Installation Note

Agilent Technologies
PSA Series Spectrum Analyzers
Option 426 Gated Sweep Hardware
Retrofit Kit

Part Number E4440-90305 Supersedes: E4440-90271
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Option 426 Gated Sweep Hardware Retrofit Kit

Products Affected:	PSA E4440A PSA E4443A PSA E4445A PSA E4446A PSA E4448A
Serial Numbers:	US0000 / US4251 MY0000 / MY4328
To Be Performed By:	(X) Agilent Service Center (X) Personnel Qualified by Agilent ( ) Customer
Estimated Installation Time:	2 Hours
Estimated Adjustment and Verification Time for Hardware Kit Following Installation:	4 Hours (see note 1)
Additional Recommended Task	Agilent recommends that a full calibration be performed to verify instrument specifications. (see note 2)

Introduction

This retrofit kit provides all the parts and instructions for installing Gated Sweep (Time Gating) in instruments shipped prior to the introduction of gated sweep. The A12A1 LO Synthesizer assembly, the A13 Front End Driver Retrofit Kit, and firmware need to be installed to upgrade the instrument for gated sweep.

This installation note covers both the E4446A/E4448A version and the E4440A/E4443A/E4445A version of the retrofit kits. The Gated Sweep Retrofit kits contain different Front End Driver Retrofit kits. Otherwise they are the same.

NOTE 1. The installation of this kit requires that some re-adjustment and performance testing be performed in order to assure the new option is functioning properly. This installation note includes a list of required adjustments and performance tests. Completing the list of required performance tests does not guarantee the instrument meets all specifications.

NOTE 2. The instrument end user must determine whether they need a full instrument calibration following the installation of the kit. If full calibration is required, arrangements regarding the level of calibration must be made between the end user and the calibration provider.

Contents

Quantity	Description	Agilent Part Number
1	Installation Note	this note
1	Blank Label	9320-5296
1	A12A1 LO Synthesizer Board	E4440-60283
1	Front End Driver Retrofit Kit	
	E4440A, E4443A, or E4445A	E4440-60434
	E4446A or E4448A	E4446-60014

Tools Required

- ❏ T-10 Torx driver
- ❏ T-20 Torx driver
- ❏ 8mm socket wrench (deep socket, required for SMA connector)
- ❏ 5/16-inch open-end wrench
- ❏ 9/16-inch open-end wrench
- ❏ Flat blade screwdriver - 0.01 in. thick blade
- ❏ Calibration software. Latest software information and downloads available at http://www.agilent.com/find/calibrationsoftware
- ❏ Test equipment supported by the calibration software.
- ❏ PSA Series Spectrum Analyzer and Service Guide. This manual is available as part of the E4440AU, E4443AU, or E4445AU Option OBW kits.
- ❏ Microsoft Windows based personnel computer
- ❏ Windows 2000, Windows XP Professional.
- ❏ Firmware A.04.12 or later. Download the latest revision from http://www.agilent.com/find/psa_firmware or order the Firmware Update Kit, E444xAU Option UE2.

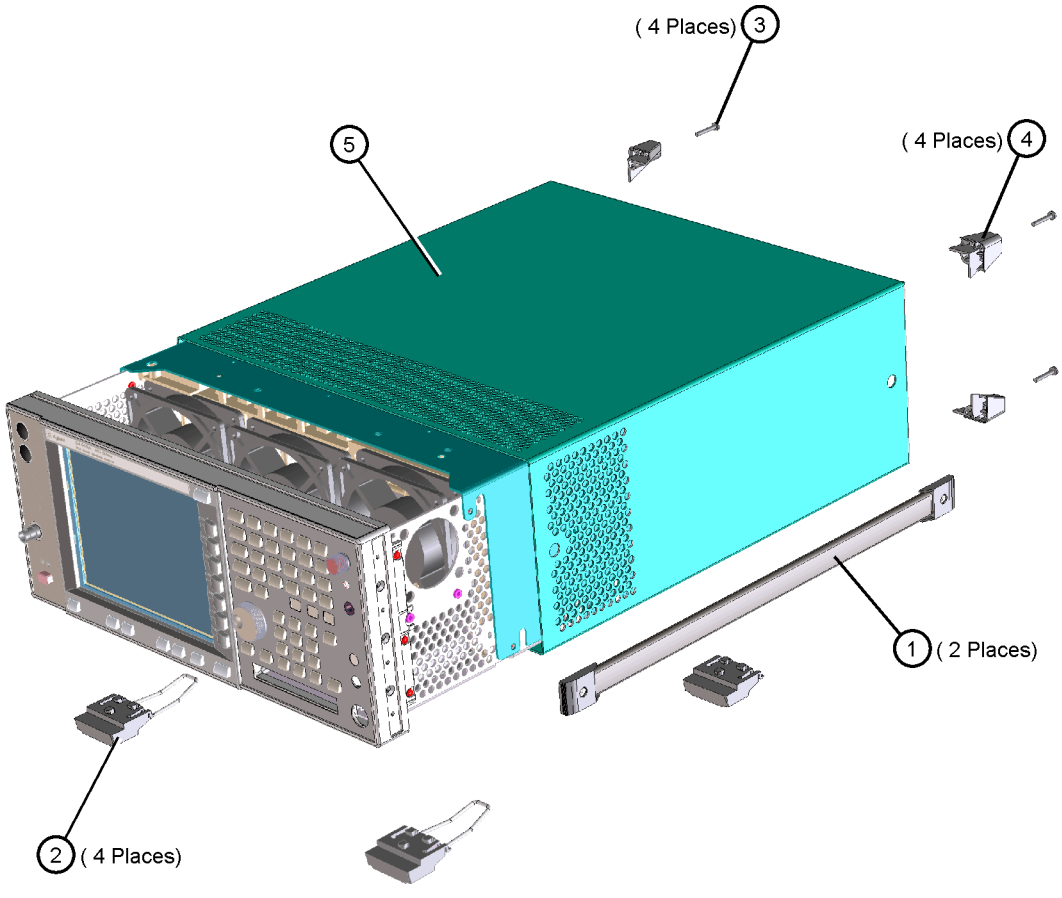
Installation Procedure

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

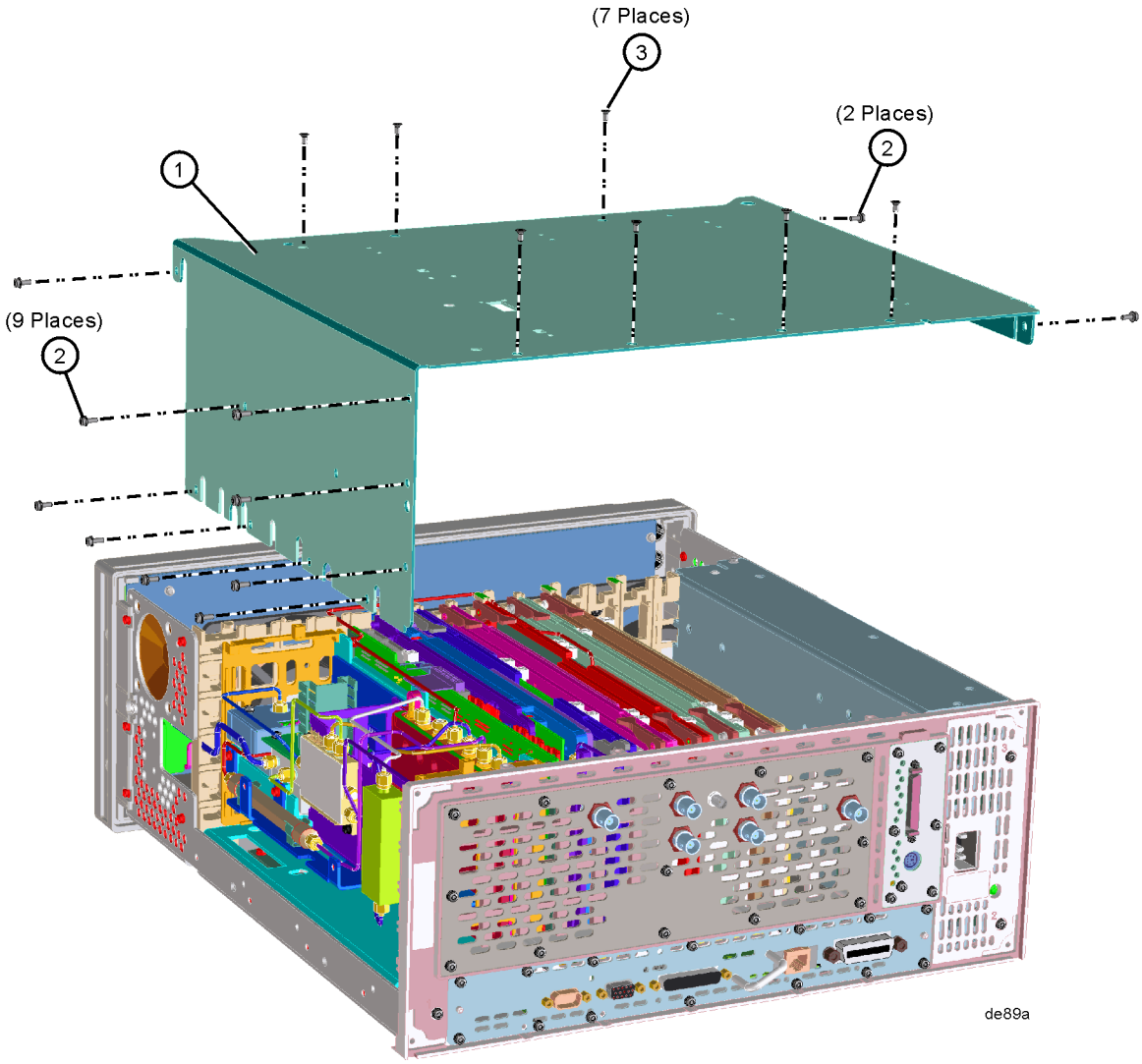


Remove the Top Brace

6. 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.

7. Remove the top brace from the deck.

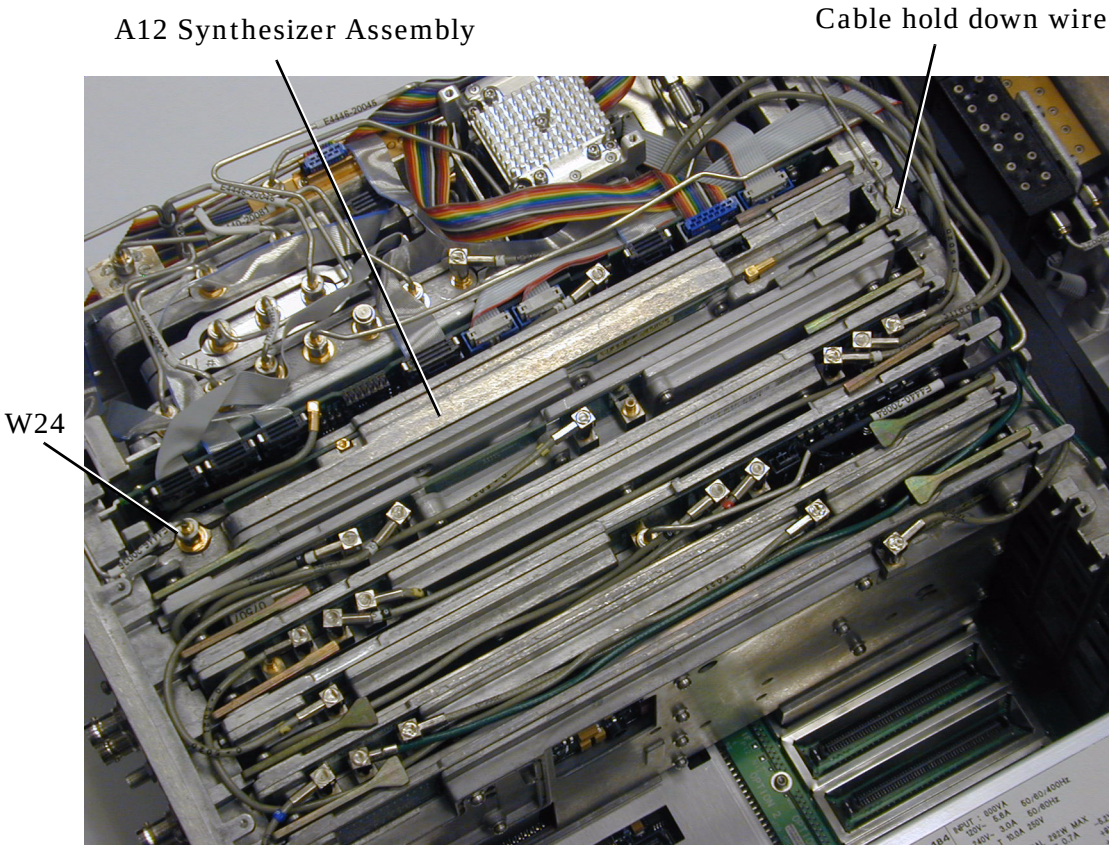
Figure 2 Top Brace Removal



Remove the A12 LO Synthesizer Assembly

8. Refer to Figure 3. Remove cable W24.
9. Remove the cable hold down wire (single screw), and the two screws attaching the synthesizer assembly to the midweb and deck.
10. Pull up on the ejector tab to unseat the board from the motherboard connector, then slide the board up to remove it from the deck.

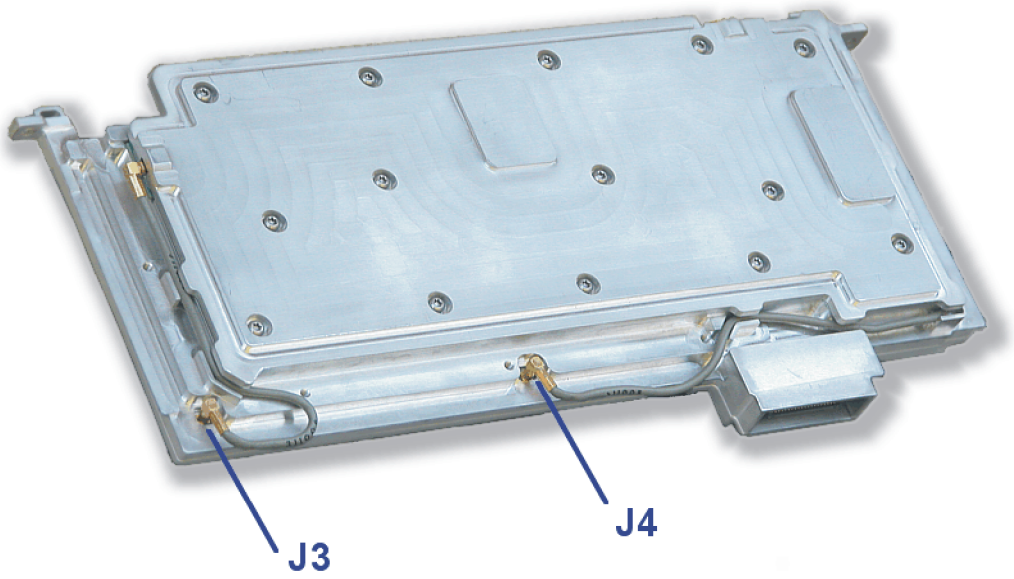
Figure 3 A12 Synthesizer Assembly Removal



Replace the A12A1 LO Synth Board (part of A12 LO Synthesizer assembly)

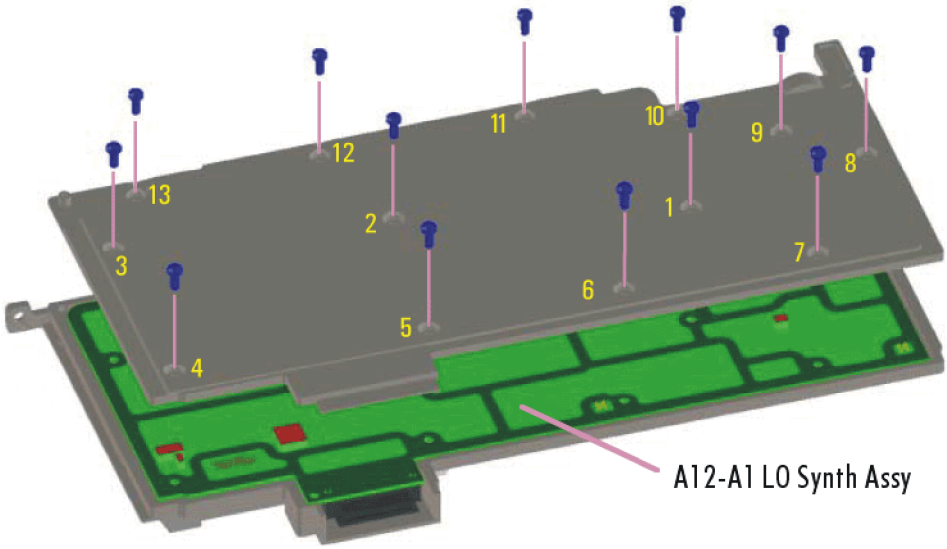
11. Remove the cables from J3 and J4 on the A12 assembly at the location shown in Figure 4.

Figure 4 LO Synthesizer Assembly



12. Turn the A12 over and remove the screws and A12 LO Synth Bottom Shield as shown in Figure 5.

Figure 5 A12A1 LO Synth Board



13. Remove the old A12A1 LO Synth board.
14. Place the new A12A1 LO Synth board onto the Mid Shield, lining it up with the screw holes on the Mid Shield.
15. Replace the A12 LO Synth bottom shield
16. Refer to Figure 5. Hand start screws 11 and 13 first.
17. Hand start remaining screws and then torque all the screws to 9 inch pounds (101 N-cm) using the pattern shown in Figure 5, starting with screw 1.
18. Turn the A12 LO Synth assembly over and replace the cables to J3 and J4 on the A12 assembly.

Install the A12 LO Synthesizer Assembly

19. Insert the board into slot 2 on the Motherboard. Push the assembly down to seat the assembly.
20. Connect the cable hold down wire (single screw), and replace the two screws attaching the synthesizer assembly to the midweb and deck. Torque the screws to 9 in-lbs (101 N-cm).
21. Reconnect cable W24.
22. Torque the semi-rigid cables to 10 inch pounds.

Install the A13 Front End Driver Assembly Using the Front End Driver Replacement Kit

Follow the procedure in the installation note included in the Front End Driver Replacement Kit except for the following:

Reset the Calibration Constants for the A12A1 LO Synthesizer Board

The PSA Series Performance Tests and Adjustment Software, A.02.00 and above, must be used to reset the calibration constants on the replacement A12A1 LO Synthesizer board you just installed.

1. Select the **Utilities** test plan in the “PSA Series Performance Tests and Adjustment Software.”
2. Run **Calibration Constant Reset**.
3. Select **A12 A1 LO/Synthesizer** assembly and press OK to reset the calibration constants.

Add

“Noise Sidebands < 50 kHz Offsets” and “Noise Sidebands > 50 kHz Offsets” to the Performance Verification list in the “Adjust and Verify the Front End Driver” (on last page). This performance test is needed to verify the installation of the LO Synthesizer assembly.

Attach Label to rear of instrument

1. Write “Gated Sweep” on the blank label using a fine point permanent marker.
2. Attach label to the right bottom corner of rear dress panel of the instrument.

Assistance

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

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