

Solid State Disks Ltd

SCSIFlash™ Solid State replacements for Hard Disk & Floppy Disk Drives in Applied Materials (AMAT) Tools

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Retrofit installation instructions

This document describes the procedure for installing one or more SSD modules in an Applied Materials P5000, Endura or Centura cluster tool. It is assumed that the installing engineer has some basic understanding of the operating layout of the tool and of the relevant software screens.

Before proceeding with the retrofit it is also assumed that the AMAT tool is in a safe state to remove power to the computer system. All wafers are removed from the tool, process chambers are vacuum isolated and in a safe state for power to be temporarily removed.

Requirements

Small flat bladed screwdriver.

Imperial allen key set (for P5000).

BOSS E4.8 Eprom installed on the SBC board.

Module names

SCSIFlash-DISK “SSHD” Solid State Hard Disk – replaces the standard electromechanical hard disk with a solid state version of the same capacity.

SCSIFlash-FLOPPY “SSFD” Solid State Floppy Drive – replaces the standard floppy drive with a 1.4MB capacity solid state 'disk'.

Procedure

1. Back up the hard disk

Before commencing with the retrofit it is highly recommended to back up all of the files on the original hard disk to floppy disks / CF cards.

If both the hard disk and the floppy drive are to be replaced with solid state devices then the recommended sequence is to replace first the floppy drive with the solid state module and thereafter the hard disk. This allows the use of the SSFD to copy data to and from the hard disk faster than with the mechanical floppy drive and is a good test of the SSFD.

2. Replace the floppy drive

To replace the floppy drive first power down the computer rack 5V & 12V power supplies.

Remove the floppy drive from the computer rack and remove also the power cable from the backplane.

Remove the power cable from the rear of the hard disk drive and install the power splitter cable

between the hard drive with one plug free for the floppy replacement.

Verify the SCSI address and termination settings of the floppy SSD replacement unit are correct for the application (see the table in the appendix).

Install the SSFD floppy replacement in the electronic rack, connect the open power cable plug and the SCSI bus 50 way plug and power up the computer. The software should start up from the system.run file(s) on the hard disk. When the software is started up insert a memory card into the reader slot on the floppy replacement unit, log on to the system and go to the debug terminal screen (Misc, Diagnostics, Debug)

Format the memory card. To format an SSFD card you can use the drop down menu for formatting a floppy disk, "FORMAT U2:" or manually type this command in on the command line.

You are now ready to use the floppy replacement. If you are also replacing the hard disk now is the time to make another backup of the data currently on the hard disk.

To do this using the SSFD the same number of memory cards will be required as floppy disks used in the first (floppy) backup in section 1. This is because BOSS sees the SSFD as a floppy drive and can only format the memory card size to 1.4MB, even when a larger capacity memory card is installed.

3. Replace the hard disk

Power down the computer rack 5V & 12V power supplies.

Remove the hard disk module from the computer rack.

Verify the SCSI address and termination settings of the SSHD replacement unit are correct for the application (see the table in the appendix).

Install the SSHD in the electronic rack, connect the power cable plug and the SCSI bus 50 way plug. Ensure that a memory card (or floppy disk) containing the system.run file is present in the SSFD or floppy drive (whichever is present) and power up the computer. The software should start up from the system.run file(s) on the SSFD or floppy disk. When the software is started up log on to the system and go to the debug terminal screen (Misc, Diagnostics, Debug). At the command line type in "HARDDISKFORMAT ****" where the **** may be replaced by any combination of letters or numbers. Now copy the data files backed up previously onto the SSHD.

From the floppy drive or SSFD use the command "COPY U2:*. * U0:" for each floppy disk or SSFD memory card.

Now remove the floppy disk or SSFD card from the floppy (or replacement) unit and restart the computer from the files on the SSHD (type the command "COLD" into the command line at the terminal screen.

If all has gone well the tool is now running from the SSHD. Don't forget to make regular backups!

4. Appendix – SCSI bus addresses and termination settings

Centura / Endura

	SCSI address	Termination
SSHD	06	Enabled
SSFD	01	Disabled

P5000

	SCSI address	Termination
SSHD	06	Disabled
SSFD	01	Enabled