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Macintosh Quadra 950: SCSI Support (1/97)

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TOPIC -----

This article describes SCSI support in the Macintosh Quadra 950.

DISCUSSION -----

As in the Macintosh Quadra 900, the SCSI bus in the Macintosh Quadra 950 is divided into internal and external buses, each controlled by its own identical IC -- an NCR 53C96 device. Therefore, the internal and external SCSI buses are logically connected through software, but are electrically separate. The goal of this design was to develop a combination of controller, cabling, and termination for the internal SCSI devices which permits data transfer rates approaching the NCR 53C96 controller limit of 6MB/s. The cabling and termination of the internal SCSI bus are optimized so that the 53C96 that controls the internal bus can support data transfers at a faster rate: up to 5MB/s with existing faster third-party hard drives. The improved SCSI performance will result in increased system responsiveness when accessing large amounts of data on a fast hard drive.

The internal SCSI channel also supports an active termination which improves SCSI bus signal quality and reliability through improved transmission line and terminator design. This means that only one terminator is needed at the end of the external SCSI chain. The external channel's termination also offers a more uniform impedance and cleaner termination scheme. However, because external cabling and termination are less predictable, performance on the external bus could be lower than the internal. Electrically isolating the two channels ensures that changes in external cabling and termination don't impact the performance of the internal devices.

Even though the internal and external SCSI chains are physically different, they are still logically the same, and can therefore, like all Macintosh systems, accommodate up to seven SCSI devices. You must make sure that every device has a different SCSI ID number, regardless of which SCSI chain the device is connected to. You cannot use SCSI ID 7, and SCSI ID 0 is usually reserved for the internal hard disk. The added value of the Macintosh Quadra 950 dual-controller design is that the internal hard drive(s) performance won't be affected by problematic devices (like a scanner) attached to the external SCSI connector. Improvements in signal quality on the SCSI bus results in higher SCSI reliability.

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15 Jan 1997 - Added information about SCSI ID numbers.

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