

Installation Note

Agilent PSA Series Spectrum Analyzers Secure Memory Erase, Option 117



Agilent Technologies

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E4440-90323

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Secure Memory Erase, Option 117

Products Affected:	PSA E4440A PSA E4443A PSA E4445A PSA E4446A PSA E4447A PSA E4448A
Serial Numbers:	US0000 / US9999 MY0000 / MY9999 SG0000 / SG9999
To Be Performed By:	<input checked="" type="checkbox"/> Agilent Service Center <input checked="" type="checkbox"/> Personnel Qualified by Agilent <input type="checkbox"/> Customer
Estimated Hardware Installation Time:	30 minutes
Estimated Firmware Download and Verification Time:	1 Hour

Introduction

This installation note explains how to install the hardware and firmware that allows enhanced security features on the PSA series spectrum analyzers.

The new hardware consists of a memory board where only files that can be modified by the user are stored. These “user” files consist of screen captures, instrument state and trace files, limit lines, amplitude correction files, user preset files, mode cache files, and power on last state files. The instrument main memory is mounted read only, and this main memory contains the instrument core firmware, the license keywords that enable the options, the measuring personality files, and the instrument network settings (IP address, gateway settings, GPIB address, etc). Therefore, to secure the instrument, the contents of the memory on the optional memory board can be erased without losing operational data required to run the PSA.

Once the hardware is installed, it is mandatory to update the PSA firmware so the PSA can recognize the new hardware.

NOTE

1. The security feature is NOT to be turned on by the retrofit kit installer. As mentioned above, once the secure erase feature is enabled, all things stored in main memory cannot be changed by the end user. Therefore, the end user must be given a chance to complete the instrument configuration such as adding optional measurement personalities and configuring their I/O settings. When the end user is satisfied with the instrument configuration, only then will they enable the security feature.
2. The Memory board has a USB port, but this port is only active if Option 111, USB

Device Side I/O, is installed.

3. This option is licensed for one instrument model/serial number combination. The license key will only install on the designated instrument.

Contents

Quantity	Description	Agilent Part Number
1	Installation Note	This note
1	Option Upgrade Entitlement Certificate	5964-5141
1	User's and Programmers Guide Vol. 1	--
1	Memory Board	E4440-60252
1	Cover Plate, rear panel	E4440-00061
1	Label (used to cover USB port on cover plate)	E4440-80099
9	Screw, M3 X 0.5 8 mm LG TORX	0515-0372

Tools Required

- T-20 Torx driver
- T-10 Torx driver
- PSA Series Spectrum Analyzer Service Guide. This manual is available as part of the E444xAU Option OBW kits.
- Calibration software. Latest software information and downloads available at <http://www.agilent.com/find/calibrationsoftware>
- Test equipment supported by the calibration software.
- Microsoft Windows based personnel computer with LAN card and CD-ROM drive.
- Windows 2000 or Windows XP
- Crossover cable if PC or analyzer is not connected to network. Use a CAT, RJ45 cable with cross pinning, Agilent p/n 8121-0545.
- Firmware A.0 9.00 or later. Download the latest revision from http://www.agilent.com/find/psa_firmware, or order the Firmware Update kit.

Depending on your model number, the firmware update kit is ordered as: Order E444xAU (Qty.1) Option UE2 (Qty. 1), where the “x” is the last digit of the model number. For example: E4440AU option UE2.

Installation Procedure

Preliminary Hardware Verification

1. Check for the presence of Option 111 or Option 115 by pressing **System, More, Show System**, and look at the option list.

NOTE

Option 111, Option 115, and Option 117 share the same PC assembly. Therefore, if the latest version of the PC assembly is currently installed, you can skip the hardware installation portion of this procedure. Instruments with serial prefix US/MY/SG 4618 or greater were factory configured with Option 115.

2. If Option 111 or Option 115 is present, press **System, More, Show Hardware**. Note the part number of the USB/Flash Driver.
3. If Option 115 is present it must be uninstalled before installing Option 117.*
 - Write down the complete option list from the instrument “Show System” screen by pressing **System, More, Show System**. A hard copy of this list is needed because the list of measurement personalities will disappear from the instrument “Show System” screen once the Option 115 license is deleted. Your option list may look something like: BAF, BAC, 215, 219.

Later in the firmware update procedure you will need to assure these options are chosen for reinstallation.

 - Delete the Option 115 license by pressing **System, More, More, Licensing, Option**. Use the front panel numerical key pad to enter the option designator 115 and press the **Enter** key. Press **Delete Option**.
 - Check that Option 115 has been removed by pressing **System, More, Show System**, and looking at the option list.

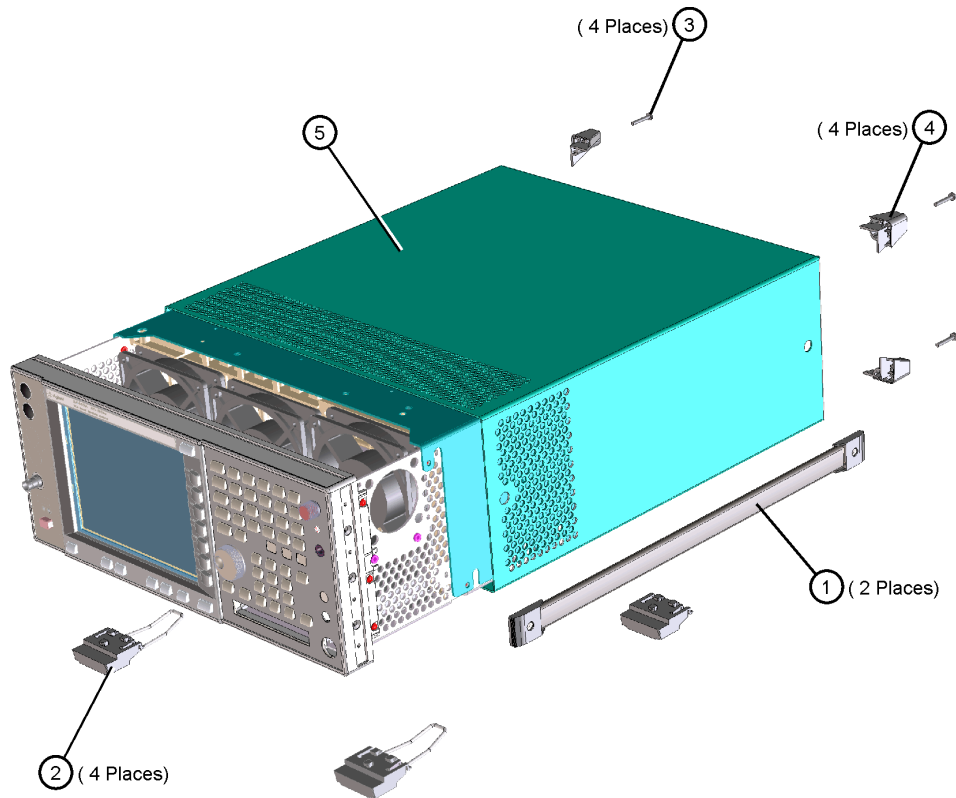
* Option 115, 512 MB User Memory uses a different memory map and is not compatible with Option 117. Changing from Option 115 to Option 117 causes the non-user memory to be reduced from 512 MB to 64 MB, limiting the number of measurement personalities that can be stored in the instrument.
4. Determine the part number of the PC assembly in the kit. The assembly in the kit should be the latest part number.
 - If Option 111 and/or Option 115 are present and the part numbers match, skip to the “Install the Option Designator and License Keyword” portion of this installation note.
 - If neither Option 111 nor Option 115 is present, or if the part numbers do not match, follow the procedure below to install the latest PC assembly.

Remove the Outer Case

CAUTION If the instrument is placed on its face during any of the following procedures, be sure to use a soft surface or soft cloth to avoid damage to the front panel, keys, or input connector.

1. Disconnect the instrument from ac power.
2. Refer to Figure 1. Remove the two handles on the sides of the instrument as shown. Use the T-20 driver to loosen the screws that attach each handle (1). Remove the handles.
3. Remove the four bottom feet (2). Lift up on the tabs on the feet, and slide the feet in the direction indicated by the arrows.
4. Remove the four screws (3) that hold the rear feet (4) in place.
5. Pull the instrument cover (5) off toward the rear of the instrument.

Figure 1 Instrument Outer Case Removal

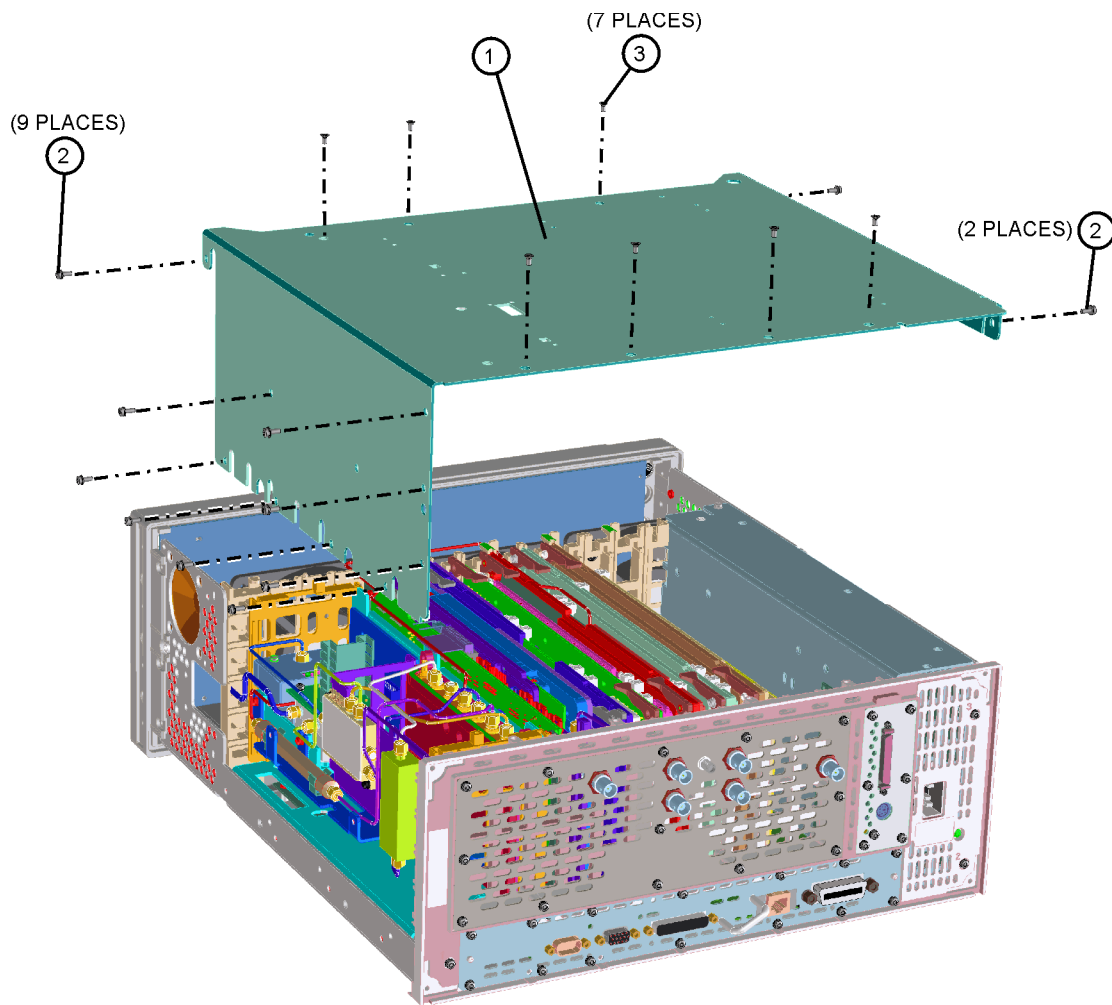


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Remove the Top Brace

1. Refer to Figure 2. Use the T-10 driver to remove the top screws (3) (one screw is under the security label), and the side screws (2) attaching the top brace (1) to the deck.
2. Remove the top brace from the deck.

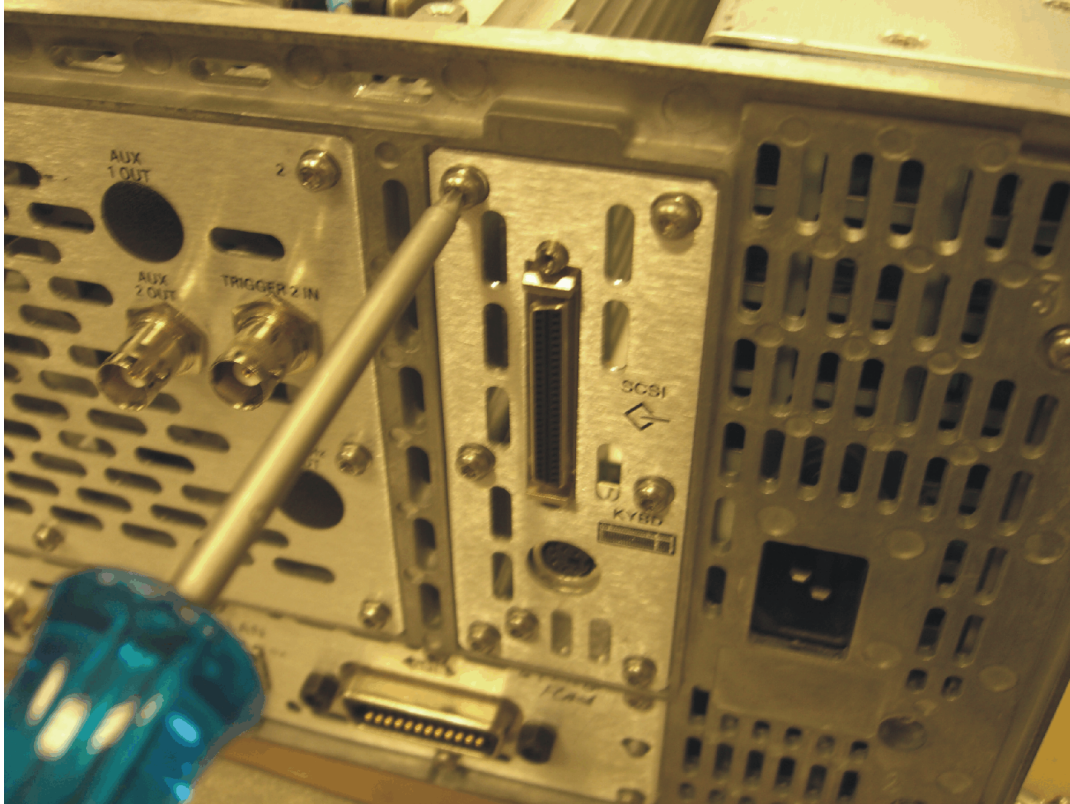
Figure 2 **Top Brace Removal**



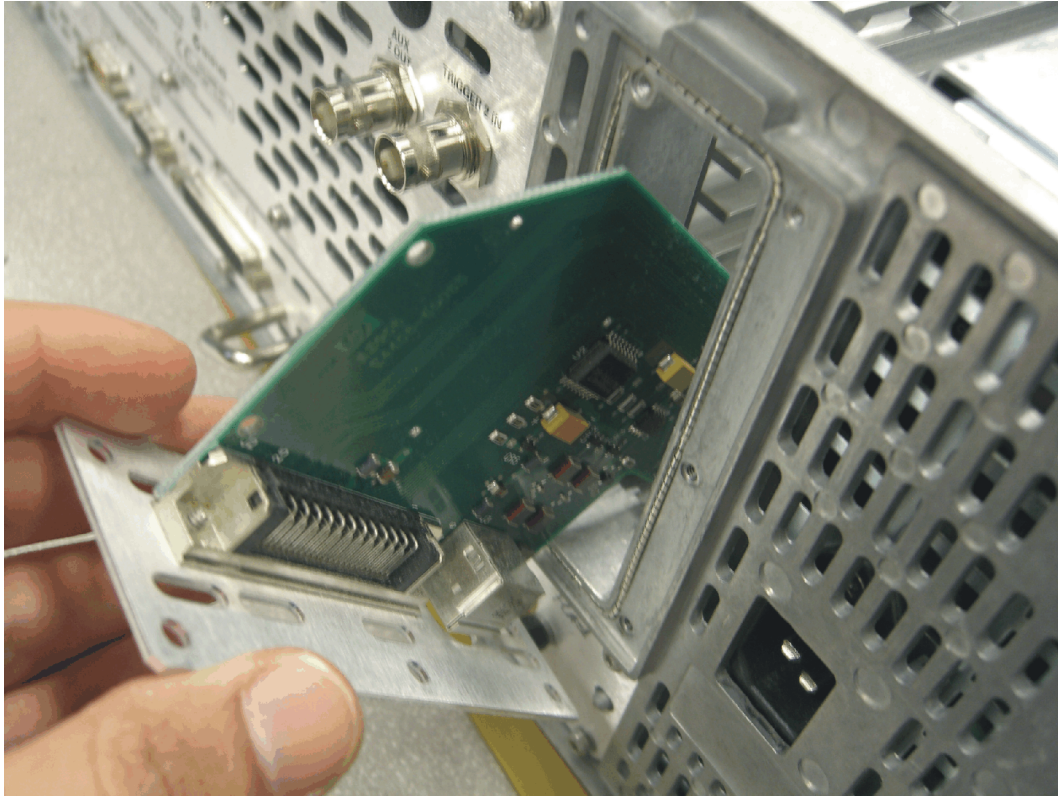
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Installing the Retrofit Kit

1. Locate the A6 (SCSI Interface board). When facing the rear panel of the instrument, the A6 board is in the right side of the instrument.
2. Remove the 6 screws from the rear plate of the A6 SCSI interface board. The plate will stay attached to the board. See the picture below.

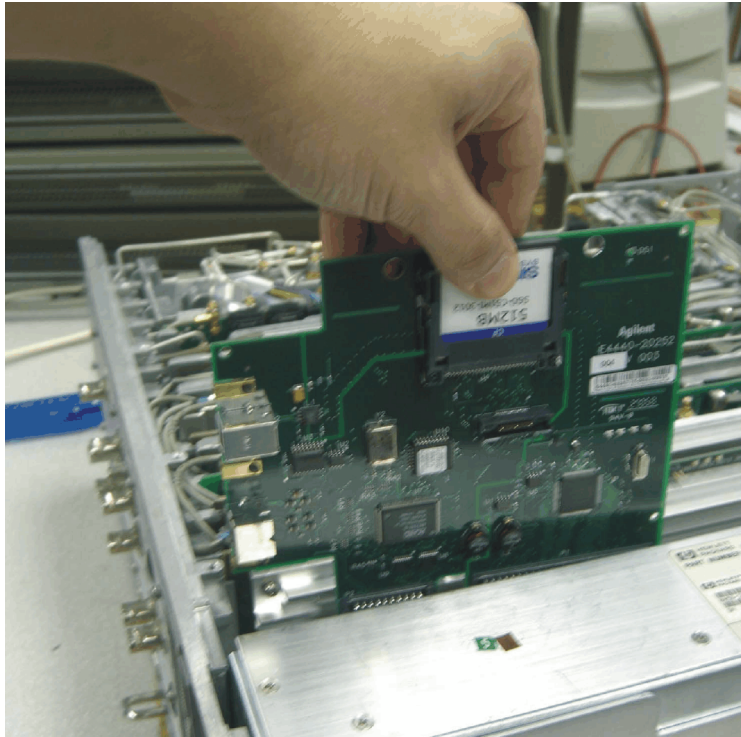


3. Remove the A6 SCSI interface board. To do this, gently lift the board vertically from its socket on the PSA motherboard. Once the A6 SCSI interface board is unseated from the motherboard, it can be removed through the rear panel.

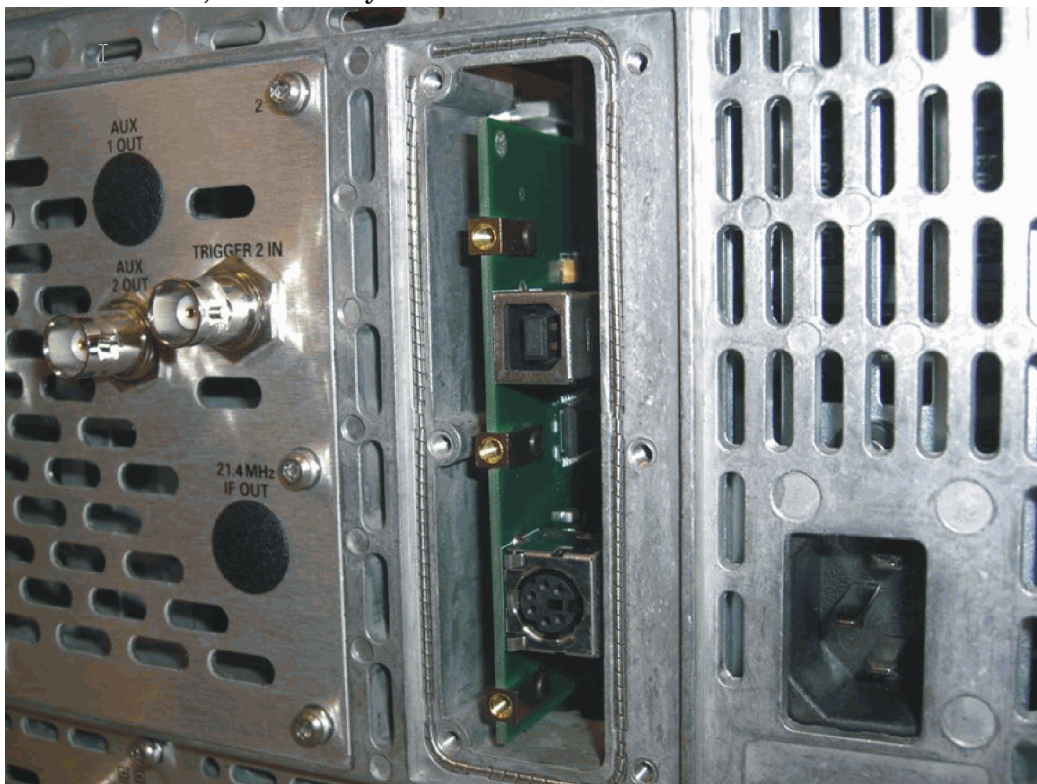


Installation Procedure

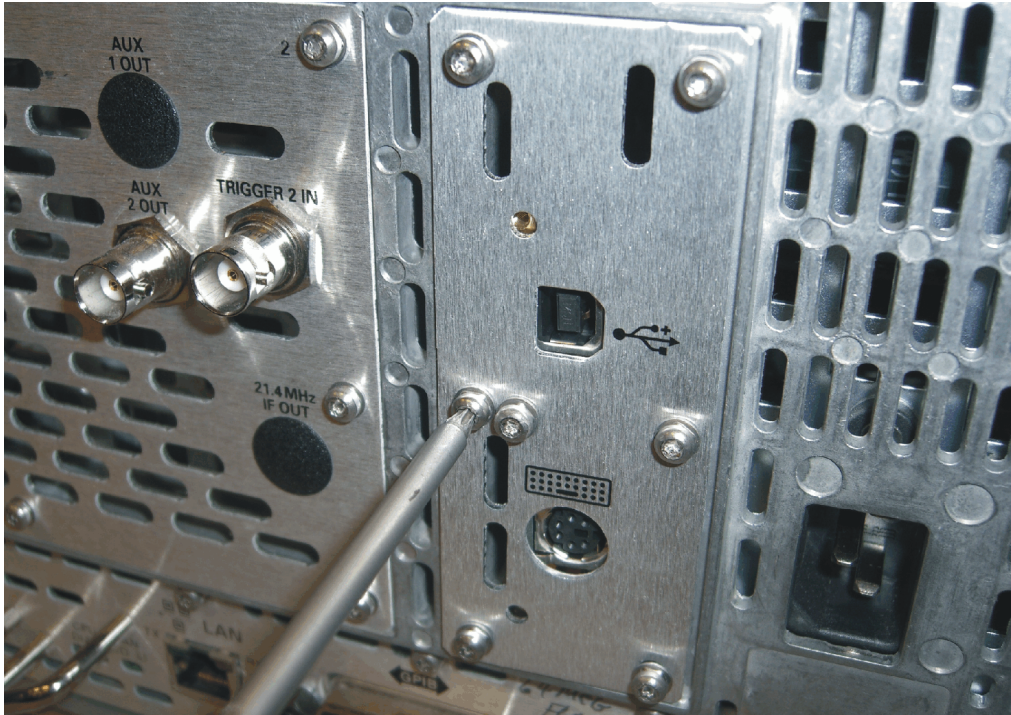
4. Insert the Memory board as shown below. Make sure to firmly insert the connectors into the PSA motherboard sockets, but do not exert so much force as to break the connector.



After installation, the memory board should look like this:



- Put the rear plate in place on the PSA rear panel, and screw it into place as shown below. New screws are included in the kit.



- Apply the label, included in the kit, over the USB port.

Replace the Top Brace

- Refer to Figure 2.
- Carefully position the top brace on the deck. There is an alignment pin on the mid web/fan assembly that should match up with the alignment hole on the top brace. Make sure that no coaxial cables will get pinched underneath the brace.
- Using the T-10 driver, replace the top screws first, and then the side screws after the top screws are tightened. Torque to 9 inch pounds.

Replace the Outer Case

- Refer to Figure 1.
- Slide the instrument cover back onto the deck from the rear. The seam on the cover should be on the bottom. Be sure the cover seats into the gasket groove in the front frame.
- Replace the four rear feet onto the rear of the instrument. Torque to 236 Ncm (21 in-lb).
- Use the T-20 driver to replace the handles. Torque to 236 Ncm (21 in-lb).
- Replace the four bottom feet by pressing them into the holes in the case and sliding them in the opposite direction of the arrows until they click into place. Note that the feet at the front have the tilt stands.

Install the Option Designator and License Keyword

NOTE The option designator 117 and the license keyword must be entered into instrument memory in addition to the correct firmware before the hardware will function.

1. Locate the Option Upgrade Entitlement Certificate in the kit and follow the directions to redeem it. You will receive an email that has the license keyword required for step 4.
2. Plug in instrument and power up.
3. On the instrument front panel press: **System**, **More**, until the **Licensing** softkey is visible. Press **Licensing** and **Option**. This will activate the alpha editor menu. Use the front panel numerical keypad to enter the option designator 117. Press the **Enter** key. Note that 117 now appears on the **Option** key.
4. Press **License Key**. The license key number is a hexadecimal number that will require the entry of both letters and numbers. Use the alpha editor and the front panel numerical keypad to enter the license key number. Your entry will appear in the active function area of the display. If you make a typing error, use the backspace key to correct the error. Check the license key number you entered. Press **Enter**, **Activate License**.
5. Cycle instrument power and allow instrument to perform the auto align routine.

Install New Instrument Firmware

Download the PSA Update Program and the PSA Firmware Procedure from

http://www.agilent.com/find/psa_firmware

Alternate method:

Install the Firmware Upgrade Kit E4440AU Option UE2.

A complete firmware installation is required even if the instrument currently contains the latest firmware. If the instrument does contain the latest firmware, do the following:

- At the **Choose Components to load** screen, check the box for **Operating System Version X.XX for Firmware Version A.XX.XX**.

This will allow the instrument memory to be reconfigured.

If Option 115 was previously installed on the instrument then refer to the list of options that were written down during the Preliminary Hardware Verification step 3 and check the appropriate boxes on the “Chose Components to Load” screen of the Firmware Update Program. If a large number of measurement personalities were previously installed they may no longer all fit.

DO NOT enable this option until the end user has fully configured the instrument, setup all **System**, **Config I/O settings**, added or removed options and licenses, and configured the desired power-up state. After the security mode is enabled, the main Flash memory

becomes read-only, rather than read/write memory. This makes it impossible to add or remove personalities or their license keys, or otherwise change the instrument's configuration. Refer to “Managing Security” in the PSA User's and Programmer's Reference, Volume 1 for more information.

Adjustments and Performance Tests Required

None. Installing this memory assembly does not affect instrument calibration.

Verify the Option

Once the license keyword is installed and the firmware updated, the instrument will automatically update the memory following a power cycle.

Check for the presence of Option 117 by pressing **System, Show System** and looking for 117 in the Options section of the display.

End of Installation

For assistance, contact your nearest Agilent Technologies Sales and Service Office. To find your local Agilent office access the following URL:

<http://www.agilent.com/find/assist>

