



Synway Voice Board Accessories

SH-SPD8B, SH-SPD16B

Lightning-resistant Box

Hardware Manual

Version 1.0

Synway Information Engineering Co., Ltd

www.synway.net

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Copyright Declaration

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Revision History

Version	Date	Comments
Version 1.0	2006-4	Initial publication

Note: Please visit our website <http://www.synway.net> to obtain the latest version of this document.

Chapter 1 Overview

The lightning-resistant box is used for protecting phone lines against lightning.

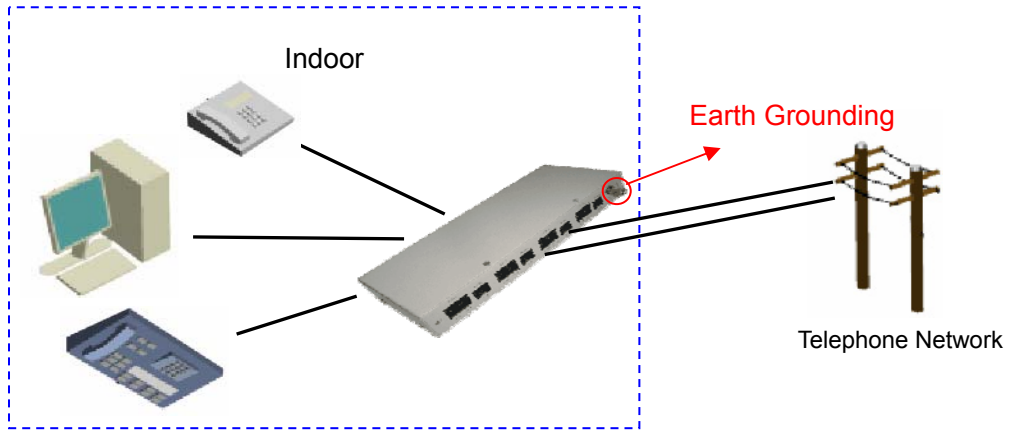
The local line coming from Central Office Terminal (COT) is first connected to the box via the input port and then to a common telecommunication device (e.g. voice board, telephone, fax machine, modem, etc.) from the output port. This box can also be used with a small proprietary PBX or a station voice board of which the lines have to be drawn outside. The use of this box ensures no damage to protected devices from lightning strikes within the box's tolerance level.

This lightning-resistant box meets the requirements as stated in *Lightning Prevention for Telecom Terminals and Its Basic Measures and Technology: YD/T993-1998*, and enhances the capability in preventing surge current based on IEEE exposure limits. Refer to Chapter 3 for details.

Models available: SH-SPD16B, 16 ports; SH-SPD8B, 8 ports

Chapter 2 Installation

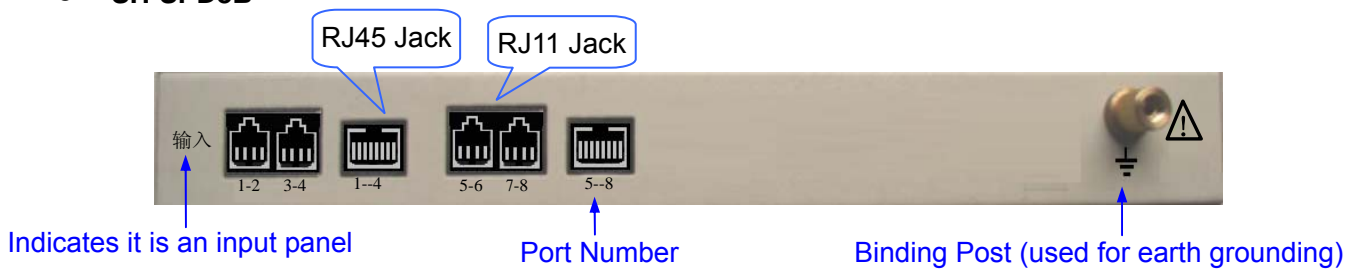
2.1 Connection Model



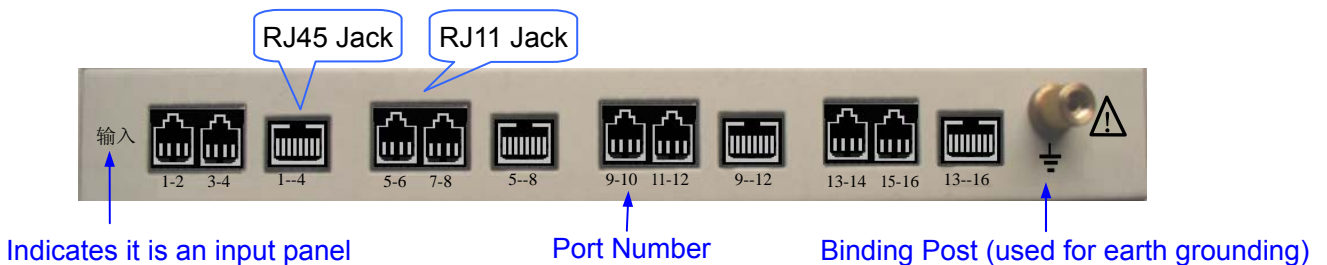
2.2 Form Factor and Interfaces

2.2.1 Input Panel (connecting to input phone lines from outdoors)

- **SH-SPD8B**



- **SH-SPD16B**



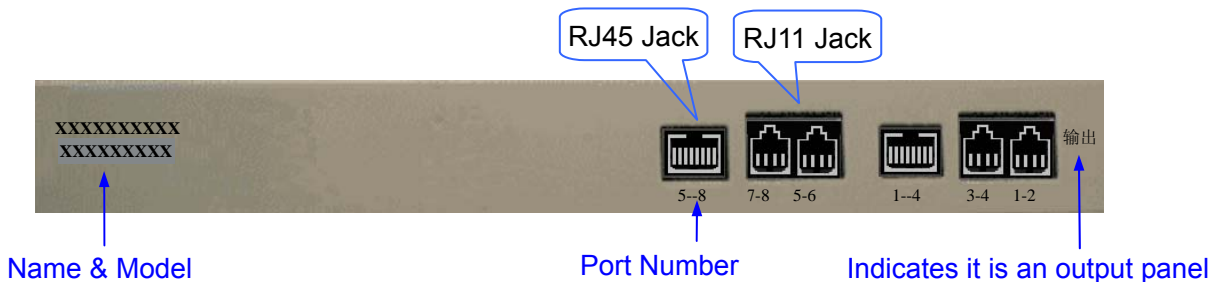
The four pins (no polarity) in each RJ11 jack connect to two phone lines: the middle two pins

correspond to an odd-numbered port (e.g. the 1st, 3rd, 5th, 7th... port), and the outer two pins to an even-numbered port (e.g. the 2nd, 4th, 6th, 8th... port).

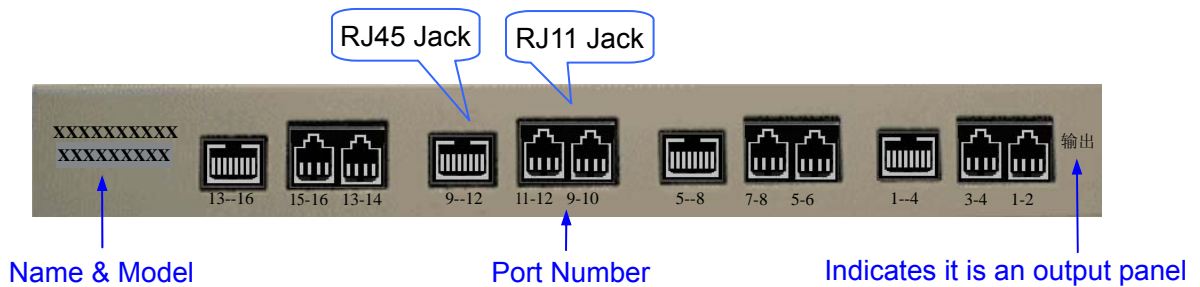
The eight pins in each RJ45 jack connect to four phone lines, each two pins from left to right corresponding to a port.

2.2.2 Output Panel (connecting to indoor devices)

- **SH-SPD8B**




- **SH-SPD16B**



The four pins (no polarity) in each RJ11 jack connect to two phone lines: the middle two pins of each RJ11 correspond to an odd-numbered port (e.g. the 1st, 3rd, 5th, 7th... port), and the outer two pins to an even-numbered port (e.g. the 2nd, 4th, 6th, 8th... port). When linking this box to the SHT –4/8B voice boards, all you need to do is use RJ11 heads with similar arrangement in their 4 pins.

The eight pins in each RJ45 jack connect to four phone lines, each two pins from left to right corresponding to a port. When linking this box to the SHT-16B voice boards, all you need to do is use RJ45 heads with similar arrangement in their 8 pins.

2.3 Precautions

- This box should only be used indoors
- Do not mix up the input and output ports.
- It is essential to safely ground (ground resistance not greater than 4 Ω) the box via the binding post (labeled by ). Usual ways of grounding include earthing at the designated earth point in the machine room or through the safety ground on the power socket. If the above

options are not available, we suggest the following ways: earthing with a mounting rack or a chassis that is properly grounded; or with a water pipe, of which one end is buried in the ground.

- Prohibited improper grounding methods: earthing with the gas pipe, the ground of a lightning rod, the metal window frame or the security window.

Chapter 3 Technical Specifications

Dimensions: 37 x 10 x 3.5 cm³

Weight: ≈0.83 kg

Environment: Operation Temperature: 0°C—50°C
Storage Temperature: 0°C—80°C
Humidity: ≤60% non-condensing

Channels: SH-SPD8B —8 ports (MAX)
SH-SPD16B —16 ports (MAX)

Input Interface: SH-SPD8B —4 RJ11 jacks and 2 RJ45 jacks
SH-SPD16B —8 RJ11 jacks and 4 RJ45 jacks

Output Interface: SH-SPD8B —4 RJ11 jacks and 2 RJ45 jacks
SH-SPD16B —8 RJ11 jacks and 4 RJ45 jacks

Lightning Resistance: Level 5

Anti-voltage Capability:

Vertical (signal line to earth): 4kV (10/700μS)
Horizontal (signal line to signal line) : 4kV (10/700μS)

Surge Current Prevention:

Vertical (signal line to earth): 10kA (8/20μS)
Horizontal (signal line to signal line) : 10kA (8/20μS)

Increased line impedance: ≤25Ω

Appendix A Technical/sales Support

Thank you for choosing Synway. Please contact us should you have any inquiry regarding our products. We shall do our best to help you.

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