



Synway DST Series

DST-24B/PCI

DST-24B/PCI+

DST-24B/PCI(2.0)

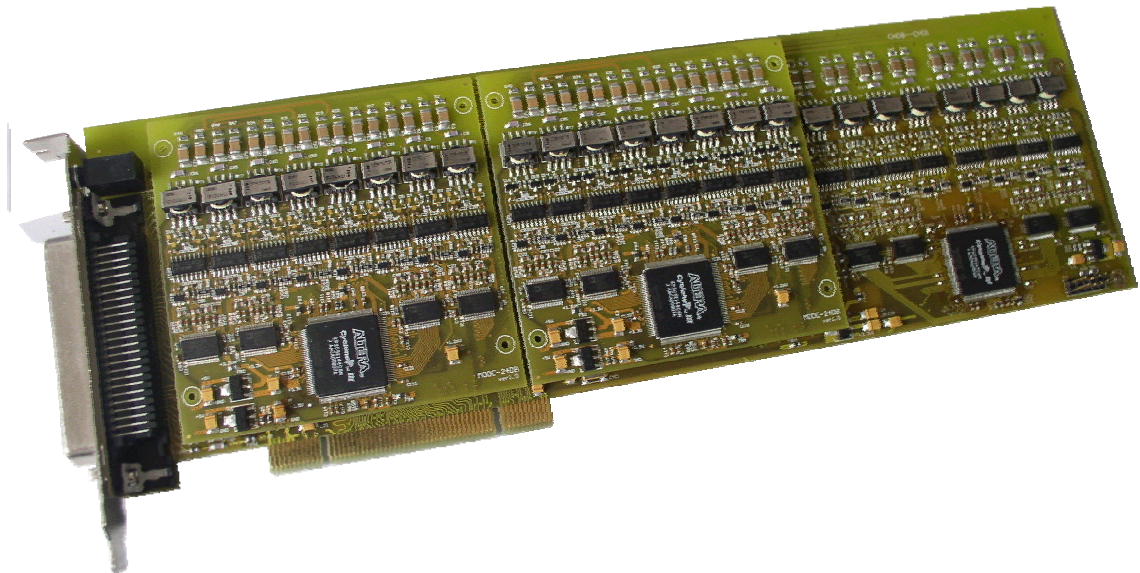
DST-24B/PCI+(2.0)

DST-24B/PCle(2.0)

DST-24B/PCle+(2.0)

Digital Station Tap Board

Product Introduction



Synway Information Engineering Co., Ltd

www.synway.net

> Functions

- High-impedance recording of digital phone lines through parallel connection
- A variety of ways to start/stop recording
- Supports simultaneous recording on 24 channels, each with a different format
- Supports independent-recording of incoming, outgoing and mixed-recording modes
- ANI and DNIS support
- Synchronous acquisition of the information displayed on digital phones during recording
- Detects all modes of keying supported by user phones
- Activity/silence detection
- Automatic Gain Control (AGC) support in recording operation
- Call progress monitoring
- Automatically checks board to see if modules are correctly inserted and to determine the number of modules on the board
- Supports detection and alarming of line faults, including line break and errors in voltage level, signal-to-noise ratio and synchronization
- Switches flexibly between voice channels B1 and B2
- Besides, DST-24B/PCI+, DST-24B/PCI+(2.0) and DST-24B/PCIe+(2.0) boards support MS-GSM, G.729A and MP3 for encoding in hardware

> Characteristic Features

- **PCI 2.2 Bus Support**

(DST-24B/PCI & DST-24B/PCI+ & DST-24B/PCI(2.0) & DST-24B/PCI+(2.0))

These four boards include PCI 2.2 bus with burst data transmission rate up to 132 MB/s; the PNP (plug and play) feature they have eliminates the need for jumper leads; in the universal PCI design, they support 3.3V/5V slot voltage and PCI-X.

- **PCIe Bus Support**

(DST-24B/PCIe(2.0) & DST-24B/PCIe+(2.0))

Developed with the design of PCIe X1, these two boards support PCIe X1, X2, X4, X8 and X16 slots.

- **DMA Transfer Support**

The DMA transfer of recording data does not cost any of the host CPU resources, which helps extend the capacity of recording lines on a single board to an extreme.

- **Modularized Design**

This board is designed with modularized structure and can be configured in flexible ways. Besides the 8 on-board recording channels, each board can be fitted with up to 2 recording modules, and each module can support recording of up to 8 digital phone lines. Now it is widely used in various systems.

- **Available RJ21 Connector**

This board has a 50-pin RJ21 connector which is often used for PBXs, making connection easy and malfunctions rare. With the help of a 24-port RJ21-to-RJ11 adapter that is supplied with the board, users can use the RJ11 jack for direct connection.

- **Fits Modules via Inter-plane Connectors**

The use of high-precision, streamlined, inter-plane connectors highlights the characteristic compact and highly-reliable advantage of Synway's all-in-one boards.

- **1 to 24 Port Hi-Z Monitoring of Digital Lines**

This board connects to monitored phone lines via high-impedance and parallel connection of 2 or 4-lead lines, with the access points flexibly positioned on communication lines between a digital PBX and some digital phones. In such way, it is widely used for recording multiple digital PBX and phone models.

- **Programmable Tone Detector**

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

- **Recording of Source Code Stream**

When using the board, any problem found on the monitored line can be located and settled by remote debugging with the cooperation of users.

- **Remote Support for New PBX Models**

New PBX models can be supported by remote operation, not requiring on-site helps.

- **High-impedance Recording**

The recording impedance is over 1KΩ AC, ruling out interruption on transmission of monitored signals.

- **Instantly-upgradeable Hardware Circuit**

Using instantly-upgradeable hardware circuits, the board can support different models of PBXs and digital phones simply through software reconfiguration, i.e. there is no need to replace any hardware components. So far, a dozen of mainstream PBXs, such as Alcatel, Avaya, NEC, Siemens, Nortel, are supported.

- **Voice Processing & Signaling Analysis**

A single board is capable of processing voices and handling call-signaling analysis, and can constitute a recording system by itself without the need for supplementary boards or external devices.

- **Various CODECs Support**

Offers a large selection of voice CODECs, including hardware-based A-Law (G.711), μ-Law, IMA-ADPCM, and software-based 16-bit linear PCM, MP3. In addition, the

DST-24B/PCI+, DST-24B/PCI+(2.0) and DST-24B/PCle+(2.0) boards support hardware-based MP3, MS-GSM and G.729A for encoding.

- **Supports WAV File**

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

- **Audio Output Interface**

Equipped with an analog tone amplifier circuit and an output interface, the first channel on the board can directly connect to the headset or sound box, allowing monitoring of a specified channel in real time and voice playback only via a simple function call.

- **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.

- **Authorization Code Identification Circuit**

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

➤ **Advantages (vs. A-type Boards)**

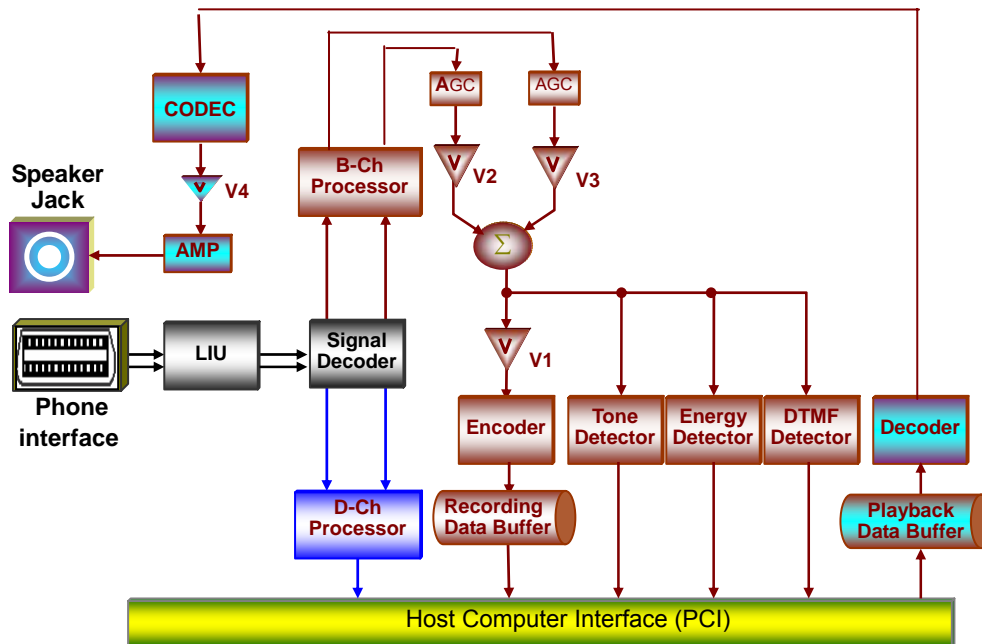
Compared with the old A-type boards (e.g. SHR-16DA-CT/PCI, SHR-24DA-CT/PCI), the DST-24B/PCI, DST-24B/PCI+, DST-24B/PCI(2.0), DST-24B/PCI+(2.0), DST-24B/PCle(2.0) and DST-24B/PCle+(2.0) boards (hereinafter referred to as B-type boards) are endowed with the following advantages:

- Enabled to perform digital adjustment of front-end analog circuits in software, to optimize the input signals before they come into the processor.
- Enhanced capability to detect line faults.
- Use of FPGA chip, to improve the ability of handling complex signals.
- DMA support, to minimize the CPU cost for data transfer.
- Enabled to record on-line source code streams, to locate problems as soon as possible with the cooperation of users.
- Support of new PBX models through remote debugging.
- Enabled to configure a monitored voice channel to B1 or B2 in software, provided the monitored signal is 2B+D.

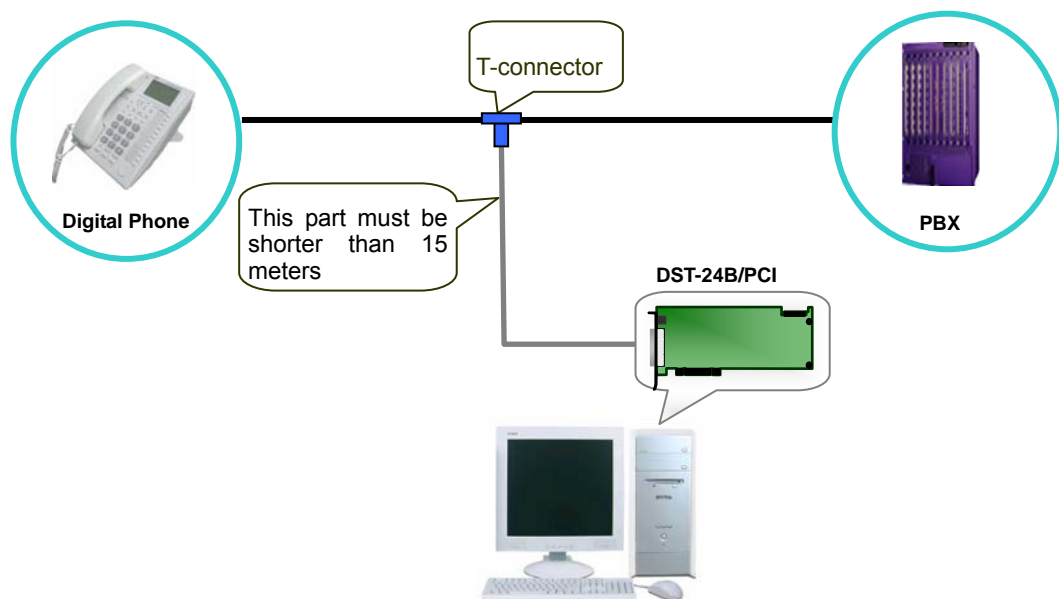
- For boards having greater power (e.g. DST-24B/PCI+, DST-24B/PCI+(2.0) and DST-24B/PCIe+(2.0)): Support of GSM (by default), G.729A and MP3 (by modifying driver configuration items) compressions.

PS: A-type boards don't support GSM and MP3 compressions.

➤ Operation Principle



➤ Typical Application



► Technical Specifications

Dimensions

DST-24B/PCI, DST-24B/PCI+:
310×115mm² (excluding L-bracket)

DST-24B/PCI(2.0), DST-24B/PCI+(2.0),
DST-24B/PCle(2.0), DST-24B/PCle+(2.0):
160×111mm² (excluding L-bracket)

Weight

DST-24B/PCI, DST-24B/PCI+:
≈ 250g (including 2 8-port recording modules)

DST-24B/PCI(2.0), DST-24B/PCI+(2.0),
DST-24B/PCle(2.0), DST-24B/PCle+(2.0):
≈ 200g (including 2 8-port recording modules)

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 φ3.5 stereo jack

Telephone line jack: One 50-pin RJ21 connector

Audio Specifications

Codec: CCITT A/μ-Law 64kbps
IMA ADPCM 32kbps

High compression recording format:

GSM 13.6kbps

G.729A 8kbps

MP3 8kbps, 16kbps

Output power: ≥50mW

Distortion: ≤2%

Frequency response: 300-3400Hz(±3dB)

Signal-to-noise ratio: ≥38dB

Maximum System Capacity

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

Power Requirements

DST-24B/PCI, DST-24B/PCI+:
+3.3V DC: 1500mA
+5V DC: 200mA

-12V DC: 20mA

+12V DC: 100mA

Maximum power consumption: ≤12W (PC
power supply only)

DST-24B/PCle(2.0), DST-24B/PCle+(2.0):

+3.3V DC: 1300mA

+12V DC: 350mA

Maximum power consumption: ≤8.5W
(PC power supply only)

DST-24B/PCI(2.0), DST-24B/PCI+(2.0):

+3.3V DC: 1300mA

+5V DC: 50mA

+12V DC: 300mA

Maximum power consumption: ≤8.5W
(PC power supply only)

Impedance

Input impedance: ≥1000Ω AC

Insulation resistance for PC isolation from
telephone line: ≥20MΩ/500V DC

Audio Encoding & Decoding

16Bit PCM 128kbps

8Bit PCM 64kbps

A-Law 64kbps

μ-Law 64kbps

VOX 32kbps

ADPCM 32kbps

GSM 13.6kbps

MP3 8kbps, 16kbps

G.729A 8kbps

Sampling Rate

8kHz

Safety

Lightning resistance: Level 4

➤ Purchasing Guide

The Synway DST Series DST-24B/PCI, DST-24B/PCI+, DST-24B/PCI(2.0), DST-24B/PCI+(2.0), DST-24B/PCle(2.0) and DST-24B/PCle+(2.0) digital station tap boards provide a complete range of features to meet all requirements.

➤ Board Model

Model	PC Bus	Voice Channels	Audio Jack	Conferencing	Between-board TDM	Tone Detector	G.729A MS-GSM MP3
DST-24B/PCI	PCI	24	√	—	—	√	—
DST-24B/PCI+	PCI	24	√	—	—	√	√
DST-24B/PCI(2.0)	PCI	24	√	—	—	√	—
DST-24B/PCI+(2.0)	PCI	24	√	—	—	√	√
DST-24B/PCle(2.0)	PCle	24	√	—	—	√	—
DST-24B/PCle+(2.0)	PCle	24	√	—	—	√	√

➤ Technical/sales Support

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 -  **Our company reserves the right to modify this document without prior notice and the right for final explanation.**
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