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7000 Series Upgrade Manual

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KA7NX CPU Installation Card

EK-KA7NX.AO 1

Use this guide as a quick reference to install the KA7NX CPU module (NX2OXX). You may be:

- . Adding a KA7NX to an existing VAX 7000 or 10000 system with KA7NX modules, or
- . Upgrading from KA7AA or KA7AB or KA7AC modules to KA7NX

Note: Do NOT mix modules of different models.

Refer to the appropriate System Service Manual (EK7002B-SV for VAX7000 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 the modules.
- Install KA7NX CPU module(s).
- Verify the system.
- Store environment variables in EEPROM.
- Store systems information in each new CPU.
- Testing the upgrade.

Record System Information

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

```

PO>>show*
auto_action      HALT
baud             9600
boot_dev
boot_reset      ON
bootdef_dev
booted_dev
bootvax_compat  OFF
compat_mode     ON
cpu             0
cpu_enabled     ff
cpu_primary     ff
d dskloop       normal
d_harderr       halt
d_netloop       external
d_report        summary
d_softerr       continue
dump_dev
enable_audit    ON
interleave      default
language        36
prompt          >>>
system_varient  0
version         V4.3-4842 Aug 19 1996 15:59:21
    
```

A copy of the "show*" output will be useful later in the upgrade to restore the system's settings to the current values.

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 mode ID numbers. Memory modules are installed next to filled slots, alternating between the front and the back.

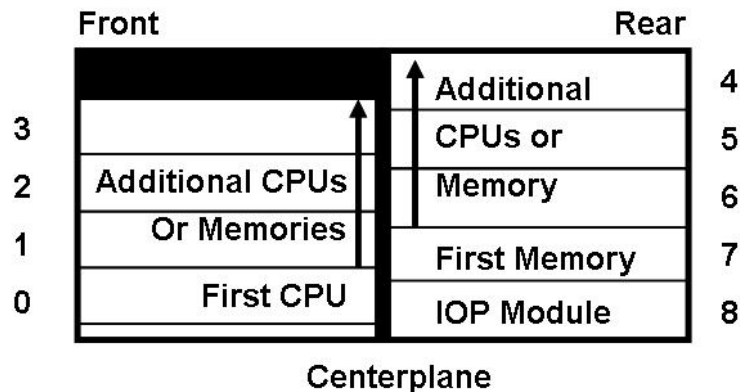


Figure 1: LSB Card Cage Layout (view from top)

Install KA7NX CPU Module(s)

1. Turn the key switch 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.



Figure 2: LSB Card Cage

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.

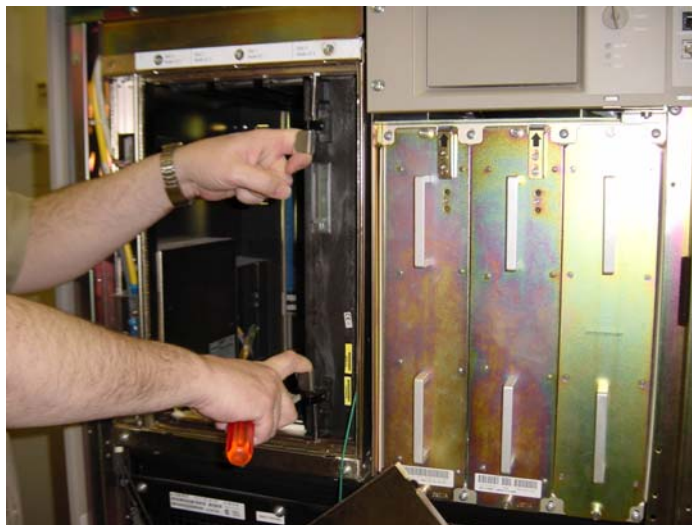


Figure 3: MS7AA Latching Levers

6. Pick up the module to be installed. Align the bottom tracks of the module with the tracks in the

card cage slot (see figure 4). Align the top ridge of the module with the track at the top of the card cage slot.

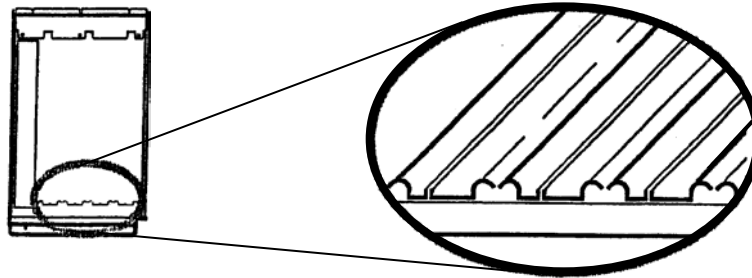


Figure 4: LSB Card Cage Slots

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 fit 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 cabinet doors.

Verify the System

Power up the system by turning the key switch 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#
							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 XMI +
	+	.	+	.	+	.	+	.	.	.	+	+	+	+		C3 XMI +
							.	A1	A0	.	.	.	.	.	.	ILV
							.	128	128	.	.	.	.	.	.	256MB

Firmware Rev=4.1-1234 SR0M Rev=V4.0-0 SYS SN=AB12345678 ❷
 System configuration ha. changed since has saved configuration

POO>>> set config ❸

1. The **P** indicates that the 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.
2. This line shows the firmware revision level and serial number as stored in the EEPROM of the boot processor.
3. After adding modules, you need to issue the **set configuration** command to save the new system configuration.

Store environment variables in EEPROM

A 'show*' at this time, will display all current customized settings.

```
>>>
>>>show*
auto_action          HALT
baud                 9600
boot_dev
boot_file
boot_osfiags
boot_reset          ON
bootdef_dev
booted_dev
booted_file
bootvax_compat      OFF
compat_mode         ON
cpu                 0
cpu_enabled         ff
cpU_primary         ff
d_harderr           halt
d_report            summary
d_softerr           continue
dump_dev
enable_audit        ON
interleave          default
language            36
prompt              >>>
stored_argc         1
storedargv0         b
system_varient      0
version             V4.3-4842 Aug19 1996 15:59:21
```

To restore the customized system parameters to what they were before the upgrade, refer to the parameters saved in the section, saving customized parameters. The "show*" display in that section should be compared with the "show*" issued before the upgrade.

In this example the value to restore is bootdef_dev,osfiags

```
Set bootdef_dev DUAO.2.0.12.0
Set boot_osfiags 0,0,0
```

Store systems information in each new CPU

If you have more than one CPU, type Update -E KA7??1.

Testing the upgrade

```
>>>show dev
```

```
polling for units on kfmsa0, slot 13, xmi0...
```

```
dua0.2.0.12.0    $1$DUA0    (HSD10)    HSX0
dua1.2.0.13.0    $1$DUA1    (HSD10)    HSX0
dua2.2.0.12.0    $1$DUA2    (HSD10)    HSX0
dua3.2.0.13.0    $1$DUA3    (HSD10)    HSX0
```

```
>>>show config
```

	Name	Type	Rev	Mnemonic
LSB				
0+	KA7AA	(8002)	0001	ka7aa0
5+	MS7AA	(4000)	0000	ms7aa0
6+	MS7AA	(4000)	0000	ms7aa0
7+	MS7AA	(4000)	0000	ms7aa0
8+	IOP	(2000)	0000	iop0
CO XMI				
1+	DEMNA	(0C03)	0904	demna0
8+	DWLMA	(102A)	020A	dwlma0
D+	KFMSA	(0810)	A4AA	kfmsa0

```
>>>
```

```
>>>
```

```
>>>test ka7aa0
```

```
Test time of 120 seconds selected
```

```
running self-test on ka7aa0
```

```
starting memory exerciser, running on ka7aa0 (id #4c2)
```

```
starting memory exerciser, running on ka7aa0 (id #4cd)
```

```
Still Testing...
```

```
Still Testing...
```

```
Still Testing...
```

```
Still Testing...
```

```
Stopping Memory exerciser, running on ka7aa0 (id #4cd)
```

```
Stopping Memory exerciser, running on ka7aa0 (id #4c2)
```

```
Done Testing...
```

System Self-Test

On power-up, the system runs and automatic self-test. Self-test results are indicated by module LEDs, the self-test display at the console terminal, and the Fault light on the control panel.

Sections in this chapter include:

- Check Module Status LEDs
- Check the Self-Test Display

Check Module Status LEDs

Check the systems module status LEDs for the self-test success. If the LEDs indicate failure, refer to the *Basic Troubleshooting* manual for more information.

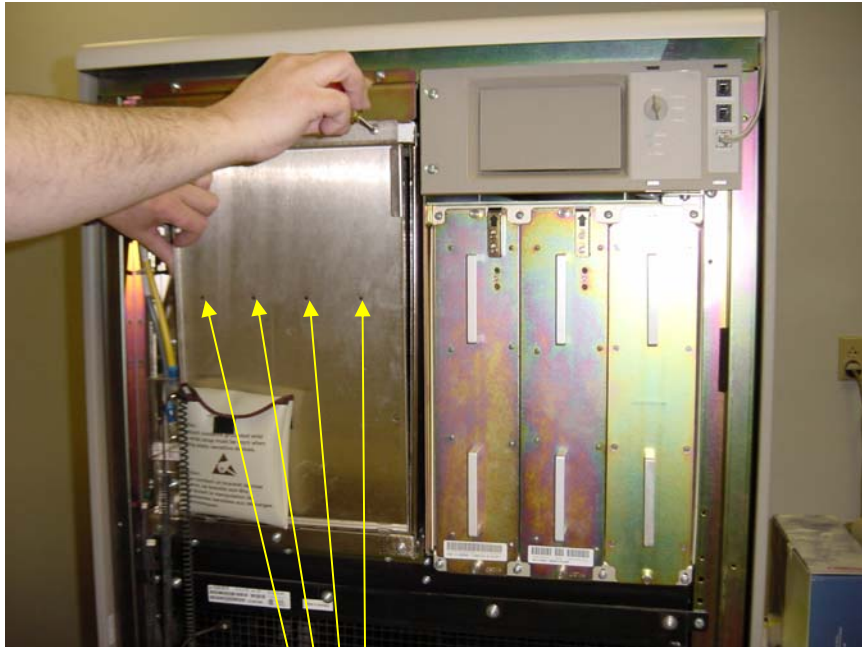


Figure 5: Self-Test LED Through-plate Viewing Locations

Processor and memory modules have a green LED that lights when the module passes or completes self-test. These LEDs can be viewed through holes in the shield of the module enclosure from the front and the rear of the cabinet when the doors are open (see figure 3).

I/O modules have a yellow LED that lights when the module passes the self-test. The I/O module LEDs can also be seen through holes in the PIU enclosure shield. The SWLMA has a yellow self-test LED and four others which after successful start-up are lit as shown in the following table:

Table 1: LEDs After Self-test

Module	Self-Test Passed	Self-Test Failed
Processor	Green ON	Green OFF
Memory	Green ON	Green OFF or ON ¹
I/O	Yellow ON	Yellow OFF
DWLMA	Yellow ON Green ON Green ON Red OFF Red OFF	Yellow OFF

¹ The Green LED on the memory module indicates that self-test completed, not passed.

Check the Self-Test Display

Self-test results are displayed on the console terminal. The pass (+) or Fail (-) status of each module is indicated.

Example: Self-Test Results

F	E	D	C	B	A	9	8	7	6	5	4	3	2	1	0	NODE#
							A	M	.	.	.	.	.	P	P	TYP
							o	+	.	.	.	.	.	+	+	ST1
							E	B	BPD
							o	+	.	.	.	.	.	+	+	ST2
							E	B	BPD
							+	+	+	+	ST3
							E	B	BPD
	+	+	+	+	C0 XMI +
	+	+	+	C1
	+	+	+	C2
	+	+	+	C3
							.	A1	.	.	.	.	.	.	.	ILV
							.	128	.	.	.	.	.	.	.	128MB

Firmware Rev=1.0-1625 SR0M Rev=V1.0-0 SYS SN=GA01234567

Troubleshooting

Nemonix™ Engineering products carry a 3 year warranty. Many clients elect to add Nemonix™ Engineering products to their existing on-site hardware service. Regardless of whether you have added the Nemonix™ Engineering product(s) to your existing contract or not, you (or your maintenance company) must contact Nemonix™ Engineering if you suspect a problem.

Important

If any errors have occurred during the Power-Up Procedure, the memory may be incorrectly installed and/or seated. Remove all memory. It is necessary to review the installation procedure to insure proper installation. Repeat the Power-Up Diagnostics. If an error still occurs, contact Nemonix™ Engineering Technical Support.

Contact Nemonix™ Engineering Technical Support

Should you suspect a problem with your Nemonix™ Engineering product, our Technical Support Department is available to assist you in your troubleshooting efforts. Technical Support Personnel are available direct Monday through Friday, excluding Holidays, between the hours of 9am and 5pm.

Technical Support can be reached by calling 1-800-435-8650. The receptionist will then connect you to a Technical Support Representative.

Contact Nemonix™ Engineering after Business Hours

Nemonix™ Engineering Technical Representatives can be reached after our normal business hours. Please call us toll free at 1-800-435-8650. You will reach the Nemonix™ Engineering Voice Messaging System. **It is important that you listen to the instructions carefully and thoroughly.**

NOTE

The Nemonix™ Engineering Customer Service Mail Box is a paging system. It is important you leave a voice message. This will ensure that a Nemonix™ Engineering Engineer will receive a page to respond to your call.

1. The Messaging System will state: If this is an emergency, please press 5. **PRESS #5.**
2. The Messaging System will state: You have reached the Customer Service Mail Box.
3. The Messaging System states: Please press 2 to leave a message. **PRESS # 2.**
4. Please leave your name, your company name and a phone number where you can be reached. Leave a brief message detailing the problem that is occurring with your system. **PRESS THE POUND (#) KEY.**
5. The Messaging System states: To confirm and save your message, please press 2. **PRESS #2.**
6. Your message has been logged. The Voice Messaging System has activated a page to the Nemonix™ Engineering Engineer on call. You will receive a call from Nemonix™ Engineering shortly.

NEMONIX™ Engineering Installation and Warranty Support Contact Information

Warranty Replacement:

In the unlikely event of a failure under the terms and conditions of the warranty, please follow the steps below.

Step One: Obtain a RETURN AUTHORIZATION (RA) NUMBER from NEMONIX™ Engineering.

Step Two: After receiving your Return Authorization Number, package the item appropriately and ship to:



56 Hudson St.
Northborough, MA 01532

ATTN: RA#

Note: Make sure you adequately insure the item being shipped

By obtaining an authorization to return a defective unit, you automatically initiate a Warranty Replacement shipment to your facility.

If you need further assistance, please contact us at:

800-435-8650
508-393-7700
Fax: 508-393-8846

E-mail: engnemonix@nemonixengineering.com

Internet : www.nemonixengineering.com