

**Agilent Technologies**  
**85395A/B/C Upgrade Kits**

**Using Your Upgraded Receiver**



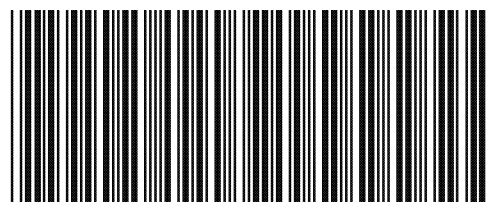
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# Hewlett-Packard to Agilent Technologies Transition

This documentation supports a product that previously shipped under the Hewlett-Packard company brand name. The brand name has now been changed to Agilent Technologies. The two products are functionally identical, only our name has changed. The document still includes references to Hewlett-Packard products, some of which have been transitioned to Agilent Technologies.

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## User's Guide

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### Introduction

This guide describes useful information about your upgraded instrument. It includes not only general information, but also important information about the new triggering scheme. This guide refers to instrument operation after the upgrade has been installed. There is no installation information in this document. The following general topics are described:

- Intended Audience.
- Product Description.
- Warranty Information.
- HP 8360 Source Compatibility.

In addition, the following technical subjects are described:

- Copying the Operating System Disks.
- Switching Between HP 8510 and 8530 Operation.
- Using EVENT TRIGGER and SWEEP TRIGGER IN.
- Metric and English Hardware.

### Intended Audience

This manual is intended for the HP 8510/8530 user.

### Product Description

The following is a description of the HP 85395A/B/C kits.

- |           |                                                                                                                                                                         |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HP 85395A | converts an HP 8510A (serial number suffix lower than 03000) to an HP 8530A with HP 8510C capability. Option 111 deletes HP 8510C operation.                            |
| HP 85395B | converts an HP 8510A (serial number suffix greater than 03000) <i>or</i> any HP 8510B to an HP 8530A (with HP 8510C capability). Option 111 deletes HP 8510C operation. |
| HP 85395C | converts an HP 8510C to an HP 8530A (retains HP 8510C capability). Option 111 deletes HP 8510C operation.                                                               |

#### Other Kits

- |           |                                         |
|-----------|-----------------------------------------|
| HP 85396A | adds HP 8510C operation to an HP 8530A. |
| HP 85012D | adds time domain operation to HP 8530A. |

## Warranty Information

If the upgrade is installed by an HP customer engineer, an upgraded instrument has an on-site warranty of 90 days following the installation date. This upgrade does not affect any existing HP 8510/8530 warranty. The warranty of other system instruments does not change.

## 8360 Source Compatibility

Some 8360-family sources must be upgraded before “quick step” or “test port power flatness” features will function. Table 1-1 explains how to upgrade various 8360 models, and which models do not require an upgrade.

**Table 1-1.**

HP Model	Serial Prefix	Required for Test Port Flatness Correction	Required for Quick Step
83630A 83650A 83651A	All	No modification required. <sup>1</sup>	
83621A 83631A	<3103A	HP 83601A upgrade kit <sup>2</sup>	
	3103A	08360-60167 firmware kit	
	3104A to 3111A	08360-60201 firmware kit	
	≥3112A	No modification required. <sup>1</sup>	
83620A 83622A 83623A 83624A 83640A 83642A	≤3103A	08360-60167 firmware kit	X <sup>3</sup>
	3104A to 3111A	08360-60201 firmware kit	X <sup>3</sup>
	≥3112A	No modification required. <sup>1</sup>	X <sup>3</sup>

<sup>1</sup> Fully compatible at time of shipment.

<sup>2</sup> Includes installation.

<sup>3</sup> Cannot be retrofitted to these models.

### *How to use the table*

Example 1: Assume you have an HP 83621A with a prefix less than 3103A. You would need to upgrade the unit with the HP 83601A upgrade kit.

Example 2: Assume you have an HP 83621A with a prefix of 3103A. You need to order the 08360-60167 firmware upgrade kit.

Example 3: Assume you have an HP 83621A with a prefix of 3112 or above. This unit requires no modification. It can perform quick step and test port power leveling already.

Notice that the HP 83631A is listed in the same box (under HP Model) as the HP 83621A. This means that the prefix numbers shown for the HP 83621A would also apply to the HP 83631A.

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## Copying the Operating System Disks

HP recommends that you create a copy of each operating system on blank disks. When you load an operating system, use the copies. This is especially important in systems that must be switched between HP 8510 and 8530 “modes” often.

This procedure assumes that the HP 8530A operating system is currently loaded.

### Copying the Current Operating System to Disk

This procedure assumes you are using high-capacity 1.44 Mbyte disks (Black HP disks). High-Capacity disks let you save both HP 8510 and 8530 operating systems on a single disk.

1. Press **SYSTEM** **MORE** **SERVICE FUNCTIONS** **TEST MENU**.
2. Get a blank high-capacity disk (supplied with your upgrade kit). Make sure the disk is not write-protected (look at the label-side of the disk, the write-protect tab is in the upper right-hand corner of the disk). The write-protect window must be *fully closed*.
3. Insert the disk into the drive slot (the label-side of the disk must face left). Initialize the disk by pressing **2** **1** **=MARKER**.
4. Save the current operating system by pressing **2** **0** **=MARKER**.
5. The “label maker” menu now appears. The proper file name prefix “PG\_” is already entered for you. Use the character-selector controls to add “8530” to the file name.

Press **STORE FILE**. The instrument will preset when the file is stored. Remove the disk and label it.

### Copying the HP 8510C Operating System

1. Press **SYSTEM** **MORE** **SERVICE FUNCTIONS** **TEST MENU**.
2. Insert the HP 8510C operating system disk, press **1** **9** **=MARKER**.
3. Press **LOAD FILE** to load the default file (the operating system file). Once the operating system loads the instrument will preset.
4. Press **SYSTEM** **MORE** **SERVICE FUNCTIONS** **TEST MENU**.
5. Insert the disk you used to store the HP 8530A operating system.
6. Save the new operating system by pressing **2** **0** **=MARKER**.
7. Press **DEFAULT TITLE** **STORE FILE**. The instrument will preset when the file is stored. Remove the disk and label it.

Use this “working copy” of the operating systems whenever you have to reload.

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## Switching Between HP 8510 and 8530 Operation

To switch between HP 8510C and 8530A operation you must reload the appropriate operating system from disk.

### Loading a Different Operating System

1. Press **SYSTEM** **MORE** **SERVICE FUNCTIONS** **TEST MENU**.
2. Insert your working copy of the operating system, press **1** **9** **=MARKER**.
  - a. Use the **▼** key (if necessary) to select the desired operating system.
  - b. Press **LOAD FILE**.

Once the operating system loads the instrument will preset.

### Save/Recall Registers

When you load a different operating system, all of the following registers are erased (or are replaced with default values):

- Instrument state registers.
- Memory registers.
- Cal sets.
- User-Loaded cal kit definitions.
- Delay table.
- User display graphics.

Here is a helpful suggestion for those who switch between HP 8510 and 8530 operation often: You can save all of the above “registers” to a single disk file (called a “machine dump” file). In fact, a “machine dump” saves every instrument setting and variable. Once you have set up the instrument the way you want it, save the machine dump file to disk by pressing:

**TAPE/DISC** **STORE** **MORE** **MACHINE DUMP**.

Later, when you load the desired operating system, you can also load the appropriate machine dump file. The instrument will return to the exact state it was in when you saved the machine dump file.

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#### Note



Be sure to use different file names for the two machine dump files.

One high-capacity disk can hold two operating system files plus two machine dump files. One low-capacity disk can hold one operating system with one machine dump file.

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## Using EVENT TRIGGER and SWEEP TRIGGER IN

The HP 8510B/C used one trigger input for many different types of triggers. The HP 8530, however, uses two trigger inputs. Table 1-2 shows how to use these trigger inputs properly.

**Table 1-2.**  
**Trigger Signal and Appropriate Trigger Input BNC**

Signal Type	Proper Input BNC
8360 Source Trigger (TRIGGER OUTPUT)	SOURCE TRIGGER IN
Any External Measurement Trigger <sup>1</sup>	EVENT TRIGGER

<sup>1</sup> In external trigger mode, a falling-edge TTL signal at the EVENT TRIGGER BNC starts the next measurement. The type of measurement (an entire sweep or a single data point) depends on current measurement settings.

### Where to Find More Information

Refer to “External Triggering” in Chapter 4 of the *HP 8530A Microwave Receiver User’s Guide* for a description of external triggering. For timing requirements on event trigger pulses, refer to “Timing Considerations” in Chapter 8 of the same manual.

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## Metric and English Hardware

If you have upgraded an HP 8510A or 8510B you should read this section.

All HP 8510As and early HP 8510Bs use English screws for the front panel frame, rack mount flanges/handles, and other chassis components. Here are some important points to remember:

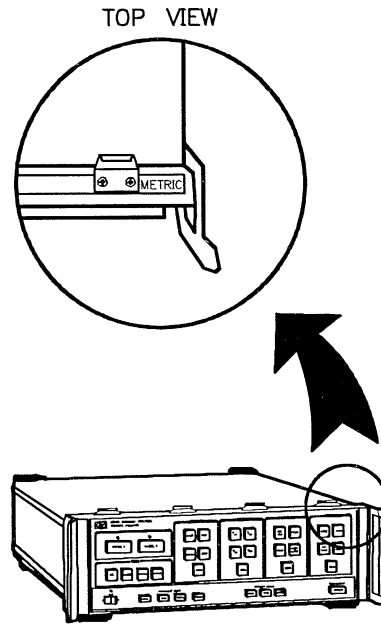
- The top box in your upgraded system uses metric chassis hardware.
- The bottom box may use English or metric hardware, depending on how old it is.

### Note



Knowing the type of hardware you need is important. If you ever add new handles, or rack mount flanges, you could strip the screw holes if you use the wrong type of screw.

You can tell if your bottom box uses metric or English hardware by looking at the front panel frame. Refer to Figure 1-1.



**Figure 1-1.**  
**Determining if the Instrument Frame Uses English or Metric Screws**

If the word “METRIC” is stamped on the frame, the bottom box uses metric hardware (for chassis parts).

If the word “METRIC” is *NOT* stamped on the frame, the bottom box uses English hardware throughout.

Also, most instruments that have silver-colored frames use English hardware. So if you see a silver frame, be sure to check it.

- You should be especially careful any time you install new frame screws for any reason.