The Synclavier Company

Release 3.2 SCSI Set-up Guide
IMPORTANT - PLEASE READ CAREFULLY

With the introduction of S/LINK™, proper connectivity between the Apple Computer and host Synclavier ® or PostPro™ becomes increasingly important. S/LINK™ requires the Mac CPU and any Mac based SCSI devices to be connected directly to the Synclavier via the system SCSI bus. Therefore, it is important that the installer has at least a basic understanding of the SCSI rules governing such a configuration. Improper connection between the Mac and Synclavier can seriously affect the performance of S/LINK as well as the hardware involved.

The three most critical areas are;   *SCSI Device Addressing
            *SCSI Cable length
            *SCSI Termination

SCSI Device Addressing -

Beginning with the Synclavier Release 3.2 software, the SCSI addresses and command structure of both the ABLE 0 and the ABLE 1 CPU's have been changed to allow the co-existance of an Apple computer and other peripherals on a common SCSI bus. Since only one SCSI device can be at each of the 8 possible addresses (0 - 7), it must be understood which of these are reserved for devices that have fixed addresses, and which are available for optional devices. Table 1.1 shows the *fixed* and *available* addresses and their use.

TABLE 1.1

SCSI Address	Status
0	Available - usually used for Mac's main Drive
1	Available - used for WORM or M/O optical drives if connected
2	Available - normally spare
3	Fixed - used by DTD ABLE 1 (PostPro computer)
4	Available - used for W1: if connected
5	Fixed - used by W0: (Synclavier system drive)
6	Fixed - used by ABLE 0 (Synclavier main computer)
7	Fixed - used by Mac computer

SCSI Cable Length -

The two most important factors determining the overall performance of your SCSI bus and S/LINK are cable length and quality. The ANSI standard has set the maximum total cable length at 19.5 feet (6 metres). Much of this is used up in cabling within the devices themselves. The internal cabling length reduces the length of cable that may be used to join external SCSI devices together.

Any damage to cabling and additional connectors all compound the problem to data flow by adding additional noise, causing intermittent interupts, and can block data flow completely causing machines to 'hang'. Even cables that previously worked may now give problems due to the additional stress of heavier data flow. In particular the Mac is far more prone to SCSI problems that the Synclavier products.

Since the Synclavier models were built to user configuration the guidelines for length are quite complex. A good 'rule of thumb' guideline would be to ensure that the Mac is no further away from the Synclavier equipment than 6 feet (2 metres). This will probably mean extending the ADB bus and the Video cables so that the keyboard/trackball and the display monitor are remoted from the CPU box.

Alternatively if you have an optical drive in your control room, then remove the termination from this and connect the Mac straight into the

spare socket using a standard Mac SCSI cable.

SES note. If you are not intending to use S/LINK very often then leave this cable disconnected. Connect it when you wish to use S/LINK. This helps reduce the problems that can occur when the SCSI busses get locked up.

Also NOTE that the Synclavier changes its SCSI address through software at boot up. Therefore if it is powered on but not booted the Mac will misread the SCSI addresses and fail to boot.

Termination and Termination Power

Single ended SCSI buses (as in the Mac and Synclavier) are required to have termination present on both the originating and terminating devices in the chain. (The first and last in plain English). This termination provides a reference level and stability to the data lines in order to maintain signal clarity. Over termination can cause signal degredation. Therefore it is important for devices connected in the middle of the chain to have their termination resistor packs removed. Termination power (5 volts DC) should only be provided by a single source on the chain. If your Synclavier equipment still has the older style 34 way SCSI cabling then this termination is NOT passed on. So any devices after this must provide their own term power.

Help could be at hand

If all the above sounds like a nightmare, and you are still experiencing difficulty then there is an alternative. It is likely that any problems experienced are caused by one or more of the following, cable too long, incorrect SCSI termination, or device addressing. You may also not like the idea of putting your Mac out in the machine room with the Synclavier tower.

Device addressing can only be cured by you. If you are not sure of your Synclavier W1: SCSI id (all the others are fixed see table 1.1) then look at the configure page from the ready prompt.

If you are not sure of your Mac drive addressing (you may have a CD ROM, more than one Hard Drive etc) then run S/LINK with no connection to the Synclavier. It will scan your bus and tell you what it finds. If this fails get a SCSI probe software package from your Mac dealer.

If you have a drive in your Mac that is at the same address as any

Synclavier device (see table 1.1) then S/LINK cannot work, and nor can your Mac if connected to the Synclavier SCSI. You will have to remove a Mac drive, readdress it, or use an alternative Mac.

The other problems can often be cured by using a third party SCSI device such as the SCSI SENTRY™ from APS Technologies Inc. USA. Tel +1 816-483-6100.

Although the device is not promoted by the manufacturer as a device to create longer SCSI runs, The Synclavier Company has found that the SCSI Sentry™ can increase the length significantly. Likewise it has been successful at cleaning up temperamental SCSI busses that have been connected incorrectly and with poor quality cable, SCSI Sentry is an active unit that connects in-line with your SCSI cable and provides the buss with correct termination while continuously monitoring the data lines. This is important when increasing the cable length beyond 6 metres. Best results were achieved when the Sentry was positioned close to the Mac.

The Synclavier Company has no involment with APS Technologies and makes no guarantee regarding the performance of the SCSI sentry. SCSI is a science not a law, and as such varies widely in performance from different applications and connections. Many users manage to push the limits significantly by using good cabling, as few connectors as possible, and experimentation.

Technical Support

Please read the above carefully before asking for help. S/LINK technical support helpline is
(USA) +1 603 448 5550 - e-mail: support@synclavier.com