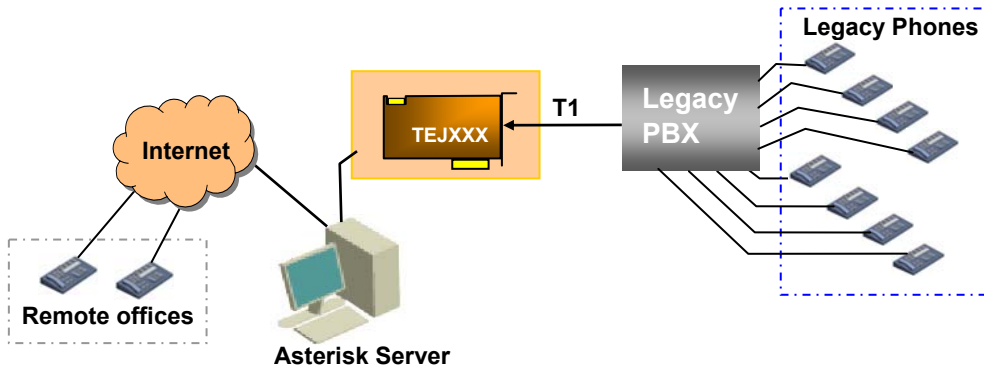
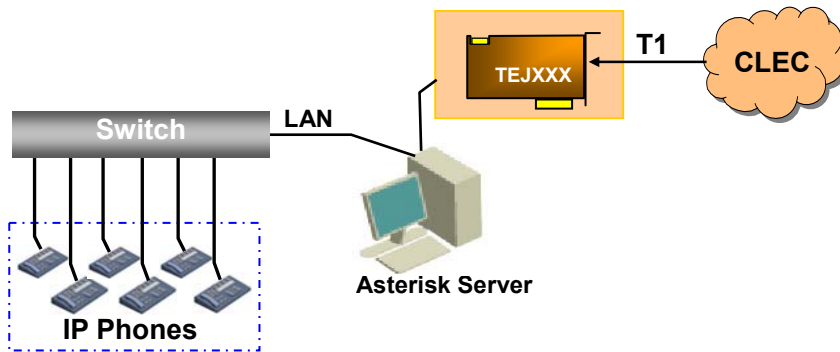


Figure 2 Application Model I: Traditional Telephony System



Note: TEJXXX in Figure 2 and Figure 3 represent TEJ series boards available at present

Figure 3 Application Model II: VoIP Telephony System

➤ Technical Specifications

Dimensions

120×64mm² (excluding L-bracket)

Weight

≤120g

Environment

Operating temperature: 0 °C—50 °C

Storage temperature: -20 °C—75 °C

Humidity: 10%—90% non-condensing

Storage humidity: 10%—90%
non-condensing

Input/output Interface

Digital trunk interface:

TEJ400P/TEJ401P/TEJ400E/TEJ401E:

4 RJ48C jacks

TEJ800P/TEJ801P/TEJ800E/TEJ801E:

4 RJ48C/M jacks

E1 interface:

Compliant with G.703, including 75Ω
unbalanced interface and 120Ω balanced
interface

T1/J1 interface:

DSX-1 and CSU line build-outs available
for different extents of signal losses,
including 100Ω and 110Ω balanced

interfaces

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 the system consumption of
Asterisk and the processing capability of
computer.

Power Requirements

+3.3V DC: ≈1800mA

Maximum power consumption: ≤6.5W

Audio Encoding & Decoding

A-Law 64kbps

μ-Law 64kbps

Sampling Rate

8kHz

Safety

Lightning resistance: Level 4

➤ Purchasing Guide

These Synway TEJ Series PCI/PCIe boards provide a complete range of features to meet all requirements.

➤ Model Description

Model	PC Bus	Voice Channels	Voltage Detection	Echo Cancellation	ANI	T1/E1/J1	A-Law μ-Law	DTMF Detector	Board TDM	Clock Sync
TEJ400P	PCI	120	—	32ms	√	√	√	√	√	√
TEJ800P	PCI	240	—	32ms	√	√	√	√	√	√
TEJ400E	PCIe	120	—	32ms	√	√	√	√	√	√
TEJ800E	PCIe	240	—	32ms	√	√	√	√	√	√
TEJ401P	PCI	120	—	128ms	√	√	√	√	√	√
TEJ801P	PCI	240	—	128ms	√	√	√	√	√	√
TEJ401E	PCIe	120	—	128ms	√	√	√	√	√	√
TEJ801E	PCIe	240	—	128ms	√	√	√	√	√	√

➤ Technical/sales Support

Headquarters

Synway Information Engineering Co., Ltd

<http://www.synway.net/>

9F, Synway D&R Center, No.3756, Nanhuan Road, Binjiang District, Hangzhou, P.R.China, 310053

Tel: +86-571-88860561

Fax: +86-571-88850923

Technical Support

Tel: +86-571-88864579

Mobile: +86-18905817070

Email: techsupport@sanhuid.com

Email: techsupport@synway.net

MSN: synway.support@hotmail.com

Sales Department




Tel: +86-571-88860561

Tel: +86-571-88864579

Fax: +86-571-88850923

Email: sales@synway.net

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