

HP 8510C Operating System Upgrades

Installation Manual

For use with Firmware Revision C.07.00 or Greater of the

HP 115755 Performance Upgrade Package

SERIAL NUMBERS

This manual applies to all HP 8510C network analyzers, and to all HP 8510A and 8510B network analyzers that have been upgraded to HP 8510Cs.



HP Part No. 1157590023
Printed in USA January 1994

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Introduction

The Upgrade Package

The latest revision number of firmware at the time of shipment is printed on the operating system disk label. You can determine your instrument's current firmware revision at power up when the firmware revision number is displayed. Refer to Table 1-1, below, for a list of requirements to use this upgrade. Refer to Table 1-2 for the list of features added to this upgrade.

HP 11575J Performance Upgrade

Use this package to upgrade an HP 8510C from revision **C.06.XX** operating system firmware to revision **C.07.00** or greater.

Warranty Information

Installation of an upgrade does not affect the existing instrument warranty in any way. Specifically, it does not extend the current instrument warranty. Any parts supplied in an upgrade package carry a **90-day** replacement-part warranty.

Upgrade Requirements

Table 1-1 lists the instrument and firmware revision requirements of this operating system upgrade.

Table 1-1. Requirements of Each Upgrade Package

Upgrade Package	Firmware Revision Provided	Analyzer Model Required	Firmware Revision Required
HP 11575J	Current Revision ¹	HP 8510C ²	C.06.00 or greater

¹ Current firmware is the latest revision available at the time of shipment (Revision 7.00 or greater).

² Applies to any HP 8510A or 8510B that has been upgraded to an HP 8510C.

Source Compatibility

For complete compatibility with revision C.07.00 firmware, your source must be an HP 8360 Series source. If an HP 8360 Series source is not used, the Power Domain and Receiver Calibration functions will not work.

Table 1-2. HP 8510C Operating System Upgrade History

Upgrade Package	Added Features
HP 11575J	<ul style="list-style-type: none">■ Limit-Line testing capability■ Receiver calibration capability■ Dissimilar connector compensation■ Color printer compatibility■ Power domain measurements (includes power sweep)

Installing an Upgrade

Procedure

Step 1. Check the Upgrade Package Contents.

Using the table in Chapter 2, Table 2-1 for your upgrade, ensure that the package is complete. If not, contact your local Hewlett-Packard Sales and Service Office (listed inside the back cover of this manual) for assistance.

Step 2. Get the Items Not Included in Upgrade Package.

If needed, get items called out in the installation procedures, but are not included in the upgrade package.

Step 3. Performance Check the HP 8510C System.

Using the instructions in “Checking the HP 8510C Operation”, check that the system you plan to upgrade is functioning.

Step 4. Follow the Upgrade Instructions.

Follow the instructions provided in the appendices listed below to install and check your upgrade installation.

Table I-3. Upgrade Package Appendix Information

Upgrade Package Firmware Revision	Appendix Contents
HP 11575J, C.07.00 Firmware	Appendix A Installing the EEPROM Appendix B Loading the HP 8510C Operating System Appendix C Backing Up the Operating System Appendix D Instrument State Files

Checking the HP 8510C Operation

1. Configure the system as shown in Figure 1-1.
2. Turn on the instruments in the order given below:
 - a. The source (ensure the switch is turned to power on, not standby).
 - b. The test set.
 - c. The HP 85102 IF detector.
 - d. The HP 85101 display processor.
3. On the HP 85102, press INSTRUMENT STATE **RECALL** and select **More Factory Preset**.
4. Does the system pass self-test (HP 85101 self tests, 85102 running error messages, and test set unratio power tests) and display a log MAG S₁₁ trace? If not, do not perform the upgrade until the system has been serviced.
5. Initialize a blank disk:
 - a. Disable the disk write-protect (move the write-protect tab near the disk corner that closes the rectangular hole in the disk).
 - b. Insert the disk in the HP 8510C disk drive.
 - c. Press **DISC**, and select **SETUP DISC INITIALIZE DISC**.
6. Does the system initialize the disk (this takes approximately one minute) and display DISC INITIALIZED? If not, tag the HP 85101, indicating that it has a defective disk drive.
7. Is there a self-test, running error message, or unratio power test failure displayed? If so, check the equipment setup, and do not perform the upgrade until the setup problem is corrected or until the system has been serviced.
8. Continue with the upgrade chapter instructions.

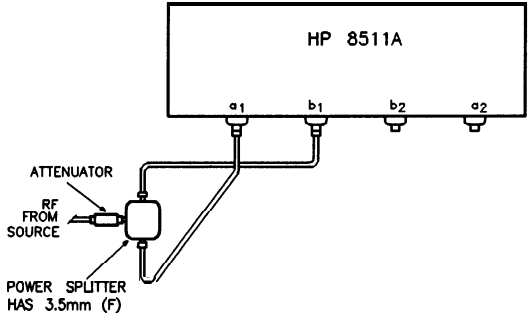
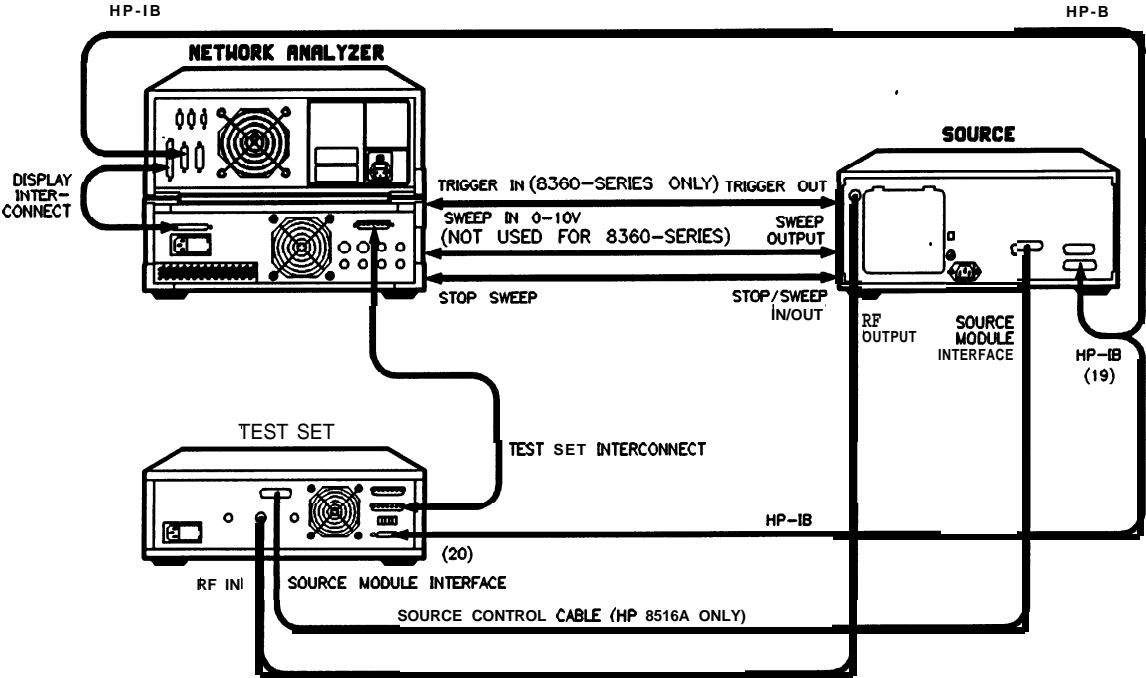


Figure I-I. Equipment Setup and HP 8511 A-Specific Connections

HP 11575J Performance Upgrade (Rev. C.07.00 or Greater)

Use this package to upgrade an HP 8510C from revision **C.06.00** (or greater) operating system firmware to the current firmware revision at the time of shipment. Chapter 1, Table 1-1, lists the requirements for this upgrade. Features added to this upgrade are listed in Chapter 1, Table 1-2.

Procedure Overview

Note.

You should have checked system performance already. If not, return to Chapter 1, read and follow the instructions in “Checking the HP 8510C Operation.”

Step 1. Install the new EEPROM, Appendix A.

Step 2. Load the new operating system, Appendix B.

Step 3. Backup the new operating system, Appendix C.

Step 4. Update documentation, inserting the new documents in appropriate manuals.

Step 5. Become aware of instrument state limitations, Appendix D.

Upgrade Package Contents

Table 2-1. HP 11575J Performance Upgrade Package Contents

Item	Qty	HP Part Number
Performance Upgrade Data Disk	1	85101-80116
Installation manual	1	11575-90023
EEPROM	1	85101-80114

Installing the EEPROM

Procedure

1. Ensure a static-safe work station. Check for the following:
 - a. The static mat sits on a clean, flat, sturdy surface.
 - b. The static mat has an earth ground connection.
 - c. The static mat has a connected wrist strap.
2. Install the EEPROM:
 - a. Remove the HP 85101 display processor from the system.
 - b. Remove the top cover of the display processor.
 - c. Refer to Figure A-1. Remove the A8 assembly.

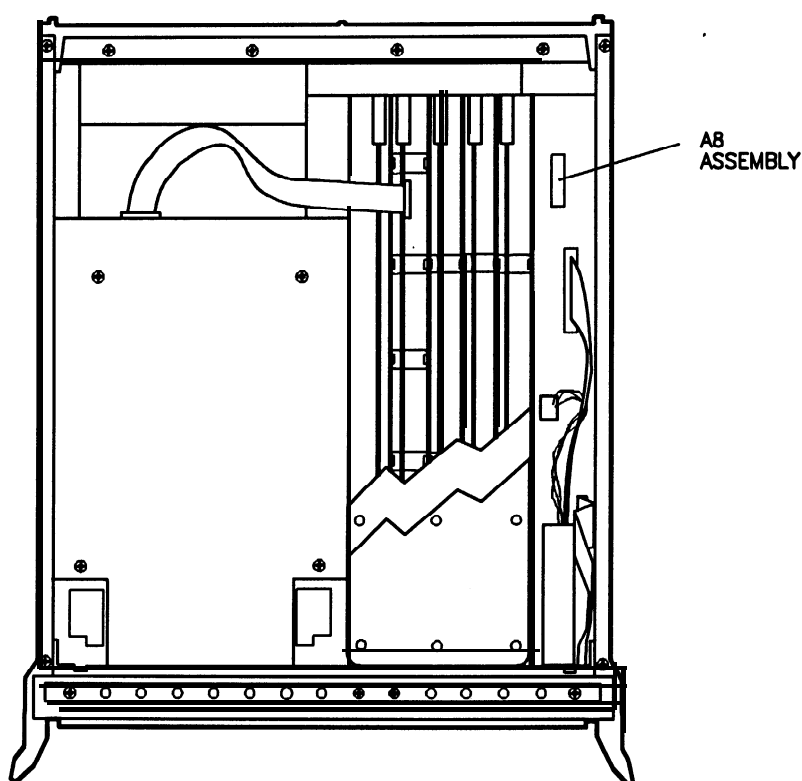


Figure A-1. A8 Assembly Location

- d. Install EEPROM (85101-80114) from the upgrade kit in any one of the empty EEPROM sockets on the A8 assembly (see Figure A-2).

Note

If an EEPROM socket needs to be opened, remove the EEPROM containing the previous revision system firmware. All of the sockets can be filled without any adverse affects to system performance.

- e. Replace the A8 assembly; replace the top cover.
- f. Return the display processor to the system; reconnect all cables and line cords.
- g. Continue with “Making Sure the EEPROM is Installed **Properly.**”

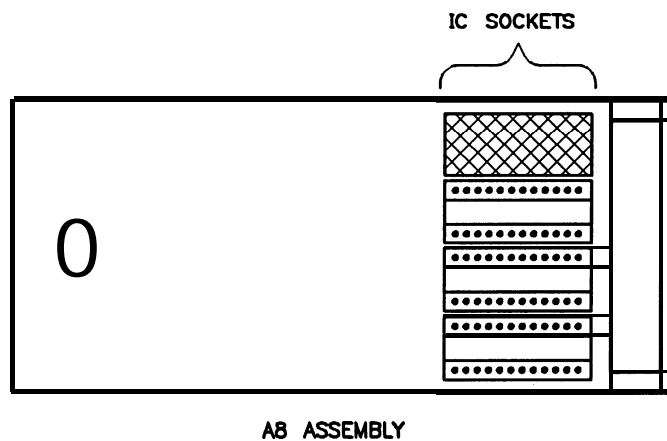


Figure A-2. EEPROM Installation Location

Making Sure the EEPROM is Installed Correctly

Check that the EEPROM has been properly installed on your system:

1. Turn on the instruments in the following order:
 - a. The source (ensure the switch is turned to power on, not standby).
 - b. The test set.
 - c. The HP 85102 IF detector.
 - d. The HP 85101 display processor.
2. On the HP 85102:
 - a. Press INSTRUMENT STATE **RECALL** and select **More** **Factory Preset**.
 - b. Press **DOMAIN** and select **POWER**. Does the instrument display the Frequency of Measurement Menu? If so, the Power Domain option is installed properly. If not, recheck the EEPROM installation.
 - c. Press **DISPLAY** and select **LIMIT LINES**.

Does the instrument display the Limit Lines Menu? If so, the Limit Line option is correctly installed. If not, recheck the EEPROM installation.

Additional Information “Upgrade Requirements” in Chapter 1 provides additional information that you may find useful.



Loading the HP 8510C Operating System

Procedure

Note



This procedure differs from the usual disk-loading procedure. This method allows you to load a disk with or without a previously installed operating system. Load the operating system supplied in the upgrade package to ensure that the proper operating system is installed. (that is, with or without the time domain option).

1. While holding down the **[=MARKER]** key, turn on the system instruments in the following order:
 - a. The source (turn the switch to power on, not standby).
 - b. The test set.
 - c. The analyzer.

Ignore the **self-test error 14, subtest 2 error**.

2. Press **[=MARKER]** again and insert the operating system disk into the network analyzer disk drive and press **[1] [9] [=MARKER]**.
3. Select the file named **PG_8510C**, then select **Load File**.

The program loads in three to four minutes, then the system is available for normal operation.

Note



Confirm that the *current firmware revision* number displayed in the title line on the screen matches the number on your system's operating disk label. If these numbers do not match, call an HP Sales and Service Office.

4. Check the current firmware revision in your instrument.
 - ☐ The revision number of your system firmware appears in the title line on the display.
 - ☐ For this example: C.07.XX should appear. *XX can be any number between .00 and .99.*

XX represents the revision number which should match the revision number on the system operating disk. *XX can be any number between .00 and .99.*
5. Press **[RECALL]** and select **More**, then **Factory Preset**.
6. Continue with Appendix C.

Backing Up the Operating System

Procedure

Use the following procedure to make a working copy of the instrument firmware *after* you install it. Store the original in a safe place.

1. Initialize a blank disk:
 - a. Insert a blank disk into the HP 85101C disk drive.
 - b. Locate the AUXILIARY MENUS keys and press **SYSTEM**.
 - c. From the displayed menu, press **MORE**, then **SERVICE FUNCTIONS** and **TEST MENU**.
 - d. When the system displays the MAIN SERVICE FUNCTIONS MENU, enter **2 1** labeled INITIALIZE DISC.
 - e. Press **=MARKER** to initialize the blank disk.
2. With the initialized disk still in the HP 85101C disk drive, copy the operating system:
 - a. Enter **2 0** labeled RECORD PROGRAM DISC. **=MARKER**
 - b. Use the RPG to select an instrument program file name, such as 8510C.
 - c. Now press **STORE FILE**.
3. Remove the disk, attach a label, then write protect the disk file.
4. Replace your existing *Keyword Dictionary* and *Operating and Programming Manual* with those provided in this upgrade.
5. Continue with Appendix D.

Instrument State Files

HP 8510C Network Analyzers

Not all instrument state **files** are interchangeable between the various firmware revisions. Table D-1 lists the firmware revisions and their file compatibility.

Be aware that if you save instrument state files (on tape or disk) on an analyzer with a given firmware revision, you may not be able to use those files in an instrument having a more recent firmware version.

The first vertical column in Table D-1. lists the firmware revision number under which your work disk files were created. The horizontal row lists the upgrade operating system revision numbers.

- To read Table D-1, look for the revision number you used to save data on disks.
- Then look for the current operating system (horizontal axis) installed in your instrument.
- If your previously saved disk information is saved with a compatible operating system revision, there is a “yes” printed in the vertical column where the two columns meet.
- If there is a “no” printed there, the data from your work disk must be recreated and saved under the new operating system.

Caution



The analyzer successfully **loads** incompatible instrument state files. When the incompatible file is **recalled**, however, the display blanks, and the front panel does not respond. **Do not** press (PRESET). See “Recovering from an Error State” for instructions about recovering properly from a crashed system.

Table D-1. Operating System File Compatibility

Revisions	Firmware Revision C.06.00	Firmware Revision C.06.50 to C.06.56	Firmware Revision C.07.00 or greater
C.06.00-system stored files	Yes	No (must be recreated)	No
C.06.50-system stored files	Yes	Yes	No
C.07.00-system stored files	No	No	Yes

Recovering from an Error State

To recover an instrument from the error state described above:

Using a narrow tool (such as a small screwdriver), press the **TEST** button on the analyzer front panel.

To clear the incompatible instrument state:

Press (**SAVE**), then select each instrument state register.

Do not press

PRESET!



Pressing **PRESET** may allow the instrument to partially recover. However the data may remain corrupted and cause the analyzer to fail at a later time.

Do not cycle power. This does not work if the incompatible instrument state was loaded into instrument state 8.

Recreating the Instrument State

In the case of **file** incompatibility just described, you must manually recreate the desired instrument state, then reload it on disk.

If you encounter an incompatibility after upgrading your instrument to firmware revision **C.06.50** or greater, and you do not have time to recreate earlier instrument states, reload the old firmware. This gives you full use of instrument state files created on an instrument with the earlier firmware revision.

Remember



Machine dump files contain instrument states, and have the same compatibility rules.

HP 8510C Millimeter-Wave Systems

Caution



The analyzer successfully **loads** incompatible revision-version files. When incompatible files are **recalled**, however, the display goes blank and there is no front panel response. Do **not** press (PRESET). Refer to “Recovering from an Error State” for instructions about recovering properly from a crashed system.

HP 85106C

Table D-2 defines the compatibility of HP 85106C configuration disk revisions versus analyzer firmware revisions.

Table D-2. HP 85106C mm-Wave Rev. vs System Firmware Rev.

HP 85106C mm-Wave Config Disk Revision HP Part Number	Firmware Revision C.06.00	Firmware Revision C.06.50 to C.06.54	Firmware Revision C.07.00 or greater
Revision 1.0 (85106-10006)	Yes	No (must be recreated)	No
Revision 2.0 (85106-10011)	Yes	Yes	No
Revision 1.0 (85106-10012)	No	No	Yes

If the network analyzer in your HP 85106C millimeter-wave system fails after you load the system configuration disk, order the millimeter-wave system configuration disk revision that is correct for your firmware.

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Customer Order Number
11575-90023
Printed in USA January **1994**

H P 11575J

INSTALLATION **MANUAL**

PRINTED: MAR 1994

EDITION: 1

HP PART NUMBER : 11575-90023

