

# VAX 8200 to VAX 8350 and VAX 8250 to VAX 8350 Upgrade Procedures

For Internal Use Only



# **VAX 8200 to VAX 8350 and VAX 8250 to VAX 8350 Upgrade Procedures**

**For Internal Use Only**

1st Edition, September 1987

Copyright Digital Equipment Corporation 1987  
All Rights Reserved

The information in this document is subject to change without notice and should not be construed as a commitment by Digital Equipment Corporation. Digital Equipment Corporation assumes no responsibility for any errors that may appear in this document.

Printed in U.S.A.

#### Class A Computing Devices

Notice: This equipment generates, uses, and may emit radio frequency energy. The equipment has been type tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such radio frequency interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user at his own expense may be required to take measures to correct the interference.

The following are trademarks of Digital Equipment Corporation:

**digital**™

DEC  
DECmate  
DECset  
DECsystem-10  
DECSYSTEM-20  
DECUS

DECwriter  
DIBOL  
MASSBUS  
PDP  
P/OS  
Professional  
Rainbow  
RSTS

RSX  
Scholar  
ULTRIX  
UNIBUS  
VAX  
VMS  
VT  
Work Processor



## CONTENTS

### CHAPTER 1 INTRODUCTION

1.1	SCOPE.....	1-1
1.2	REQUIRED TOOLS AND MATERIALS.....	1-1
1.3	ELECTROSTATIC DISCHARGE PROCEDURES.....	1-1
1.4	SAFETY PRECAUTIONS.....	1-2

### CHAPTER 2 UPGRADING A VAX 8200 TO A VAX 8350

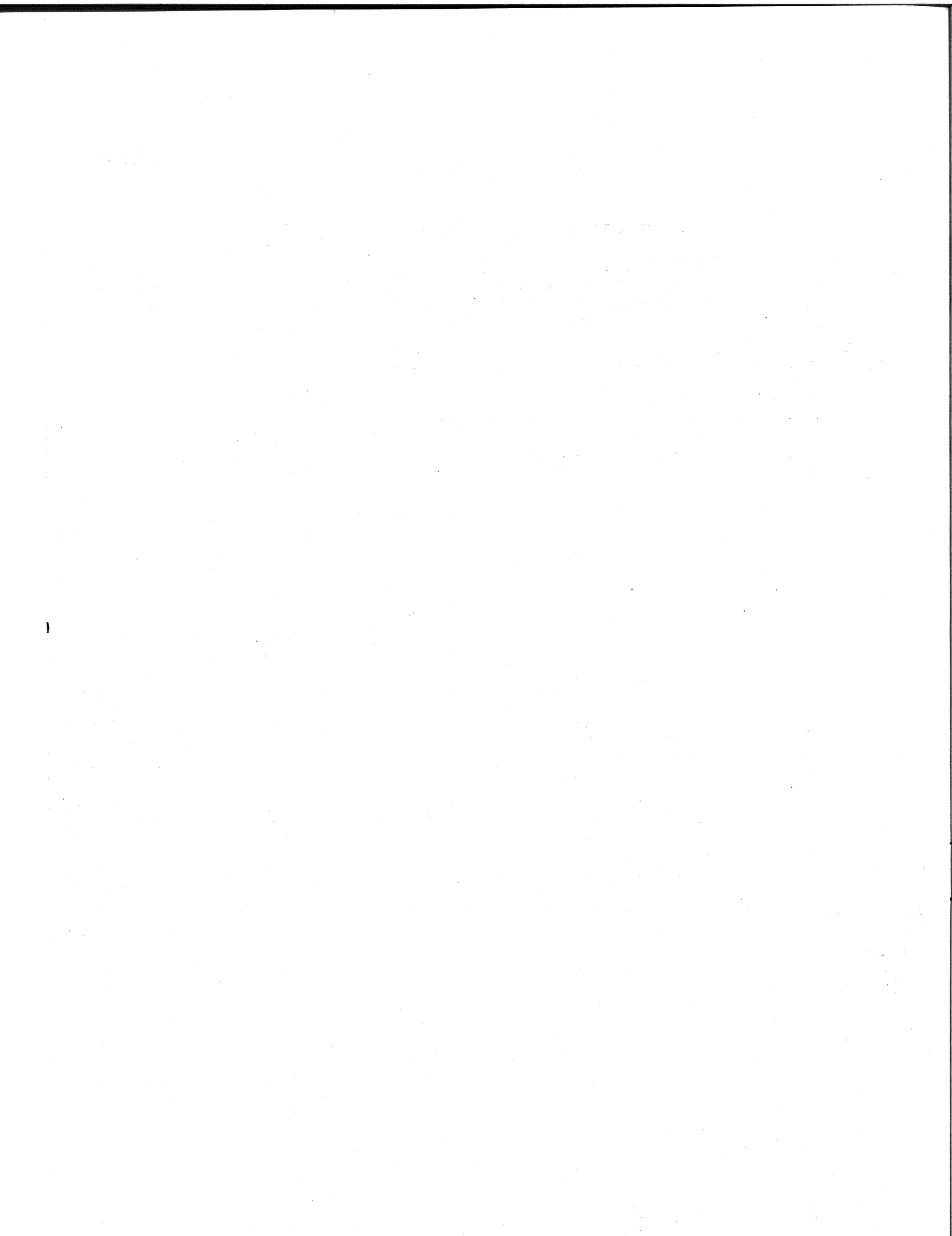
2.1	INTRODUCTION.....	2-1
2.2	UPGRADE KIT CONTENTS.....	2-1
2.3	POWERING DOWN THE SYSTEM.....	2-2
2.4	UPGRADING THE PROCESSOR.....	2-4
2.5	MODULE RETURN PROCESS.....	2-7

### CHAPTER 3 UPGRADING A VAX 8250 TO A VAX 8350

3.1	INTRODUCTION.....	3-1
3.2	UPGRADE KIT CONTENTS.....	3-1
3.3	POWERING DOWN THE SYSTEM.....	3-2
3.4	UPGRADING THE PROCESSOR.....	3-4

### APPENDIX A CARD CAGE AND MODULE CONTACT CLEANING PROCEDURE

A.1	CLEANING MATERIALS.....	A-1
A.1.1	Gold Wipes.....	A-1
A.1.2	Paddle Wipes.....	A-1
A.2	SAFETY PRECAUTIONS.....	A-2
A.3	CLEANING PROCEDURES.....	A-2
A.3.1	Cleaning the VAXBI or CPU Card Cage ZIF Connectors.....	A-2
A.3.2	Cleaning the Module Contacts.....	A-4



CHAPTER 1  
INTRODUCTION

## 1.1 SCOPE

This manual contains the procedures for upgrading:

- A VAX 8200 system to a VAX 8350 system.
- A VAX 8250 system to a VAX 8350 system.

## 1.2 REQUIRED TOOLS AND MATERIALS

The following tools and materials are required to perform the upgrades.

- Eight to ten inch Phillips head screwdriver
- Paddle wipes (P/N 12-26321-03)
- Gold wipes (P/N 49-01603-01)
- Velostat™ kit (P/N 29-26246)

## 1.3 ELECTROSTATIC DISCHARGE PROCEDURES

Modules in the systems may be damaged by electrostatic discharges. Installers handling modules should wear the static control wrist straps that are attached to the system. Also, the conductive module container should be grounded.

ESD protection is implemented via swipe grounding pads on the modules and contacts on the card cage. When the module is installed in its proper slot, the grounding pad on the module makes contact with the card cage contact and removes any ESD potential through the chassis system ground.

Velostat™ is a trademark of the Minnesota Mining and Manufacturing Co., Inc.

## For Internal Use Only

The following guidelines describe the proper method for ensuring module ESD protection.

- Do not allow any handling of the modules by persons who are not grounded to the system.
- Always use conductive containers for transporting and handling the spares and return modules.

### 1.4 SAFETY PRECAUTIONS

Observe the following safety precautions when upgrading a VAX 8200 or VAX 8250 to a VAX 8350.

- Do not extend the expander box unless the cabinet is bolted to another cabinet or the stabilizer arm is fully extended and secured.
- Only qualified personnel familiar with the safety procedures for electrical equipment and the system specifically should be allowed access to the inside of the system.
- Do not wear watches and jewelry when working inside the system cabinets. Keep fingers and conductive tools away from the high voltage areas and the high current distribution areas.
- Fuses or circuit breakers must be replaced with a DIGITAL part of the same type and current rating to prevent damage to the power system and computer area.

CHAPTER 2  
UPGRADING A VAX 8200 TO A VAX 8350

## 2.1 INTRODUCTION

This chapter includes the procedure for upgrading an installed and operational VAX 8200 system to a VAX 8350 system. The processor upgrade may include an MS820 memory and/or an RA-series disk drive option. The memory option installation procedure is included with the MS820 memory option. The disk drive option installation procedure is included with the RA-series disk drive option.

## 2.2 UPGRADE KIT CONTENTS

Table 2-1 describes the contents of the basic VAX 8200 to VAX 8350 upgrade kit (P/N 835UN).

Table 2-1 VAX 8200 to VAX 8350 Upgrade Kit (P/N 835UN)

Quantity	Part Number	Description
1	KA825-DA	KA825 processor module and VAX 8350 bezel medallions
1	KA825-AA	KA825 processor module
1	BT-Z5ACX-C3	Basic operations kit
1	36-23123-01	RDC shipping label

The 835UP upgrade kit consists of the 835UN upgrade kit and the MS820-BA memory option. The 835UR upgrade kit consists of the 835UP upgrade kit and an RA81 disk drive option.

## NOTE

The KA825 processor modules in the upgrade kit must be at revision level B1 or higher.

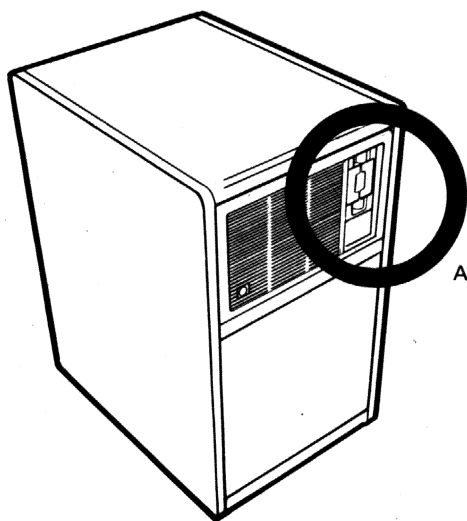
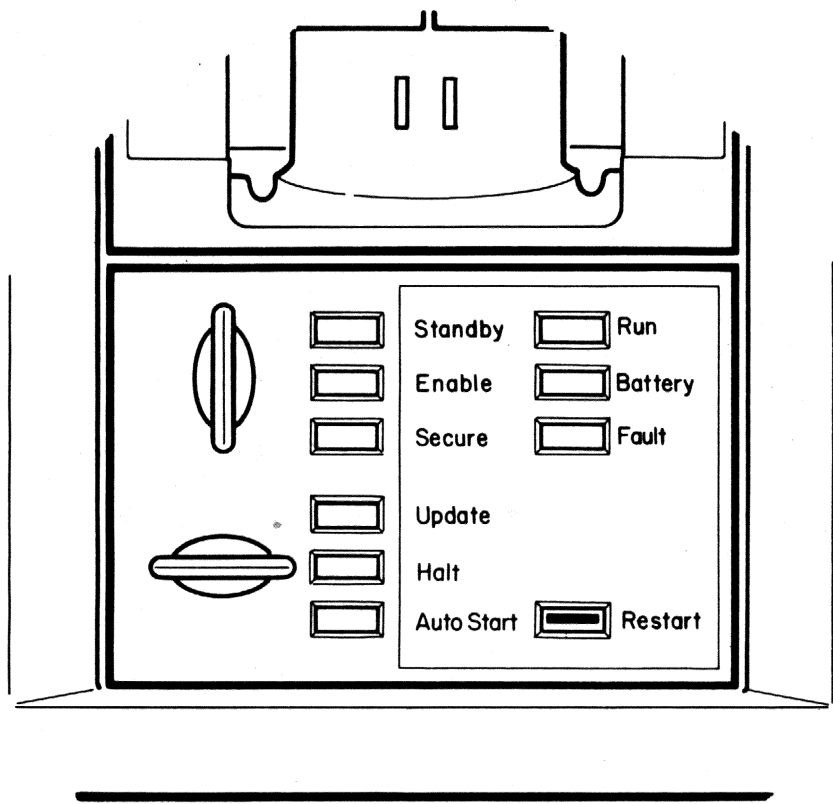
## For Internal Use Only

### 2.3 POWERING DOWN THE SYSTEM

1. Shut down the operating system.

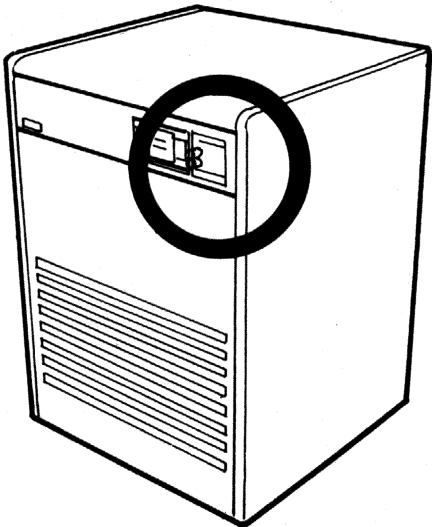
- If an operating system other than VMS is in use, use the proper shut-down procedure to bring the system to stand-alone mode.
- If the operating system is VMS, type @SYS\$SYSTEM:SHUTDOWN<RETURN> and answer all of the shut-down questions.

2. Turn the control panel top keyswitch to the ENABLE position. (Refer to Figure 2-1.)
3. Type CTRL/P at the console terminal to halt the system when indicated by the operating system.
4. Turn the control panel top keyswitch counterclockwise until it stops (OFF position) and verify that power is off. (Refer to Figure 2-1.)



AREA ENLARGED

12 VAXBI SLOT CABINET



24 VAXBI SLOT CABINET

MKV87-0357

Figure 2-1 Control Panel Switches and Indicators

T1001-YA. X2.

For Internal Use Only

03067 LOG NO.

## 2.4 UPGRADING THE PROCESSOR

1. Set up the Velostat Kit (P/N 29-26246-00) to ensure a safe environment for the highly static-sensitive modules.
2. Remove the KA820 (T1001) processor module from slot 1 of the VAXBI card cage and place the module on the Velostat mat.

### CAUTION

Before installing the KA825 processor module in the VAXBI card cage, clean the card cage slot and the module contacts. The card cage slot is cleaned using a paddle wipe; the module contacts are cleaned using a gold wipe. If you are unfamiliar with the procedures for cleaning the card cage slot and module contacts, refer to Appendix A.

3. Install one of the KA825 (T1001-YA) processor modules from the upgrade kit in slot 1 of the VAXBI card cage. ✓
4. Insert the EEPROM utility diskette into console drive one (CSA1). Match the arrow on the diskette to the orange stripe on the drive. ✓
5. Turn the control panel lower keyswitch to the HALT position. (Refer to Figure 2-1.) ✓
6. Turn the control panel upper keyswitch to the ENABLE position. Figure 2-1.) ✓
7. At the console terminal, type CTRL/P to enter console mode. ✓
8. At the console prompt type the following command:  
    >>> B CSA1<RETURN> ✓

The console responds with the prompt:

DS> ✓



For Internal Use Only

## CAUTION

For this upgrade, any version of EBUCA is sufficient. However, to update the system microcode, diagnostic EBUCA must be at version 2.4 or higher. If the microcode is updated using version 2.3 or lower, the KA825 processor module EEPROM data will be damaged.

9. Run the EBUCA program to alter the RX50 self-test enable switch and the VAXBI node number of the logical console.

- At the DS> prompt type the following command:

DS> @EBUCA<RETURN> ✓

## NOTE

The RX50 self-test enable switch and the VAXBI node number of the logical console are in the General section of the program.

- Disable the RX50 self-test. The RX50 self-test is disabled so that once the processor module in slot 1 is seated as the attached processor, it will not fail the self-test.
  - Set the node number of the logical console to 2 (the node of the primary processor). This is done to create a path for the attached processor to communicate with the primary processor.
10. Exit the EBUCA program. ✓
  11. Power down the system by turning the control panel top key switch to the OFF position. ✓

@EBUCA

CAUTION

Before installing the KA825 processor module in the VAXBI card cage, clean the card cage slot. The card cage slot is cleaned using a paddle wipe. If you are unfamiliar with the procedures for cleaning card cage slots and module contacts, refer to Appendix A.

12. Remove the KA825 (T1001-YA) from slot 1 of the VAXBI card cage, install the module in an empty VAXBI card cage slot, and record the VAXBI logical console node number. This module is now the attached processor.

CAUTION

Before installing the KA825 processor module in the VAXBI card cage, clean the card cage slot and the module contacts. The card cage slot is cleaned using a paddle wipe; the module contacts are cleaned using a gold wipe. If you are unfamiliar with the procedures for cleaning card cage slots or module contacts, refer to Appendix A.

13. Install the other KA825 (T1001-YA) from the upgrade kit in slot 1 of the VAXBI card cage. Ensure that the module is Rev B1 or higher. The system is now a VAX 8350. ✓
14. Set the control panel upper key switch to the ENABLE position. The self-tests for the processors and VAXBI nodes will run. Ensure that the self-test discovered no problems.
15. Re-load the Diagnostic Supervisor and run the system level diagnostics.
16. Update the system logo on the front bezel by removing the front bezel and popping off the plastic fastened logo from the inside out. Install the new logo and re-attach the front bezel.
17. Use the module return process in Section 2.5 to return the KA820 processor module (T1001 module).

## 2.5 MODULE RETURN PROCESS

This section contains the mandatory module return procedure for returning the KA820 processor module (T1001 module) that was replaced in the upgrade.

1. Pack the KA820 processor module in one of the conductive module containers supplied in the upgrade kit.
2. Call the local Customer Administration Services (CAS) office and give the CAS administrator the customer's DEC number.
3. Get the return authorization (RA) number from the CAS administrator. (All DEC numbers are assigned RA numbers are at the time of order.)
4. Write the RA number on the RDC shipping label (P/N 36-23123-00) and affix the label to the returns kit.
5. Inform the customer that DIGITAL will dispatch a courier to pick up the returns kit from the shipping dock within 48 hours.



CHAPTER 3  
UPGRADING A VAX 8250 TO A VAX 8350

## 3.1 INTRODUCTION

This chapter includes the procedure for upgrading an installed and operational VAX 8250 system to a VAX 8350 system. The processor upgrade may include an MS820 memory and/or an RA-series disk drive option. The memory option installation procedure is included with the MS820 memory option. The disk drive option installation procedure is included with the RA-series disk drive option.

## 3.2 UPGRADE KIT CONTENTS

Table 3-1 describes the contents of the basic VAX 8250 to VAX 8350 upgrade kit (P/N 835UA).

Table 3-1 VAX 8250 to VAX 8350 Upgrade Kit (P/N 835UA)

Quantity	Part Number	Description
1	KA825-DA	KA825 processor module and VAX 8350 bezel medallions
1	BT-Z5ACX-C3	Basic operations kit
1	36-23123-01	RDC shipping label

The 835UB upgrade kit consists of the 835UA upgrade kit and the MS820-BA memory option. The 835UC upgrade kit consists of the 835UB upgrade kit and an RA81 disk drive option.

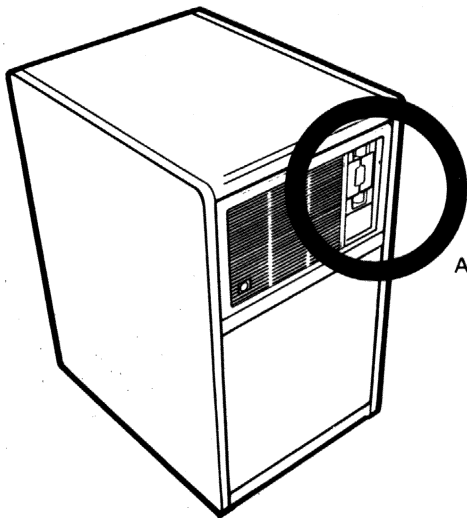
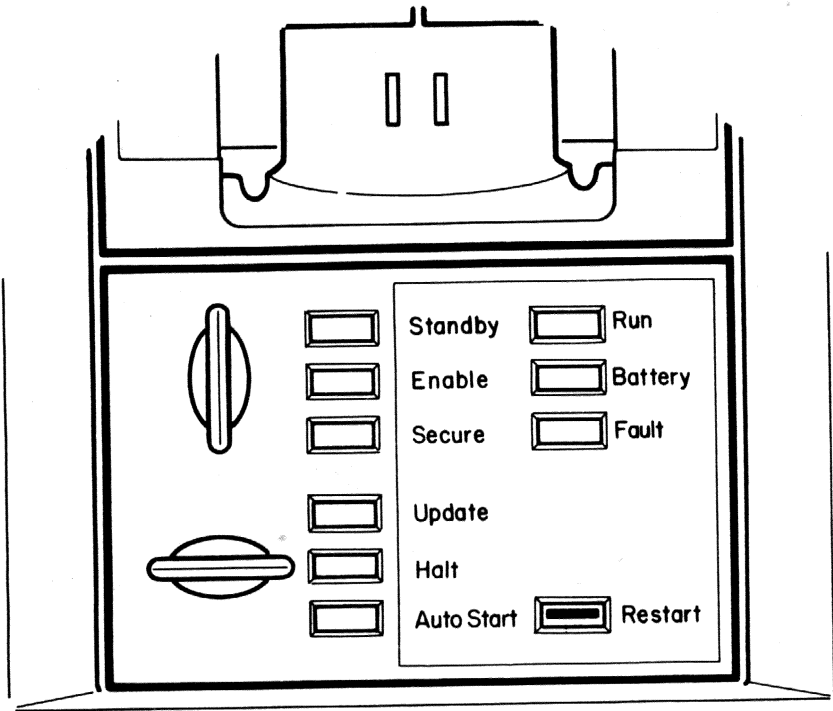
## NOTE

The KA825 processor module in the upgrade kit must be at revision level B1 or higher.

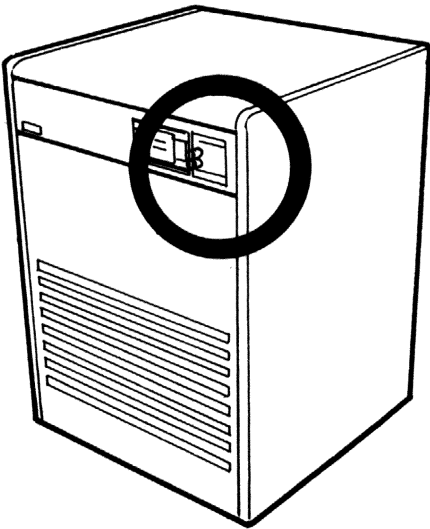
## For Internal Use Only

### 3.3 POWERING DOWN THE SYSTEM

1. Shut down the operating system.
  - If an operating system other than VMS is in use, use the proper shut-down procedure to bring the system to stand-alone mode.
  - If the operating system is VMS, type @SYS\$SYSTEM:SHUTDOWN<RETURN> and answer all of the shut-down questions.
2. Turn the control panel top keyswitch to the ENABLE position. (Refer to Figure 3-1.)
3. Type CTRL/P at the console terminal to halt the system when indicated by the operating system.
4. Turn the control panel top keyswitch counterclockwise until it stops (OFF position) and verify that power is off. (Refer to Figure 3-1.)



AREA ENLARGED



12 VAXBI SLOT CABINET

24 VAXBI SLOT CABINET

MKV87-0357

Figure 3-1 Control Panel Switches and Indicators

### 3.4 UPGRADING THE PROCESSOR

1. Set up the Velostat Kit (P/N 29-26246-00) to ensure a safe environment for the highly static-sensitive modules.
2. Remove the KA825 (T1001-YA) processor module from slot 1 of the VAXBI card cage and place the module on the Velostat mat.
3. If the revision level of the existing KA825 processor module is not B1 or higher, install FCO 82XBA-R002 before proceeding with the upgrade.

#### CAUTION

Before installing the KA825 processor module in the VAXBI card cage, clean the card cage slot and the module contacts. The card cage slot is cleaned using a paddle wipe; the module contacts are cleaned using a gold wipe. If you are unfamiliar with the procedures for cleaning the card cage slot and module contacts, refer to Appendix A.

4. Install the KA825 (T1001-YA) processor modules from the upgrade kit in slot 1 of the VAXBI card cage. ✓
5. Insert the EEPROM utility diskette into console drive one (CSA1). Match the arrow on the diskette to the orange stripe on the drive.
6. Turn the control panel lower keyswitch to the HALT position. (Refer to Figure 3-1.)
7. Turn the control panel upper keyswitch to the ENABLE position. (Refer to Figure 3-1.)
8. At the console terminal, type CTRL/P to enter console mode.
9. At the console prompt type the following command:

```
>>> B CSA1<RETURN>
```

The console responds with the prompt:

```
DS>
```



CAUTION

For this upgrade, any version of EBUCA is sufficient. However, to update the system microcode, diagnostic EBUCA must be at version 2.4 or higher. If the microcode is updated using version 2.3 or lower, the KA825 processor module EEPROM data will be damaged.

10. Run the EBUCA program to alter the RX50 self-test enable switch and the VAXBI node number of the logical console.

- At the DS> prompt type the following command:

DS> @EBUCA<RETURN>

NOTE

The RX50 self-test enable switch and the VAXBI node number of the logical console are in the General section of the program.

- Disable the RX50 self-test. The RX50 self-test is disabled so that once the processor module in slot 1 is seated as the attached processor, it will not fail the self-test.
- Set the node number of the logical console to 2 (the node of the primary processor). This is done to create a path for the attached processor to communicate with the primary processor.

11. Exit the EBUCA program.

12. Power down the system by turning the control panel top key switch counterclockwise until it stops (to the OFF position) and verify that the power is off. (Refer to Figure 3-1.)

CAUTION

Before installing the KA825 processor module in the VAXBI card cage, clean the card cage slot. The card cage slot is cleaned using a paddle wipe. If you are unfamiliar with the procedures for cleaning card cage slots and module contacts, refer to Appendix A.

13. Remove the KA825 (Tl001-YA) from slot 1 of the VAXBI card cage, install the module in an empty VAXBI card cage slot, and record the VAXBI logical console node number. This module is now the attached processor.

CAUTION

Before installing the KA825 processor module in the VAXBI card cage, clean the card cage slot and the module contacts. The card cage slot is cleaned using a paddle wipe; the module contacts are cleaned using a gold wipe. If you are unfamiliar with the procedures for cleaning card cage slots or module contacts, refer to Appendix A.

14. Install the original KA825 (Tl001-YA) in slot 1 of the VAXBI card cage. Ensure that the module is Rev B1 or higher. The system is now a VAX 8350.
15. Set the control panel upper key switch to the ENABLE position. The self-tests for the processors and VAXBI nodes will run. Ensure that the self-test discovered no problems.
16. Re-load the Diagnostic Supervisor and run the system level diagnostics.
17. Update the system logo on the front bezel by removing the front bezel and popping off the plastic fastened logo from the inside out. Install the new logo and re-attach the front bezel.

APPENDIX A  
CARD CAGE AND MODULE CONTACT CLEANING PROCEDURE

A.1 CLEANING MATERIALS

A.1.1 Gold Wipes

Gold wipes (P/N 49-01603-01) are used to clean and lubricate the contacts on modules used in backplanes having surface mount zero insertion force (ZIF) connectors. A gold wipe is a Texwipe 309 cloth which is presaturated with a solution of 111 trichlorethane solvent and 1/2% of polyphenyl ether and packaged in an airtight aluminum foil packet. The solution removes contaminants on the contacts. A lubricating film remains on the contacts to seal out atmospheric contaminants and prevent corrosion; the lubricant also prevents friction wear.

A.1.2 Paddle Wipes

A paddle wipe (P/N 12-26321-01 or 12-26321-03) is a variation of a gold wipe that is used to clean and lubricate the internal contacts on surface mount ZIF connectors. Paddle wipes consist of a 0.16 cm (0.062 in) thick G10/FR4 fiberglass material that is fitted with a gold wipe. Paddle wipes are packaged in airtight aluminum foil packets. The fiberglass material is a stiffener. The solution on the gold wipe removes contaminants on the ZIF connector contacts. The lubricating film that remains on the ZIF connector contacts seals out atmospheric contaminants and prevents corrosion; the lubricant also prevents friction wear.

Each paddle wipe is designed to clean one slot only and then be discarded. Paddle wipes are used with a reusable extractor handle (P/N 47-00116-01 or 47-00116-02). The 12-26321-01 paddle wipes and 47-00116-01 extractor handles are used to clean the VAXBI backplane (5-segment ZIF connectors). The 12-26321-03 paddle wipes and 47-0016-01 extractor handle are used to clean the CPU backplane (4-segment ZIF connectors).

## For Internal Use Only

### A.2 SAFETY PRECAUTIONS

The following precautions must be taken when using gold wipes and paddle wipes.

1. Do not use gold wipes to clean anything other than gold-plated contacts. Damage may occur to other products.
2. Do not use paddle wipes to clean anything other than surface mount ZIF connectors. Damage may occur to other products.
3. Do not smoke while using gold wipes and paddle wipes.
4. Do not expose gold wipes and paddle wipes to extreme heat.
5. Gold wipes and paddle wipes must be used in a ventilated area. There must be at least three air changes per hour.
6. Avoid contacting gold wipes and paddle wipes with skin. Wear protective nitrile gloves when handling gold wipes and paddle wipes.

#### NOTE

If latex or other gloves are used when handling gold wipes and paddle wipes, the solvent can dissolve the glove and contaminate the contacts being cleaned.

7. Wear eye protection when handling gold wipes and paddle wipes.

### A.3 CLEANING PROCEDURES

#### A.3.1 Cleaning the VAXBI or CPU Card Cage ZIF Connectors

The ZIF connectors on the VAXBI and CPU backplane are cleaned using one paddle wipe per slot. This procedure assumes all modules have been removed from the backplane. Observe ESD precautions while handling the modules.

WARNING

Do not handle gold wipes unless you are wearing nitrile gloves (P/N 29-26403) and protective goggles (P/N 29-16141 or equivalent).

1. Place a paddle wipe package in one hand with the tear strip facing up.
2. Tear the tear strip off the package and fold back the foil to expose the paddle wipe.

NOTE

Paddle wipes dry out when exposed to air. Once the package is opened, the paddle wipe must be used within three minutes or the paddle wipe will be useless.

3. While holding the paddle wipe in one hand, attach the extractor handle to the paddle wipe by inserting the spring clip over the center of the paddle and engaging the lip of the extractor into the slot of the paddle. (The slot of the paddle is visible through the wipe.)
4. Using the extractor handle, remove the paddle wipe from the foil packet.
5. Ensure that all of the ZIF connectors are in the open position. If a ZIF connector is not in the open position, open the ZIF levers or use a ZIF key lock to open the connector.
6. Place the paddle wipe in the backplane slot to be cleaned just as you would insert a module.
7. Slide the paddle wipe forward in the slot until it enters and seats in the ZIF connector.
8. Close the ZIF connectors using the ZIF connector levers.
9. With the ZIF connector closed, extract the paddle wipe from the ZIF connectors by pulling the extractor handle towards you (similar to extracting a module). The pull force on the paddle wipe should be no more than 10 pounds.

## For Internal Use Only

10. Open the ZIF connector levers and remove the paddle wipe from the card cage.
11. Place the used paddle wipe in the foil packet. Grasp the foil packet tightly and pull to remove the paddle wipe from the extractor handle. Reseal the foil packet.
12. Repeat steps 2 through 11 for each of the backplane slots.
13. Once the foil packets have been resealed, dispose of the paddle wipes in an ordinary office waste receptacle.

### A.3.2 Cleaning the Module Contacts

Each module has two sets of gold-plated contacts. One gold wipe is used to clean both sets of contacts. Observe ESD precautions while handling modules.

#### WARNING

Do not handle gold wipes unless you are wearing nitrile gloves (P/N 29-26403) and protective goggles (P/N 29-16141 or equivalent).

1. Remove the module from the protective module container or the backplane.
2. Open the gold wipe (P/N 49-01603-01).

#### NOTE

Gold wipes dry out when exposed to air. Once the package is opened, the gold wipe must be used within three minutes or the gold wipe will be useless.

3. Use the gold wipe to clean each set of module contacts. Starting at either edge of the module, make only one wiping pass over the contacts. The wiping action must be parallel to the contacts; wiping action that is perpendicular to the contacts can shred the gold wipe and contaminate the contacts.

For Internal Use Only

4. Install the module in the backplane.
5. Place the gold wipe in the foil envelope. Reseal the foil packet.
6. Repeat steps 1 through 5 for each module to be cleaned.
7. Once the foil packet is resealed, dispose of the gold wipes in an ordinary office waste receptacle.











