Power Macintosh: SCSI Termination Explained (1/96)

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TOPIC --

This article explains the differences between the internal SCSI termination on
Power Macintosh 8100 series computers and Power Macintosh 7500, 8500, and 9500
series computers.

DISCUSSION ---

Power Macintosh 8100 series and Power Macintosh 7500, 8500, and 9500 series
computers have dual-channel asynchronous SCSI interfaces, which results in two
separate SCSI buses: an internal/external SCSI bus, Bus 1, and an internal SCSI
bus, Bus 0. However, the specifications and configurations of the two buses
differ slightly.

Power Macintosh 8100 Series Computers
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Bus 1

Bus 1 consists of a 50-pin flat ribbon cable with two 50-pin connectors on the
end of the cable. The CD-ROM drive, if installed, occupies the first connector.
The second connector has a 50-pin terminator connector installed on it. To add a
second SCSI device to Bus 1, you must remove the 50-pin terminator connector and
install a terminated SCSI device.

Bus 1 has automatic termination, which means that circuitry on the logic board
senses whether or not there are any external SCSI devices attached. If there are
no external SCSI devices connected, the logic board automatically terminates
itself at the 50-pin logic board connector, thus terminating both ends of the
SCSI chain.

Once an external SCSI device is connected to the 25-pin external connector, the
circuitry senses the device and disables termination at the 50-pin logic board
connector. The computer then relies on the external SCSI device to provide the
proper termination.

Bus 0

Bus 0 is a completely separate SCSI bus with its own SCSI controller. This bus

has a 50-pin flat ribbon cable with two 50-pin connectors on it. Power Macintosh
8100 series computers ship with the internal hard drive connected to this SCSI
bus. The internal hard drive is terminated, which terminates the SCSI bus.

Unlike Bus 1, Bus 0 does not have automatic termination because it is
exclusively an internal SCSI bus. If additional devices are added to Bus 0, only
the last device should contain termination resistors.

Power Macintosh 7500, 8500, and 9500 Series Computers
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Bus 1

Unlike Bus 1 in Power Macintosh 8100 computers, there are no devices attached
internally to Bus 1 in Power Macintosh 7500, 8500, and 9500 series computers.

Bus 1 has automatic termination, which means that circuitry on the logic board
senses whether or not there are any external SCSI devices attached. If there are
no external SCSI devices connected, the logic board automatically terminates
itself at the 50-pin logic board connector, thus terminating both ends of the
SCSI chain.

Once an external SCSI device is connected to the 25-pin external connector, the
circuitry senses the device and disables termination at the 50-pin logic board
connector. The computer then relies on the external SCSI device to provide the
proper termination.

Bus 0

Bus 0 is a completely separate SCSI bus with its own SCSI controller. On Power
Macintosh 7500, 8500, and 9500 series computers, Bus 0 provides Fast SCSI
communications up to 10 MB per second.

This bus has a 50-pin flat ribbon cable with two 50-pin connectors on it. Power
Macintosh 7500, 8500, and 9500 series computers ship with the internal hard
drive and CD-ROM drive connected to this SCSI bus. The internal hard drive is
terminated, which terminates the SCSI bus.

Unlike Bus 1, Bus 0 does not have automatic termination because it is
exclusively an internal SCSI bus. If additional devices are added to Bus 0, only
the last device should contain termination resistors.

For additional information on dual-channel SCSI or Fast-SCSI in Power Macintosh
series computers, see these related Tech Info Library articles:

"Power Macintosh 7500, 8500, 9500 Series: SCSI-2 Compliance"
"Dual-Channel Asynchronous SCSI Interface: An Overview"
Specific Macintosh: Specifications

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29 Jan 1996 - Updated technical information.

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