MICOM BOX Type 3

Dual FEATUREPAK MB3

Quick Reference Guide Stock Number 800-1594-1a

> March 1988 Revision 2 BETA

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THANK YOU FOR CHOOSING THE DUAL FEATUREPAK MB3

The Dual FEATUREPAK MB3, a member of MICOM's family of intelligent data communications products, is designed to help you get the most out of your communications lines.

This Quick Reference Guide, in turn, is designed to help you get the most out of your new Dual FEATUREPAK MB3 by giving you all of the information you need to use it effectively.

WARRANTY

MICOM provides a warranty for this Dual FEATUREPAK MB3, as described on the Warranty Page. Information about equipment repair by MICOM Customer Service is also on the Warranty Page.

PUBLICATION CHANGE REQUEST

At the end of this manual, there is a postage-paid comment form for you to use if you think of an improvement to (or find a mistake in) this manual.

NOTICE

Specifications, tolerances, and design characteristics described in this manual are subject to change without notice.

TRADEMARKS

MICOM, MICOM BOX, and FEATUREPAK are trademarks of MICOM Systems, Inc.

SAFETY WARNING

Always observe standard safety precautions during installation, operation, and maintenance of this product. To avoid the possibility of electrical shock, be sure to disconnect the power cord from the power source before you remove the power supply fuse or perform any repairs.

Warranty Page With FEATUREPAK Cartridge 1347 (TW-57)

WARRANTY

MICOM warrants that the equipment delivered shall be free from defective material and workmanship for a period of 1 year from the date of delivery of equipment when given normal, proper and intended usage, and agrees to repair or replace, without cost, any part manufactured by MICOM provided that:

- (a) MICOM is promptly notified upon discovery that the equipment is defective;
- (b) The equipment is returned prepaid to the MICOM plant from which the equipment was shipped; and
- (c) MICOM's examination of the equipment shall disclose that any defect was not caused by accident, misuse, neglect, alteration, improper installation, unauthorized repair or improper testing.

MICOM may, in its sole discretion, elect to repair or replace the equipment, in which event MICOM shall have a reasonable time to make repairs or to replace the equipment. MICOM will return the equipment freight prepaid.

THE PROVISIONS OF THIS WARRANTY ARE IN LIEU OF ANY OTHER WARRAN-TY, WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL (INCLUDING ANY WAR-RANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE), AND MICOM'S LIABILITY ARISING OUT OF THE MANUFACTURE, SALE, OR SUPPLYING OF THE EQUIPMENT OR ITS USE, WHETHER BASED UPON WARRANTY, CONTRACT, NEGLIGENCE, PRODUCTS LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE ORIGINAL COST TO THE BUYER OF THE EQUIPMENT. IN NO EVENT SHALL MICOM BE LIABLE TO THE BUYER OR ANY OTHER PERSON OR ENTITY FOR UNINTENDED OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PRO-FITS OR USE DAMAGES) ARISING OUT OF THE MANUFACTURE, SALE OR SUPPLY-ING OF THE EQUIPMENT.

MICOM warrants all repairs or upgrades performed at its factory location or performed by MICOM Customer Service for a period of 90 days after completion.

HOW TO GET YOUR EQUIPMENT REPAIRED BY MICOM CUSTOMER SERVICE

MICOM's Customer Service offers a wide range of support functions, including complete factory repair for both in-warranty and out-of-warranty equipment.

Before returning any equipment, please contact MICOM Customer Service or your local Distributor. In the U.S.A. and Canada, call MICOM's Customer Service Hotline (800) 833-3282: In all other countries, contact your local MICOM Distributor.

A Customer Service engineer will answer warranty-related questions, discuss your specific equipment problems, and — when necessary — give you shipping instructions for returning equipment to MICOM for repair. To return a product for service or repair, you *must* obtain a Return Authorization number from MICOM Customer Service.

Shipping charges must be prepaid.

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SECTION 1

GENERAL PRODUCT INFORMATION

This product is the Dual FEATUREPAK MB3. It provides efficient, cost saving features by allowing the combination of two products in a single MICOM BOX Type 3 (MB3) unit. Also, it requires only one physical connection, the X.25 trunk, for communication to an X.25 network. Although a single X.25 trunk is the primary feature of the Dual FEATUREPAK MB3, there may be special applications where it is desirable to connect each product individually to an X.25 network.

MICOM has an assortment of products that can operate in its MB3. These include an X.25 Asynchronous PAD, 3270 BSC PAD, 3270 SNA PAD, X.25 Packet Switch, 3270 BSC Protocol Converter, and 3270 SNA/SDLC Protocol Converter. Each product has firmware, which resides in a FEATUREPAK cartridge. The FEATUREPAK cartridge plugs into the MB3. Because of this software modularity, it is possible to combine two MB3 FEATUREPAK cartridges in a Dual FEATUREPAK MB3. There may be combinations you can create other than those listed in this manual.

The operation of a specific Dual FEATUREPAK MB3 is dependent upon its components. For information on the operation of a specific component, refer to the appropriate user's manual (a FEATUREPAK cartridge is always accompanied by its related manual):

Title

	SCOCK Humbe
MICOM BOX Type 3 X.25 Asynchronous PAD User's Manual	800-1387
MICOM BOX Type 3 3270 BSC PAD User's Manual	800-1391
MICOM BOX Type 3 3270 SNA TPAD User's Manual	800-1404
MICOM BOX Type 3 3270 SNA HPAD User's Manual	800-1507
MICOM BOX Type 3 X.25 Packet Switch User's Manual	800-1390
MICOM BOX Type 3 Protocol Converter User's Manual	800-1386

To configure a product in the Dual FEATUREPAK MB3, you should access the Command Facility using an asynchronous terminal. In addition, the Command Facility should be used to reset the MB3, whether for a Warm start or a Cold start reset. For instructions on these procedures, refer to the individual user's manual.

The Touch Panel may also be used for configuring the modules or for Warm or Cold start resets of the Dual FEATUREPAK MB3 (see the following CAUTION). However, be aware that using the Touch Panel for configuration affects both products simultaneously. Refer to the specific user's manual for instructions.

Stock Number

CAUTION: If you must use the Touch Panel to perform a Cold start reset, make sure you remove the FEATUREPAK cartridge that you are not Cold starting. Otherwise you will lose the software configuration of that module.

1.1 ORDERING THE DUAL FEATUREPAK MB3

To order the Dual FEATUREPAK MB3 you must specify the hardware and software model numbers. The hardware model numbers are created by selecting items from a matrix (see figure 1-1). For example, MB3111-14 denotes a MICOM BOX Type 3, having a power supply of 115 V ac, using an RS-232-C trunk cable that connects to a DCE device, and housing two base modules and one expansion module.

The Dual FEATUREPAK MB3 comes with all the necessary cables. Refer to specific user's manuals for cabling instructions.

Additional interface daughterboards and related cables may be ordered in kits from MICOM. For model numbers and installation information, refer to the daughterboard upgrade kits listed in the appropriate user's manual.

1.2 ORDERING THE FEATUREPAK CARTRIDGES

Table 1-1 contains a list of possible product combinations for the Dual FEATUREPAK MB3. These products can be connected with the Relay Link, resulting in a single composite link from the MB3. Other product combinations not listed would require two composite links from the MB3.

The first product in each combination refers to the product that is installed in the bottom base module slot. The second product is installed in the top base module slot. An optional expansion module for the second product may be installed above the top base module slot.

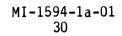


Figure 1-1. Model Numbers for the Dual FEATUREPAK MB3

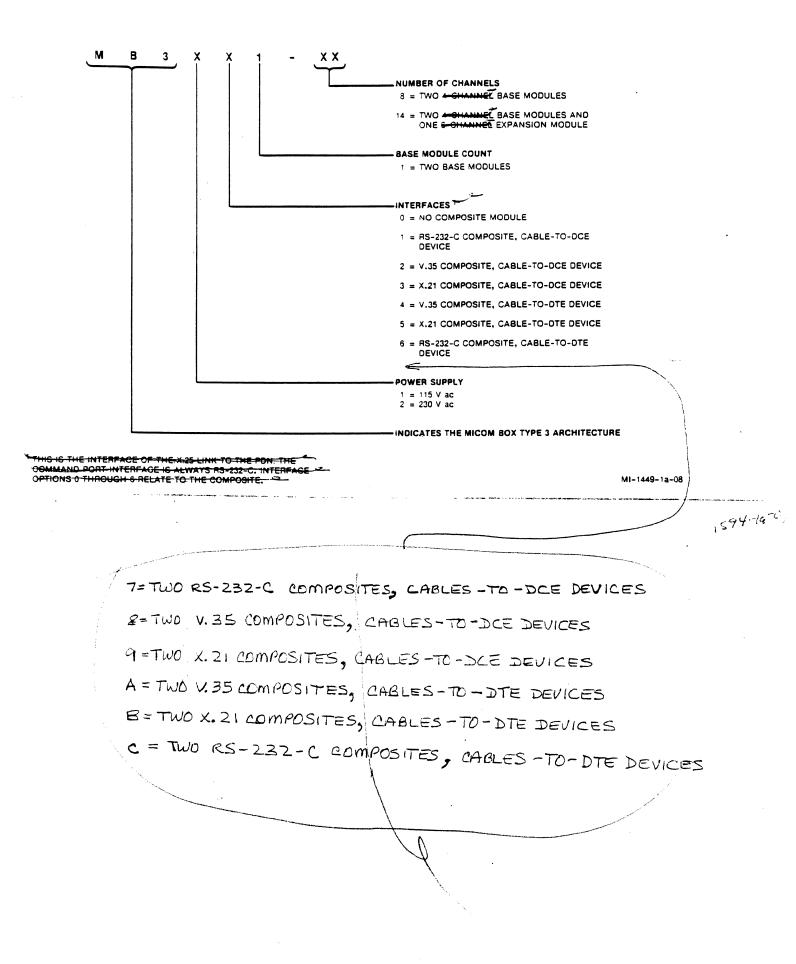
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Table 1-1. Dual FEATUREPAK MB3 Model Numbers

Bottom Base Module	Top Base Module
MB3-BSC-STD	MB3-XAP
MB3-SNA-TPAD	MB3-XAP
MB3-SNA-HPAD	MB3-XAP
MB3-XAP	MB3-XAP
MB3-XAP	MB3-PSW
MB3-BSC-STD	MB3-PSW-STD or MB3-PSW-HS
MB3-SNA-TPAD	MB3-PSW-STD or MB3-PSW-HS
MB3-SNA-HPAD	MB3-PSW-STD or MB3-PSW-HS
MB3-PSW-STD or MB3-PSW-HS	MB3-XAP
MB3-PSW-STD or MB3-PSW-HS	MB3-PSW-STD or MB3-PSW-HS
MB3-BSC-STD	MB3-BPC
MB3-SNA-TPAD	MB3-SPC

Legend:

MB3-XAP	=	asynchronous PAD
MB3-BSC-STD	=	3270 BSC PAD
MB3-SNA-TPAD	=	3270 SNA TPAD
MB3-SNA-HPAD	=	3270 SNA HPAD
MB3-PSW-STD	=	standard X.25 Packet Switch
MB3-PSW-HS	=	high-speed X.25 Packet Switch
MB3-BPC		3270 BSC Protocol Converter
MB3-SPC		3270 SNA Protocol Converter



1.3 MAJOR COMPONENTS

The Dual FEATUREPAK MB3's major components are as follows:

- Modules
- Enclosure: base, cover, front panel, back)
- Touch Panel
- Indicators
- FEATUREPAK cartridges
- Power supply

1.3.1 Modules

The modules are circuit boards that contain the logic and support circuitry necessary for operation.

The Dual FEATUREPAK MB3 is designed to accommodate two base modules and one expansion module. The expansion module is always housed in the top module slot.

Locations of the modules and other major components of the Dual FEATUREPAK MB3 are illustrated in figure 1-2. For descriptions of the modules in your application, refer to the appropriate user's manual.

1.3.2 Enclosure

The enclosure consists of a base, a cover, a front panel, and the back (see figure 1-2). The base, which interlocks with the cover, holds the major components. The movable, translucent front panel swings open for access to the inside of the unit. It is easily removable by opening it all the way, then gently pushing in the hinges while lifting the panel. The back consists of interlocking panels that are attached to the modules, and a blank filler panel that completes the back. A second blank panel is installed above the modules when an expansion module is not in place.

1.3.3 Touch Panel

The Touch Panel is located behind the front panel (see figure 1-2). The membrane surface of the panel is sectioned into 24 keys.

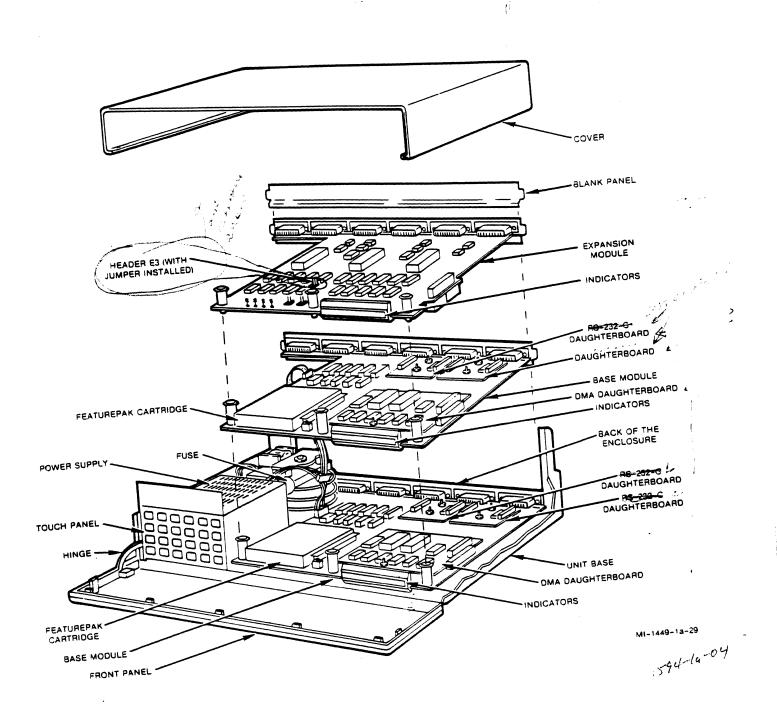
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Figure 1-2. Locations of the Major Components in the MB3

1.3.4 Indicators

The indicators are also located behind the front panel (see figure 1-2) and are labeled with their abbreviated names. They display the operating status of the unit.

When the unit is plugged into a power outlet, some indicators will go ON and will be visible through the front panel.



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1.3.5 FEATUREPAK Cartridges

CAUTION: To avoid possible damage to a module from static discharge, be sure to touch the unit's metal enclosure before touching a FEATUREPAK cartridge.

The FEATUREPAK cartridges are inserted into openings behind the front panel (see figure 1-2). They contain the system software. Refer to paragraph 1.2 for a list of the FEATUREPAK cartridges available for the Dual FEATUREPAK MB3.

CAUTION: During shipping and handling, the FEATUREPAK cartridge should always be stored in its anti-static bag in its accessory-box compartment and not kept in the unit.

1.3.6 Power Supply

A multi-output ac power supply is installed prior to shipment (see figure 1-2). The input voltage can be set for either 115 V ac/60 Hz or 230 V ac/50 Hz operation. Output voltages are +5, +12, and -12 V dc.

Prior to shipment, the power supply is set for the voltage specified in the model number (see figure 1-1), and an appropriate fuse is installed.

1.4 PHYSICAL SPECIFICATIONS

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<u>Operating</u> Environment	32 to 114°F (O to 45°C) O to 95 percent relative humidity (noncondensing)
Power	115 V ac +10 percent, 60 Hz 230 V ac <u>+</u> 10 percent, 50 Hz
Size	Standalone:
	15-1/2 inches (39.4 cm) wide 4-1/2 inches (11.4 cm) high 11-3/4 inches (29.8 cm) deep Weight: 8 pounds (3.6 kg)
	Rack-Mounted with Upgrade Kit MB-RMK-1:
	19 inches (48.3 cm) wide 5-1/4 inches (13.3 cm) high 11-1/2 inches (29.2 cm) deep
<u>Storage</u> Temperature	-40 to 158°F (-40 to 70°C)
Emissions Control	Complies with FCC Part 15, Subpart J, Class A, for control of radio-frequency interference.
<u>Status</u> Displays	Each base module has 12 indicators. An expansion module has six indicators.
<u>Lithium</u> Battery	Located on the base module, the battery supplies power to CMOS RAM. If the unit is not in operation, the battery has an accumulated power- down life of two years.

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SECTION 2

INSTALLATION

This section provides the experienced communications technician with the information needed to install the Dual FEATUREPAK MB3.

CAUTION: Be sure to save the shipping materials. If instructed by MICOM Customer Service to return a defective unit for servicing, the unit should be packed in its original shipping materials or equivalent packing materials.

> Figure 2-1 provides a checklist for use in the setup of your unit. Be sure to perform the procedures listed before operating your unit.

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Figure 2-1. Setup Checklist

2.1 SELECTING THE INSTALLATION LOCATION

The unit has specific size, ventilation, and cabling requirements. The following list contains information that will guide you in your selection of a location:

- Take into account the size of the enclosure (including the space needed for the rear connectors): 15-1/2 inches (39.4 cm) wide, 4-1/2 inches (11.4 cm) high, and 14 inches (35.6 cm) deep.
- The air vents on the bottom of the enclosure must always be kept clear of obstructions. Do not place the unit on paper or on any material that can be moved by suction; it could seal off the intake vent.
- All cables that are used to connect terminals and external modems to the unit must be shielded and cannot be longer than 50 feet (15.2 meters).
- External cables must be disconnected from the rear connectors before removal of an expansion module is attempted.
- The distance from the back of the enclosure to the ac power supply wall outlet should not exceed 6 feet (1.8 meters).

2.2 ACCESSING THE INTERIOR OF THE ENCLOSURE

Before accessing the interior components of the enclosure, you must first unplug the power cord from the wall outlet.

To open the unit, release the four locking clips on the sides of the enclosure using the MICOM User Key that is provided with the equipment. (A flat-head screwdriver with a 1/4-inch blade may also be used.) Insert the User Key blade not more than halfway into one of the slots on the base (see figure 2-2). Pry the cover up to release the clip. Repeat this procedure for each of the remaining three slots to release their clips. Lift the cover off when all four clips are released.

To close the unit, identify the front of the cover (see the stamp on the underside of the cover). Place the cover over the base, aligning the front of the cover with the front of the base. Align the four slots in the cover edges with the tabs on the base edges (see figure 2-2). Press the cover down over the alignment tabs. The locking clips will lock the cover in place.

 Unpack the unit. Be sure to save the packing materials. Inspect the unit for physical damage. Report any damage immediately to MICOM Customer Service.
2. Install the FEATUREPAK cartridges.
(This turns the power ON.)
4. Cold start the unit. (This sets CMOS to the factory defaults.)
5. Verify the soft switch settings. In particular, ensure that SYS3 Value 3 is ON. Where complicatly unify that Duck FEATUREPAK MB3 Operation
6. Attach all devices and cables. is set to DN.
7. Configure the PADS." Devices.
8. Warm start the unit.
The unit is ready for operation.

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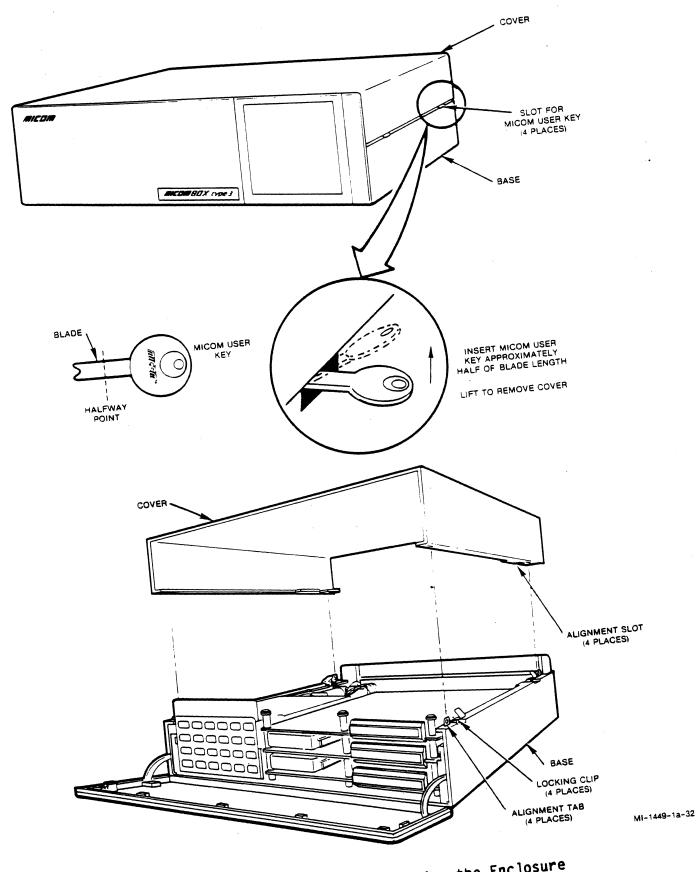


Figure 2-2. Opening and Closing the Enclosure

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Figure 2-2. Opening and Closing the Enclosure

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2.3 APPLYING THE INDICATOR STRIPS TO THE DEVICE MODULES

The indicator strips for each module accompany the FEATUREPAK cartridges. The base module indicator strips show channel or link numbers and status indicators. The expansion module indicator strip shows only channel/link numbers. Each strip has an adhesive backing.

NOTE: The unit is shipped with indicator strips already applied. Remove these indicator strips before applying the appropriate strips for your application.

- 2.4 INSTALLING AND REMOVING AN EXPANSION MODULE
- CAUTION: To avoid possible damage to a module from static discharge, be sure to touch the unit's metal enclosure before installing or removing an expansion module.

To install or remove an expansion module, you need to open the unit (refer to paragraph 2.2).

To install an expansion module:

1. Remove the blank filler panels.

There are two blank filler panels installed above the base modules at the back of the unit. Remove the filler panels by lifting them out of the side guides.

2. Verify the installation of the jumper for channel selection.

If you have an expansion module, verify that the jumper is installed on the E3 header of the expansion module.

3. Install the optional expansion module (see figure 2-3).

A panel is attached to the back of the expansion module. Slide the panel into the side guides until it couples with the panel below.

Installing an expansion module requires the use of stacking connectors (refer to step 4).

4. Connect the stacking connectors.

A stacking connector has two parts: a shroud and a block. The shroud is on the bottom of the module being installed and fits over the block on the module below. As you slide in the back panel, align the shroud and the block. Then press the two together until the connector is completely coupled.

5. Secure the front of the module.

In the front, the modules snap together using three standoffs. Place the standoffs (on the bottom of the module being installed) over the standoffs that are on the module below. Place the MICOM User Key over the standoff, so that the top of the standoff fits into the depression in the handle of the key. Press down on each standoff until it snaps together (see figure 2-3).

6. Secure the back of the module.

Slide the smaller of the two blank filler panels removed in step 1 into the side guides until it couples with the panel below.

7. Connect the external cables.

Refer to the appropriate user's manual for information on connecting the external cables.

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Figure 2-3. Expansion Module Installation and Removal

To remove an expansion module:

- 1. Disconnect the external cables from the back connectors.
- Remove the blank filler panel from the back of the unit by lifting it out of the side guides.
- 3. Separate the three standoffs from the module using the MICOM User Key or a flat-head screwdriver with a 1/4-inch blade (refer to the CAUTION that follows). Firmly insert the User Key between the module edge and the standoff below. A fully inserted key will cause the module to unsnap (see figure 2-3). When the key is properly inserted, twist the key to one side to separate the module from the standoff. Repeat this procedure for each standoff.
- CAUTION: If you use a screwdriver instead of the MICOM User Key, be careful to avoid scratching or gouging the underside of the module.
 - 4. Pull apart the stacking connectors between the two modules.
 - Remove the module by lifting the back panel out of the side guides.

2.5 INSTALLING AND REMOVING THE FEATUREPAK CARTRIDGES

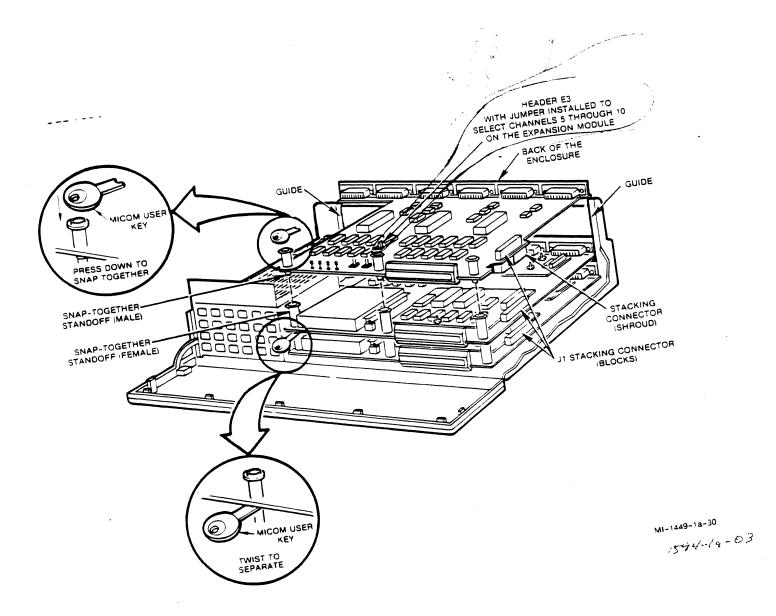
The receptacles for the FEATUREPAK cartridges are located behind the front panel (see figure 2-4). To access the receptacles, pull the top edge of the panel out and down.

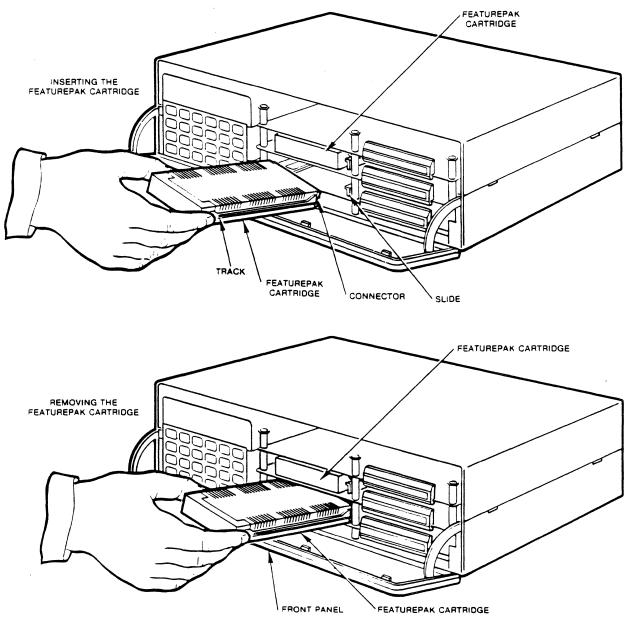
CAUTION: To avoid possible damage to a module from static discharge, be sure to touch the unit's metal enclosure before touching a FEATUREPAK cartridge.

To install, insert the FEATUREPAK cartridge for the middle base module into its receptacle, with the connector pins going in first. Tracks on the cartridge will mesh with slides inside the unit. The cartridge will slide in easily until the connector pins meet the unit's internal socket. Then, with a fair amount of pressure, push the cartridge so that the pins of the connector feel firmly seated. This will ensure the proper connection of the cartridge.

Repeat this procedure to install the FEATUREPAK cartridge for the bottom base module.

To remove, grip the middle FEATUREPAK cartridge firmly on the sides and pull with a fair amount of force to dislodge the connector. Pull the cartridge along the slides until it is free of the unit.





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Figure 2-4. FEATUREPAK Cartridge Installation and Removal

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Repeat this procedure to remove the bottom FEATUREPAK cartridge, lifting the cartridge over the edge of the front panel.

CAUTION: During shipping and handling, the FEATUREPAK cartridge should always be stored in its anti-static bag in its accessory-box compartment and not kept in the unit. ...

2.6 INSTALLING THE DUAL FEATUREPAK MB3

The Dual FEATUREPAK MB3 can be installed either as a standalone or as a rack-mount unit.

The standalone unit is placed on a tabletop or shelf. Allow enough space for cover removal, handling of the back panel connectors, opening the front panel, and unobstructed air flow (refer to paragraph 2.1).

For a rack-mount installation, use a standalone unit with an optional Rack-Mount Upgrade Kit MB-RMK-1 (see figure 2-5). Mount the standalone unit in a standard 19-inch-wide rack, using the kit. Installation instructions are included with the kit.

2.7 SYSTEM CABLING

System connections are normally made using MICOM cables. If non-MICOM cables are used, they must be shielded and must not be longer than 50 feet (15.2 meters).

NOTE: The MB3 requires the use of shielding and shielded cables in order to maintain compliance with the Federal Communications Commission's Rules and Regulations Part 15 Subpart J. If you do not use shielded cables with the MB3, one of the following filtered connectors must be used at the termination of the shield for each unshielded cable connected to this MB3. MICOM SYSTEMS INC. P/N 340-1512-001, AMP INC. P/N 842932-1, SPECTRUM CONTROL INC. P/N 56-725-003.

For information on individual cables and their connections, refer to the appropriate user's manual.

CAUTION: To prevent errors caused by induced noise, do not operate the unit with open-ended cables connected to the channel interface connectors. Either remove the open-ended cables or connect them to devices.

2.7.1 Relay Link

The Relay Link cable is a short (1-foot) Straight cable, MICOM part number 100-2200-01, and is provided with the unit.

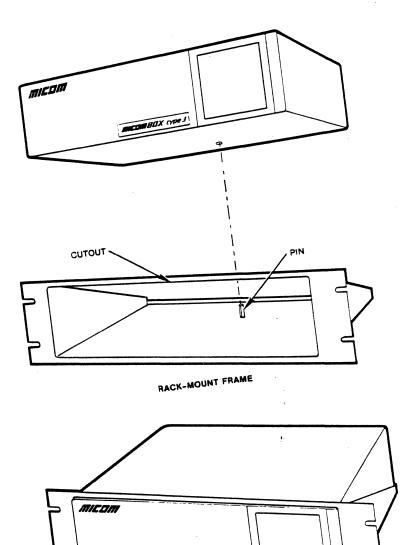
The two products housed in the Dual FEATUREPAK MB3 can be connected by the Relay Link. It connects the composite of one product to a link or channel of the second product, which is the one supplying the trunk to the X.25 network.

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Figure 2-5. Rack-Mount Installation

2.7.2 Power Supply Connection

Using the MICOM power cord, plug its female connector into the ac power connector on the back panel. Plug the connector on the other end of the cord into the ac power supply wall outlet. Some indicators on the devices will go ON. Refer to the individual user's manuals for descriptions of the normal display state of the indicators.



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ASSEMBLED UNIT

MCDWBOX (VDe 3

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