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EK–KA7AB–IN. A01

KA7AB CPU INSTALLATION CARD

Use this card as a quick reference to install the KA7AB CPU module (E2058). You may be:

- Adding a KA7AB to an existing VAX 7000 or 10000 system with KA7AB modules, or

- Upgrading from KA7AA modules to KA7AB modules.

Refer to the appropriate *System Service Manual* (EK–7002B–SV for VAX 7000 systems or EK–1002A–SV for VAX 10000 systems) for more information.

OVERVIEW

- Before turning off power, in console mode: (1) Record the current environment variables; (2) Run LFU to upgrade the system firmware.

- If you are not replacing all CPUs, you must rebuild the EEPROMs.

- Install new modules.

- Power up system.

- Make sure the firmware revision level is the same on all CPUs.

- Store information in each CPU.

**RECORD SYSTEM INFORMATION
AND UPDATE FIRMWARE**

To get a printout of the current environment variables, enter **show *** .

Before upgrading the system, run the Loadable Firmware Update (LFU) Utility to upgrade the firmware on existing modules.

1. Start LFU by booting the console CD on the InfoServer. For example,

   >>> **boot exa0** -**file ISL_LVAX_Vnn**

   where *nn* is the version number. The ISL file name must be typed in upper case.

   • Enter 3, to select Choose Service from the Function menu.

   • Enter 1, to select Find Services from the Option menu.

   • Enter the number of the service, for example, VAX7000_Vnn.

2. LFU starts, displays a summary of its commands, and issues its prompt (Function?).

3. Use the **update *** command to upgrade the firmware on all modules to the latest version.

4. Exit LFU.

BUILD EEPROMS—IF NOT REPLACING ALL CPU MODULES

Updating a CPU module with LFU requires rebuilding the EEPROM to match the format of the new firmware. Issue the **build eeprom** command to each CPU and supply the information.

```
P00>>> build EEPROM
Create new EEPROM image [Y/(N)]? y

Creating new EEPROM image
```

Use the **set cpu** command to connect the console terminal to each CPU.

```
P00>>> set cpu 1
cpu set to 1
P01>>> build EEPROM
```

The **build eeprom** command causes all settings to revert to default settings after a system reset.

## DETERMINE WHERE TO INSTALL MODULES

Determine the new configuration for modules in the LSB card cage. The number of CPUs determines where the memory will be installed. The first CPU module is installed in slot 0, and the first memory module in slot 7. CPUs are then installed in slots 1 through 3 and then in the rear in open slots with the highest node ID numbers. Memory modules are installed next to filled slots, alternating between the front and back.

Centerplane
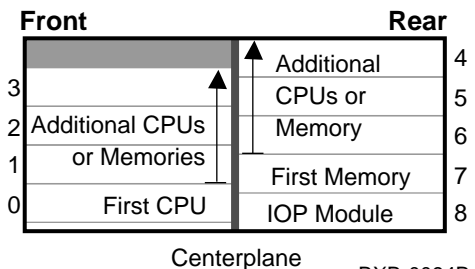
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INSTALL KA7AB CPU MODULE(S)

1. Turn the keyswitch to Disable and wait for the control panel yellow Fault LED to stop flashing. When the LED stops flashing, power has been removed from the LSB backplane and you may safely proceed.

2. Open the cabinet doors.

3. Put on an antistatic wrist strap. You must wear a wrist strap when you handle any modules.

4. Release the plate covering the LSB card cage by loosening the two screws at the top of the plate. The plate is hinged and is supported by a cable.

5. Remove the filler modules from the slots where modules will be installed.

6. On the module to be installed, pull out the two black restraining clips to the right and pull the two levers out until they are perpendicular to the front edge of the module.

7. Pick up the module to be installed. Align the bottom tracks of the module with the tracks in the card cage slot. Align the top ridge of the module with the track at the top of the card cage slot.
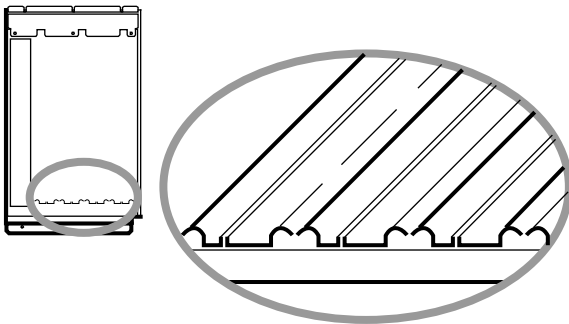
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8. Holding the module level, gently guide it into the card cage. If you encounter any resistance, check the alignment of the tracks and reinsert the module. When the module is fully inserted, the front of the module will be flush with the card cage. The module does not click when it is fully inserted.

9. Holding the two metal tabs, push both of them toward the edge of the module simultaneously. Check that the ends of the metal tabs are fitting into the guides of the cage slot.

10. Snap the black restraining clips across the levers to secure the module.

11. Check that filler modules are placed in all unused slots.

12. Close and secure the card cage cover by tightening the two screws.

13. Close the cabinet doors.

VERIFY THE SYSTEM

Power up the system by turning the keyswitch from Disable to Enable or Restart. Power sequencing begins, and the system runs self-test.

Check the self-test display to make sure that the system recognizes the new modules. One processor and one memory module were added, at nodes 1 and 6, respectively.

```
 E   D   C   B   A   9   8   7   6   5   4   3   2   1   0   NODE #
                         A   M   M   .   .   .   .   P   P   TYP   ❶
                         o   +   +   .   .   .   .   +   +   ST1
                         .   .   .   .   .   .   .   E   B   BPD
                         o   +   +   .   .   .   .   +   +   ST2
                         .   .   .   .   .   .   .   E   B   BPD
                         +   +   +   .   .   .   .   +   +   ST3
                         .   .   .   .   .   .   .   E   B   BPD

 .   .   +   .   .   .   +   .   +   .   +   .   .   +       C0  XMI +
 +   .   .   +   .   .   +   .   .   +   .   -   .   +       C1  XMI +
 .   .   .   .   .   .   .   .   .   .   .   .   .   .       C2
 .   .   .   .   .   .   .   .   .   .   .   .   .   .       C3

                         .   A1  A0  .   .   .   .   .   .   ILV
                         .128 128  .   .   .   .   .   .   256MB

Firmware Rev=V2.0-1625 SROM Rev=V2.2-0  SYS SN=AB12345678  ❷
System configuration has changed since last saved configuration!
P00>>>                                                        ❸
```

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❶ The **P** indicates that processors are at nodes 0 and 1. The **M** indicates that memory modules are at nodes 6 and 7. The + signs on the ST lines indicate that the modules passed their self-tests.

❷ This line shows the firmware revision level and serial number as stored in the EEPROM of the boot processor.

❸ After adding modules, you need to issue the **set configuration** command to save the new system configuration. If you see this message:

```
ka7ab1: firmware revision mismatch V1.0-1234
```

all CPUs are not at the same revision level. You must update the firmware so that all CPUs have the same revision level.

UPDATE CONSOLE FIRMWARE WITH UPDATE -F —IF REVISIONS NOT SAME

Use the **update -f** console command to update the FEPROMs (flash ROMs) to the version desired. If the boot processor has the console firmware version desired, you can update all CPUs at the same time.

```
P00>>> update -f ka7ab*
Update ka7ab1's FLASH ROMs [Y/(N)]? y
Updating ka7ab1's FLASH ROMs ... done
```

Answer **y** for each CPU to be updated. If you update the firmware, you must also rebuild the EEPROMs on affected CPUs.

STORE ENVIRONMENT VARIABLES IN EEPROM

1. From the primary processor issue **set <envar>** commands to restore customized environment variables.

2. For VAX 10000 systems issue **set system_ variant 1**.

STORE INFORMATION IN EACH NEW CPU

1. Use the **update -e** command to copy the environment variables from the primary processor to other CPU modules.

   ```
   P00>>> update -e ka7ab*
   Update ka7ab1's EEPROM [Y/(N)]? y
   Updating ka7ab1's EEPROM . . . . . done
   ```
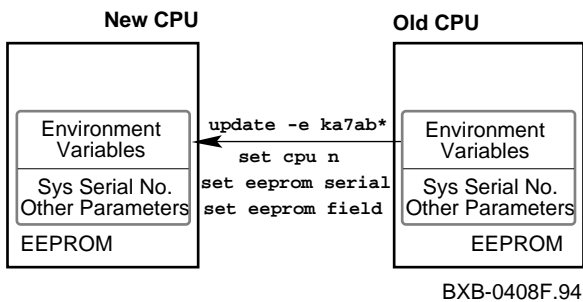
2. Use the **set cpu** command to connect the console terminal to each new CPU.

   ```
   P00>>> set cpu 1
   cpu set to 1
   P01>>>
   ```

   Do steps 3 and 4 for each new CPU.

3. Enter the system serial number, which is then stored in the EEPROM.

```
P01>>> set eeprom serial
System Serial Number> AB12345678
```


New CPU   **Old CPU**

```
update -e ka7ab*
set cpu n
set eeprom serial
set eeprom field
```

| Environment Variables |
| Sys Serial No. Other Parameters |
| EEPROM |

| Environment Variables |
| Sys Serial No. Other Parameters |
| EEPROM |

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4. Use the **set eeprom field** command to enter into the EEPROM the 8-digit LARS number and a message stating the date and reason for service.

```
P01>>> set eeprom field
LARS #> 01234567
Message>
```

───────────── **Note** ─────────────

If a CPU module fails self-test, refer to an *Advanced Troubleshooting* manual.

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