



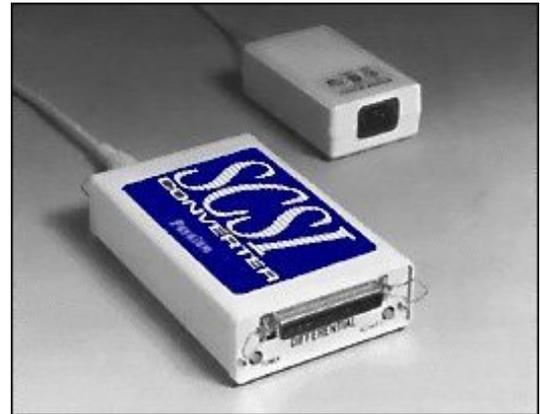
Making SCSI Work™

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## SCSI Converters and Extenders

SE-HVD SCSI converters and extenders enable you to interconnect single-ended and differential interface.

- Convert between Single-ended SCSI and HVD SCSI devices
- Both 8-bit and 16-bit Models
- Extend SCSI Bus Length



The first implementation of SCSI was single-ended. Differential (HVD) SCSI was developed for improved noise immunity, increased drive stability and the longer attainable cable lengths.

Paralan SCSI converters make communication between both types of devices possible. Hardware and software remain the same: the converter is transparent to all devices. Plug your single-ended cable into one end of the converter and the differential (HVD) cable into the other end. All SCSI devices will be available.

All Paralan SCSI Converters conform to the full SCSI ANSI standard. This includes managing the arbitration and disconnect/reconnect features of the latest systems, down to the SASI communications of earlier systems. They manage any possible signal conflicts such that they remain transparent to both HVD and single-ended devices.

SCSI converter/extender models are available for both wide (16-bit) or narrow (8-bit); and in stand-alone or board-level versions.

Paralan introduced the industry's first **Fast** (10 Mbyte/sec) single/differential (HVD) SCSI converter in 1992. These new models, using our own ASIC, are **Ultra SCSI compatible**: 20 Mbyte/sec for 8-bit (narrow) and 40 Mbyte/sec for 16-bit (wide) SCSI.

Narrow and wide devices may be placed in the same system. Call Paralan for details.

### Extend Total Cable Length

By using two converters in series an extension up to 140 feet (45 m) is obtainable. See "Operation as a SCSI Extender," below, and the [transmission length table](#) on the SCSI extension page.

### Handle Bus Noise, Termination Problems

**Auto Sense™** detects correct termination power. All models have internal terminations which may be disabled if the converter is not placed at the end of the bus.

## Operation as a Single-ended/HVD SCSI Converter

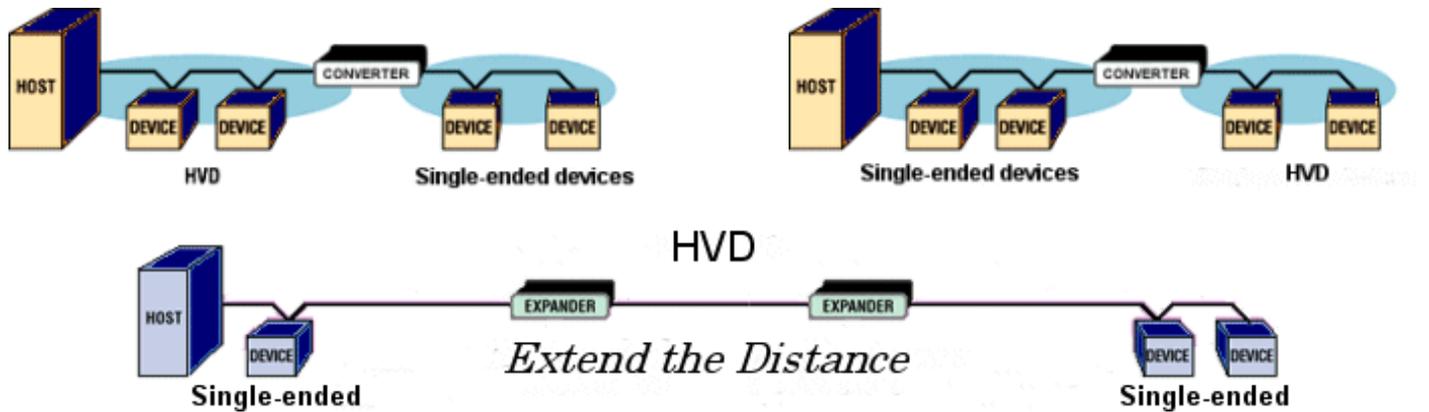
Since SCSI is a bidirectional bus, a single converter is used to interconnect single-ended SCSI IDs with HVD SCSI IDs. Place the converter within 19 feet (6 m), or 10 feet (3 m) for fast SCSI, or 5 feet (1.5 m) for Ultra SCSI, of the single-ended SCSI port. Up to 82 feet (25 m) of cable may be placed between the converter and HVD port, or 87 to 100 feet (26.5-31 m) overall. Paralan is the first to produce SCSI converters that enable the maximum SCSI cable length on both ends, even through Ultra speeds.

### SCSI Extension

**Single ended:** Two Paralan converters can extend the single-ended SCSI bus up to 200 feet (60 m). Place each converter within 19 feet (6 m), or 10 feet (3 m) for fast SCSI, or 5 feet (1.5 m) for Ultra SCSI, of the two single-ended SCSI ports. Then connect up to 120 feet (37 m) of differential SCSI cable between them.

**Differential (HVD):** Two Paralan converters can extend the HVD SCSI bus up to 174 feet (53 m). Connect up to 82 feet (25 m) of differential SCSI cable to each converter. Then connect up to 10 feet (3 m) of single-ended cable between them. For HVD SCSI extension, the **SCSI Regenerator™s** (SIR-Dx series) are usually a better choice for distances up to 280 feet (85 m).

### Examples:



[PDF version of this data sheet.](#)

### Ordering Guide:

SCSI Converter/Extenders	Stand-alone	Board-level
Narrow (8-bit) SCSI	SD10D	SD11D
Wide (16-bit) SCSI	Use <a href="#">MH16A</a>	Use <a href="#">MH17A</a>

### Specifications For SD10D/SD11D SD16B/SD17C:

#### Environmental

Relative Humidity: 0-95% non-condensing  
Operating Temperature: 0-50°C

#### Power Requirements

SD10D, SD16B: 115/220 V ac, auto select, 50-60 Hz, 10 Watts  
SD11D: +5 V dc  $\pm 5\%$  @ 1 A max.  
SD17C: +5 V dc  $\pm 5\%$  @ 1.5 A max.

#### SCSI Connections

SD10D: SCSI-2 (Alt. 2-A cable, Centronics type)  
SD11D: SCSI Alt. 1 (0.1" pitch header)  
SD16B, SD17C: SCSI-3 68-pin High-Density female "P" Connector

#### Dimensions

SD10D: 4.1"W x 6.9"D x 1.6"H (104 x 175 x 41 mm)  
SD16B: 4.1"W x 7.5"D x 2.5"H (104 x 190 x 64 mm)

**EMI/RFI**

Meets FCC Class A, CE

**Communication**

Parallel Transmission Rate  
(sustained):

SD10D, SD11D: up to 20

Mbytes/sec Ultra SCSI

SD16B, SD17C: up to 40

Mbytes/sec Ultra SCSI

Protocols: ANSI X3T10 SCSI  
standard

**Safety Approvals**

UL, CSA, TUV/VDE, CE

**Weight:** SD10D, approx. 1.5 lb.  
(0.7 kg);

shipping weight 4 lb. (1.8 kg)

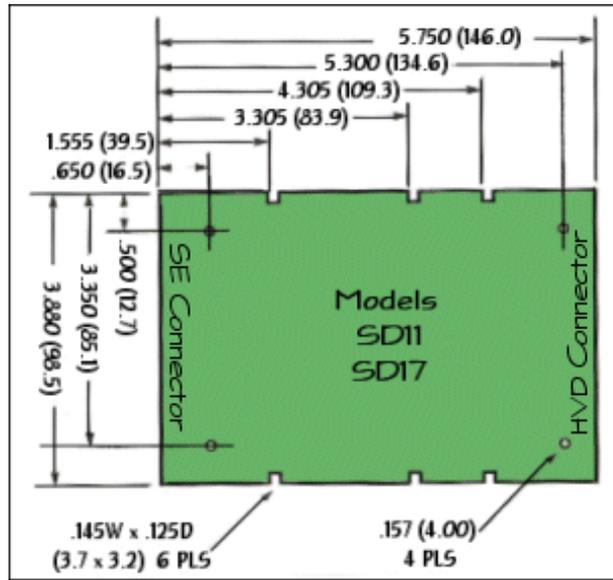
SD11D: SCSI Alt. 1 (0.1" pitch  
header)

SD16B: approx. 2 lb. (1 kg);  
shipping weight 4 lb.

**Warranty**

Two year limited warranty

SD11D, SD17C (board dimensions):  
5.750" W x 3.880"H (146.0 x 98.5 mm).



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