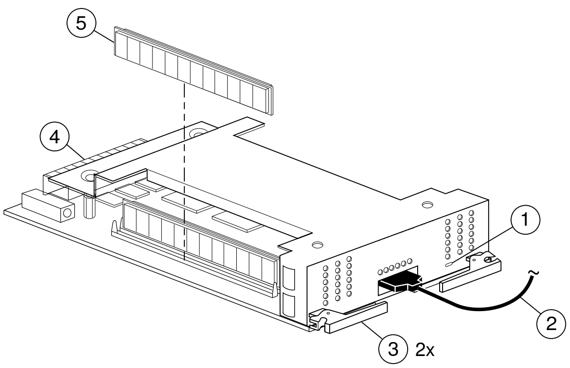
Installing an HSZ70 Cache Module

Follow these instructions to replace a cache module in a single or dual-redundant configuration. See the *HSZ70 Array Controller HSOF Version 7.0 Service Manual* for instructions on upgrading a subsystem to a dual-redundant configuration.

Figure 1. HSZ70 Cache Module



1 Cache-memory power LED
2 External cache battery (ECB) cable
3 Retaining lever
4 Backplane connector
5 SIMM

Figure 2. Location of Cache Modules

Controller A	
Controller B	
Cache A	Cache B

VHDCI Cable Precautions

All of the cables to the controller, cache module, and ECB use very-high density cable interconnect connectors (VHDCI). These connectors have extraordinarily small mating surfaces that can be adversely affected by dust and movement. Follow these precautions when you're connecting VHDCI cables:

- Clean the mating surfaces with a blast of clean air.
- Mate the connectors by hand, then tighten the retaining screws to 1.5 inch-pounds—approximately 1/4 additional turn after the connectors have fully mated.
- Test the assembly by gently pulling on the cable, which should not produce visible separation.

Dual-Redundant Configurations

To remove the cache module...

1. Connect a local terminal to the controller with the operational cache module. The controller to which you're connected is "this controller;" you're replacing the "other controller's" cache module.
2. Disable failover and take the controllers out of their dual-redundant configuration with the following command:

   SET NOFAILOVER

3. Start FRUTIL, the field-replacement utility, with the following command:

   RUN FRUTIL

4. Choose option 1 from the FRUTIL Options menu to go to the Removal Options menu.
5. Choose option 3 from the Removal Options menu to replace the "other controller's" cache module.
6. Confirm that you want to replace the cache module.
7. Disconnect the ECB cable from the cache module you're replacing.
8. Disengage the cache module's two retaining levers and remove it from the enclosure.

To install the new cache module...

1. Disable the ECB to which you're connecting the new cache module by pressing its shut off button until the status light stops blinking—about 2 seconds.
2. Connect the ECB cable to the new cache module by following the VHDCI cable precautions.
3. Indicate to FRUTIL that you're ready to insert the new cache module.
4. Wait for FRUTIL to quiesce the ports.
5. Insert the new cache module into its slot. Engage its retaining levers.
6. Wait for FRUTIL to terminate, then restart the "other

EK–70CAH–IN. A01

controller" with the following command:

RESTART OTHER_CONTROLLER

7. Re-establish the dual-redundant configuration with the following command:

   SET FAILOVER COPY=THIS_CONTROLLER

   This command copies the subsystem's configuration from the "this controller" to the "other controller."

   The ECB automatically re-enables itself to provide backup power to the cache module.

Single Configurations

To remove the failed cache module...

1. From the host console, dismount the storage units in the subsystem.
2. If the controller is operating, connect a local terminal to the controller to obtain the last failure codes if desired. Otherwise, go to step 8.
3. Start the Fault Management Utility (FMU) with the following command:

   RUN FMU

4. Display the instance and last failure codes with the following command:

   SHOW LAST_FAILURE ALL

5. Record the codes in the order they appear.
6. Exit FMU with the following command:

   EXIT

7. Shut down the controller with the following command:

   SHUTDOWN THIS_CONTROLLER

   When the controller shuts down, its reset button and the first three LEDs are lit continuously.

8. Turn off the power to the subsystem.
9. Disconnect the ECB cable from the cache module.
10. Disable the ECB by pressing its shut off button until the status light stops blinking—about 2 seconds.
11. Disengage the cache module's two retaining levers and remove it from the enclosure.

To install the new cache module...

1. Insert the new cache module into its slot and engage its retaining levers.
2. Connect the ECB cable to the new cache module.
3. Restore power to the subsystem. The controller automatically restarts and the ECB automatically re-enables itself to provide backup power to the cache module.
4. Mount the storage units on the host.