ABOUT THIS SECTION

This section describes the testing and board replacement procedures for the Product. To facilitate a random rather than a sequential approach to the test, some information has been repeated. Begin with the preparation for test and reset button test and proceed through to the end, or select one specific test for an identified problem. The preparation for test segment must be performed in either case. Board replacement procedures and calibration information follow the test section.

The preparation for test is broken into the following segments:

Preparation Description

This segment describes the preparation and lists circuit areas, functions, or components that are tested.

Preparation Steps

This segment lists the preparation steps. The following example describes preparation step activities:

1. Connect a peripheral device.
2. Push a key.
3. Scan a bar code.

Expected Results

This segment describes the results required for the Product to successfully complete the preparation step performed.

Corrections for Preparation Failed

This segment lists probable solutions to the problem.

These solutions are not listed in any order or priority; select the simplest solution first.

This section is not intended to be a complete troubleshooting guide.

Each functional test is broken into the following segments:

Test Description

This segment describes the test and lists circuit areas, functions, or components that are tested.

Test Steps

This segment lists the test steps. The following example describes test step activities:

1. Connect a peripheral device.

2. Push a key.

3. Scan a bar code.

Expected Results

This segment describes the results required for the Product to successfully complete the preparation step performed.

Corrections for Preparation Failed

This segment lists probable solutions to the problem.

These solutions are not listed in any order or priority; select the simplest solution first.

This section is not intended to be a complete troubleshooting guide.

EXAMPLE:
Test the batteries before testing the fuse. The battery pack is easily removed for testing; however, the Product must be disassembled to test the fuse.

DIAGNOSTICS

Preparation for Test

Preparation Description

Clear any program, remove the battery pack, and remove the applications EPROM. Reset the Product and return it to the default configuration. The following components are tested:

Processor, bus, and reset circuits

Processor communication with the display

[on-off] key correctly initiating the reset circuit

Power on beeps indicating functional beeper circuit

Partial keyboard test

Firmware EPROMS

Preparation Steps

1. Remove the battery pack.

2. Remove the applications EPROM if installed. (Refer to the Systems Manual if necessary.)

3. Press the reset switch.

4. Attach the battery pack.

5. Power on the Product.

Expected Results

IF the Product powers on and displays the following message:

Complete Steps 6 through 11.

IF the Product displays the following message;

Complete Steps 8 through 11.

Preparation Steps, continued

6. Press and release the [.] key.

7. Press and release the [alt] key.

8. Press and release the [R] key.

9. Press [ctrl]-[enter] simultaneously.

Expected Results

The Product displays the default configuration message as follows:

After the default message, the Product displays the following message:

It will take up to 20 seconds (depending on the amount of RAM) for the prompt to appear.

Any error conditions will be displayed after the self-test and will remain displayed until corrected. (See the Product System Manual for specific error conditions.)

Preparation Steps, continued

10. Power off the Product.

Expected Results

The display blanks.

Corrections for Preparation Failed

Test the battery.

Ensure that the application EPROM has been removed.

Test the batteries and charge current.

Ensure that the Product has been re-assembled according to the instructions at the end of this section.

Test the fuse F1 on the Main PCB assembly.

Examine the keypad assembly for wear or deterioration.

Examine the connectors for wear or deterioration.

Replace Main PCB assembly.

Perform the Keyboard Operation Test.

<Remainder of Diagnostics text not shown>

BOARD REPLACEMENT PROCEDURES

CAUTION

Integrated circuits on printed circuit boards (PCB) in this equipment are very sensitive to damage by electrostatic discharge (ESD). Prevent TSD by always wearing skin contact ground straps firmly attached to chassis ground when working inside of the equipment housing. Never open the unit package without safeguarding the entire work area with ESD protection. Failure to comply may result in damage to PCB components.

Memory Assembly

To remove the Memory assembly, complete **Steps 1 through 9** of the following Disassembly Instructions.

To re-assemble the Product, complete **Steps 29 through 33** of the following Assembly Instructions.

Main Assembly

To remove the Main assembly, complete **Steps 1 through 16** of the following Disassembly Instructions.

To re-assemble the Product, complete **Steps 22 through 33** of the following Assembly Instructions.

LCD/Keyboard Assembly

To remove the LCD/Keyboard assembly, complete **Steps 1 through 18** of the following Disassembly Instructions.

To re-assemble the Product, complete **Steps 19 through 33** of the following Assembly Instructions.

Disassembly Instructions

Fold out Figure 7-8 at the end of Section 7, Replacement Parts for easy reference. Use Figure 7-8 to identify all item numbers listed in parenthesis unless otherwise specified.

1. Power off the Product.
2. Disconnect all input devices and cables.
3. Remove the battery pack (Item 5).

4. Remove the four-#4 Phillips head screws (Item 3) that secure the lower assembly (Item 1) to the Product.

5. Gently lift the lower assembly and place it beside the Product assembly.

6. Remove the three -#2 Phillips head screws (Item 4) that secure the Memory PCB (Item 23) to the mounting frame (Item 6).

7. Place a small screwdriver as shown in Figure 7-10.

8. Rock the screwdriver and lift the Memory assembly (Item 23) free of the Main assembly (Item 12).

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CAUTION

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Early 9440 models may have an adhesive on the J2 connector or on the speaker wires. Remove this glue before disconnecting the speaker.

9. Remove the dampener strip and disconnect the speaker wire from the Main PCB assembly at the J2 connector.

10. Remove the three screws that secure the PCB mounting frame (Item 6) to the top enclosure assembly (Item 14); one #2 (Item 4) and two #4 (Item 3) Phillips screws.

11. Grasp the mounting frame (Item 6) near the modular housing (Item 21). Lift the frame and Main PCB from the case, modular housing end first. The battery pack locking latch (Item 25) restricts a straight lifting motion of the frame and Main PCB.

12. Slide the Main PCB assembly (Item 12) out of the frame. Do not lose the white elastomer connectors (Items 16 and 17), which are wedged into the frame near the edge fingers of the board.