KA7AC CPU INSTALLATION CARD

Use this card as a quick reference to install the KA7AC CPU module (E2059). You may be:

- Adding a KA7AC to an existing VAX 7000 or 10000 system with KA7AC modules, or
- Upgrading from KA7AA or KA7AB modules to KA7AC modules.

Note: Do not mix modules of different models.

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. See also the *VAX 7000 Technical Bulletin Number 4* (EK–70TBA–T4).
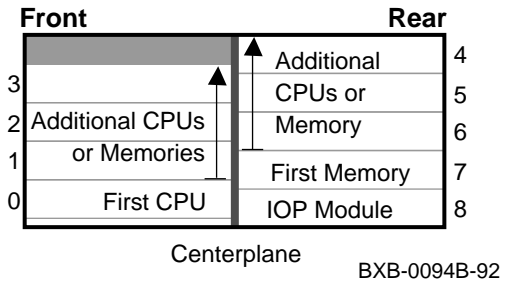
Overview

- Before turning off power, in console mode record the current environment variables.
- Determine where to install modules.
- Install KA7AC CPU module(s).
- Verify the system.
- Update firmware with LFU.
- Rebuild EEPROMs.
- Store environment variables in EEPROM.
- Store system information in each new CPU.

Record System Information

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

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.

Front		**Rear**	
3		Additional	4
2	Additional CPUs	CPUs or	5
1	or Memories	Memory	6
		First Memory	7
0	First CPU	IOP Module	8

Centerplane

BXB-0094B-92

2

Install KA7AC 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 and ground yourself to the cabinet with the antistatic wrist strap.

3. 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.

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

5. 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.

6. 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.
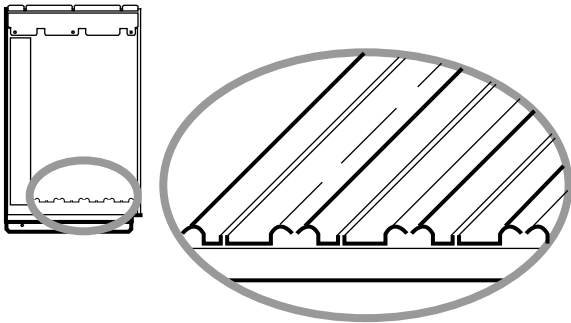
BXB-0091B-92

7. 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.

8. 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 card cage slot.

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

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

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

12. 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.

```
F  E  D  C  B  A  9  8  7  6  5  4  3  2  1  0   NODE #❶
                     A  M  M  .  .  .  .  P  P   TYP
                     o  +  +  .  .  .  .  +  +   ST1
                     .  .  .  .  .  .  .  E  B   BPD
                     o  +  +  .  .  .  .  +  +   ST2
                     .  .  .  .  .  .  .  E  B   BPD
                     +  +  +  .  .  .  .  +  +   ST3
                     .  .  .  .  .  .  .  E  B   BPD
   +  .  +  .  +  +  +  .  .  .  +  +  +  +       C0 XMI +
   +  .  +  .  +  +  +  .  .  .  +  +  +  +       C1 XMI +
   +  .  +  .  +  .  +  .  .  .  +  .  +  +       C2 XMI +
   +  .  +  .  +  .  +  .  .  .  +  +  +  +       C3 XMI +
                     .  A1 A0 .  .  .  .  .  .   ILV
                     . 128128 .  .  .  .  .  .   256MB
Firmware Rev=4.1-1234 SROM Rev=V4.0-0 SYS SN=AB12345678 ❷
System configuration has changed since last saved configuration!
P00>>> set config ❸
```

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:

```
ka7ac1: 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.

5

Update Firmware with LFU

Run the Loadable Firmware Update (LFU) Utility to upgrade the firmware on all CPU and adapter modules. CPU modules must have the same version of console code.

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

```
P00>>> 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 Funtion 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.

Rebuild EEPROMs

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 that was updated.

```
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 another 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.

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 System Information in Each New CPU

Some information must be entered in each new CPU. Use the **set cpu** command to move to each CPU.
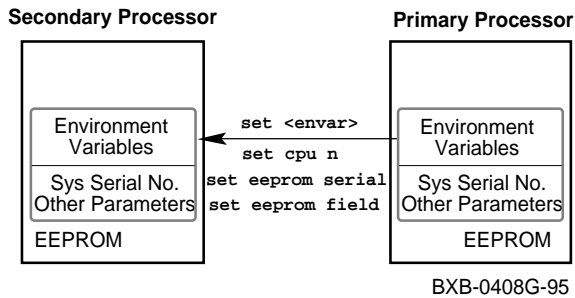
1. Use the **set cpu** command to connect the console terminal to each new CPU.

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

   Do steps 2 and 3 for each new CPU.

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

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

Secondary Processor   **Primary Processor**

```
┌──────────────────┐  set <envar>  ┌──────────────────┐
│ Environment      │◄──────────────│ Environment      │
│ Variables        │  set cpu n    │ Variables        │
│                  │               │                  │
│ Sys Serial No.   │set eeprom serial│ Sys Serial No.  │
│ Other Parameters │set eeprom field│ Other Parameters│
│                  │               │                  │
│ EEPROM           │               │ EEPROM           │
└──────────────────┘               └──────────────────┘
```

BXB-0408G-95

3. 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.*