

Installation Note

**HP/Agilent 8590-Series Spectrum Analyzers,
HP/Agilent 8591C TV Analyzer, and HP/Agilent 8594Q
QAM Analyzer Firmware Replacement Kit**



Part Number: 08590-90323 Supersedes: 08590-90304

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Resolution Bandwidth Replacement Kit

Products Affected:	HP/Agilent 8590 L/C/E Series and 8594Q
Serial Numbers:	US00000000/US99999999 UK00000000/UK99999999 0000A00000/9999A99999 0000U00000/9999U99999
To Be Performed By:	(X) Agilent Technologies Service Center (X) Personnel Qualified by Agilent (X) Customer
Estimated Installation Time:	0.5 Hour
Estimated Verification Time:	0.1 Hour

Description

This installation note is included in two different kits. Firmware kit 08590-60422 is for all of the products affected except the HP/Agilent 8594Q. The firmware contained in this kit is revision M. The datecode for the revision M firmware is 991130. The format for the datecode is YYMMDD. (Y stands for year, M stands for month, and D stands for day.) The datecode can be confirmed by selecting the **Show Options** softkey.

Firmware kit 08590-60120 contains the latest HP/Agilent 8594Q firmware.

Tools Required

Description	Part Number
4-mm hex (Allen) wrench	8710-1755
Small (no. 1) pozidrive screwdriver	8710-0899
Large (no. 2) pozidrive screwdriver	8710-0900
T-10 TORX driver	8710-1623
T-15 TORX driver	8710-1622
Small, flat-blade screwdriver	8710-0059

Firmware Replacement Kit Parts Lists

NOTE The firmware in this kit consists of four 2-megabit ROMs. It is to be used on processor boards with a part number of 08590-60342 or later. For analyzers with processor board 5062-8276 or 08590-60229, use firmware replacement kit 08590-60372.

Installation Kit, 08590-60422 , Parts List (8590 L/C/E Series)

Quantity	Description	Part Number
1	EPROM PRGMD U6	08590-80258
1	EPROM PRGMD U7	08590-80259
1	EPROM PRGMD U23	08590-80260
1	EPROM PRGMD U24	08590-80261
1	Installation note	08590-90323

Installation Kit, 08594-60120, Parts List (8594Q)

Quantity	Description	Part Number
1	EPROM PRGMD U6	08594-80054
1	EPROM PRGMD U7	08594-80055
1	EPROM PRGMD U23	08594-80056
1	EPROM PRGMD U24	08594-80057
1	Installation note	08590-90323

Installation Procedure

WARNING Before you disassemble the instrument, turn the power switch OFF and unplug the instrument. Failure to unplug the instrument can result in personal injury.

CAUTION Electrostatic discharge (ESD) can damage or destroy electronic components. All work on electronic assemblies should be performed at a static-safe workstation. Refer to the documentation that pertains to your instrument for information about static-safe workstations and ordering static-safe accessories.

Instrument Cover Removal

1. Disconnect the spectrum analyzer from the ac power.
 2. Remove any adapters or cables connected to the front and rear panels.
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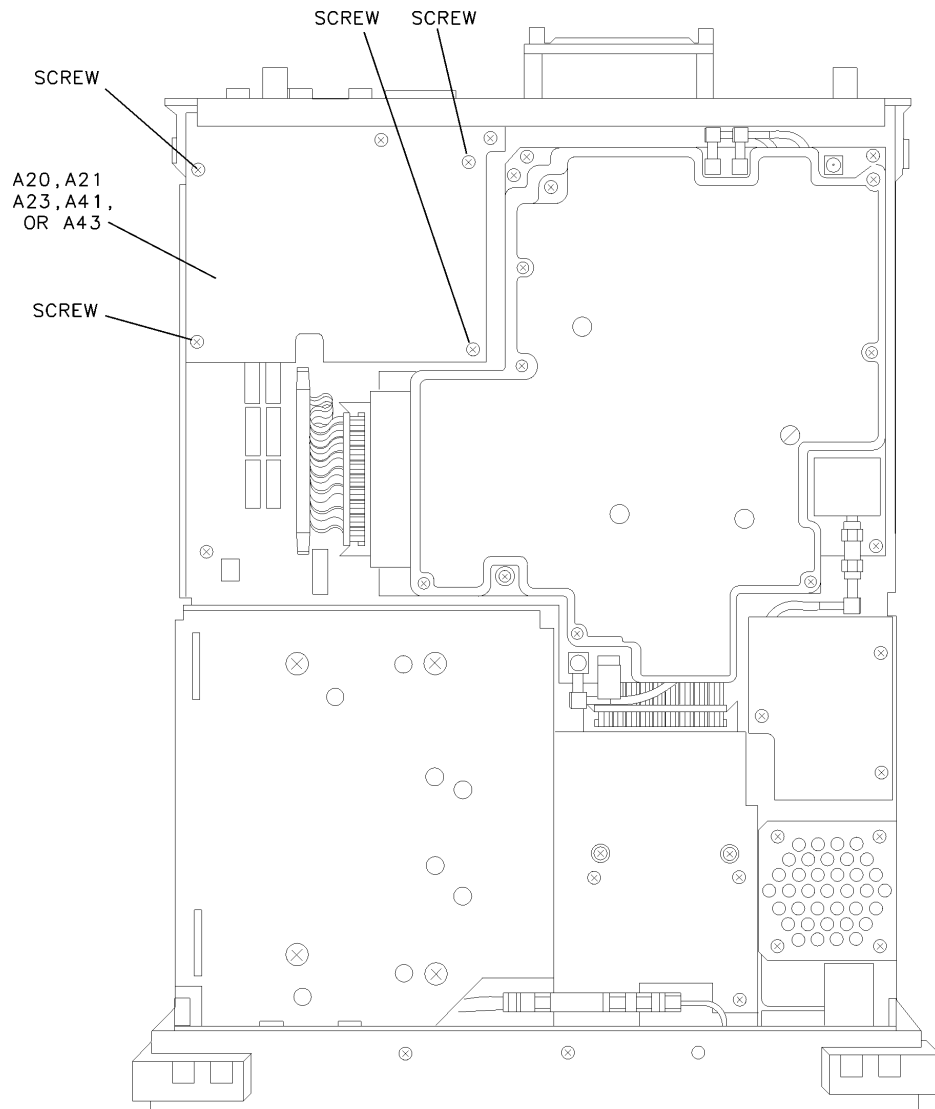
CAUTION To prevent damage to the front frame, use a soft cloth or towel between the work surface and the front frame in the following step.

3. Carefully place the analyzer on the work surface with the front frame facing down.
4. Remove the four screws and washers attaching the instrument cover to the rear frame.
5. Unscrew, but do not remove, the four rear-foot screws, using a 4-mm hex wrench.
6. Pull the instrument cover off towards the rear of the analyzer.

Installing the EPROMs

1. Place the analyzer on the worksurface with the bottom side facing up.
2. Remove the 3 screws on each side of the rear panel and gently pull the rear poanel a few centimeters away from the instrument.
3. *Option 021, 023, 024,041, or 043 only:* Remove the interface board assembly (A20, A21, A23, A41, or A43) by removing the 4 screws at the corners of the board and gently pulling the board straight up. For the location of A20, A21, A23, A41, or A43, Refer to [Figure 1](#).

Figure 1. Removing the Interface Board Assembly (Option 021, 023, 024, 041, or 043 Only)

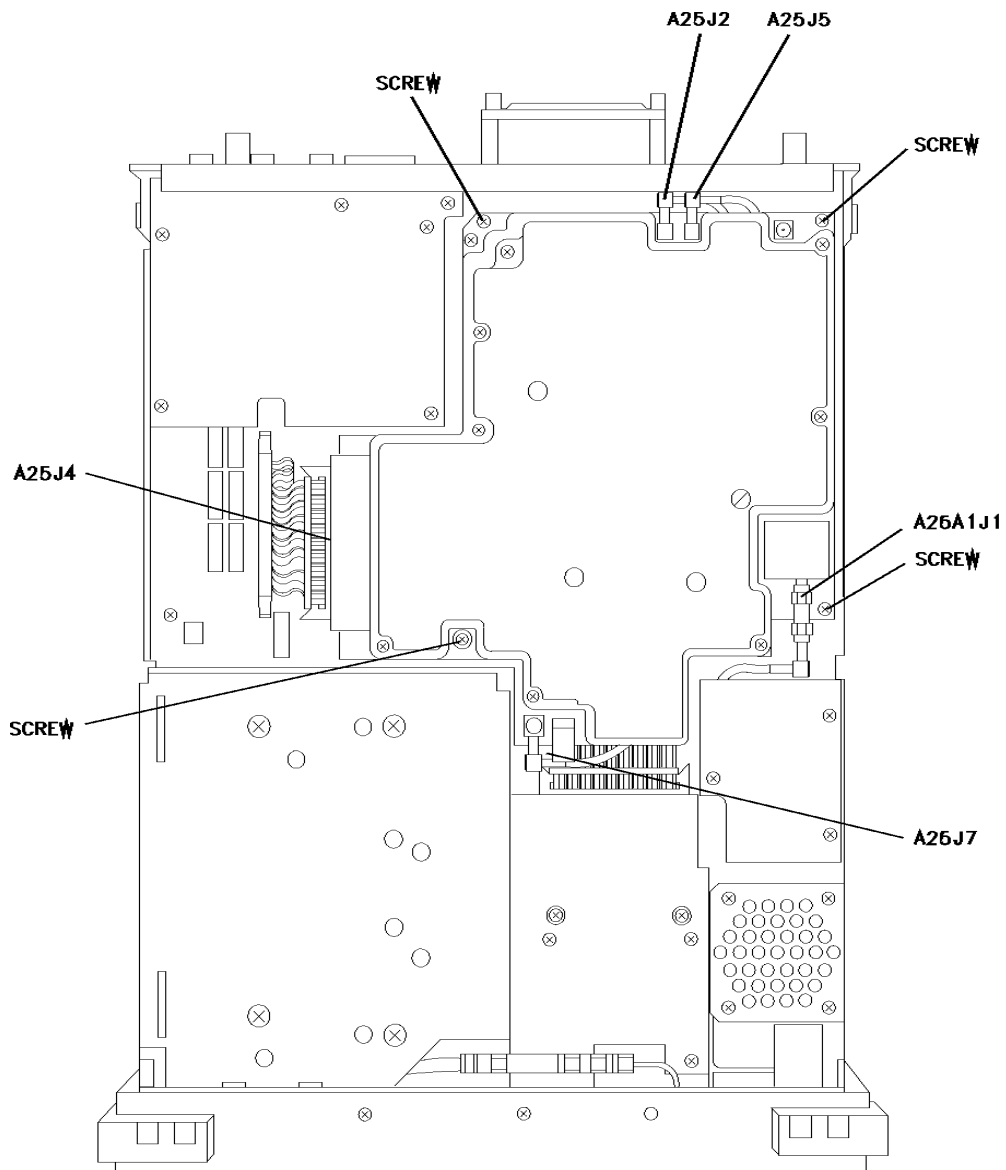


dq11

NOTE For models without counter-lock assemblies, skip steps 4 through 6.

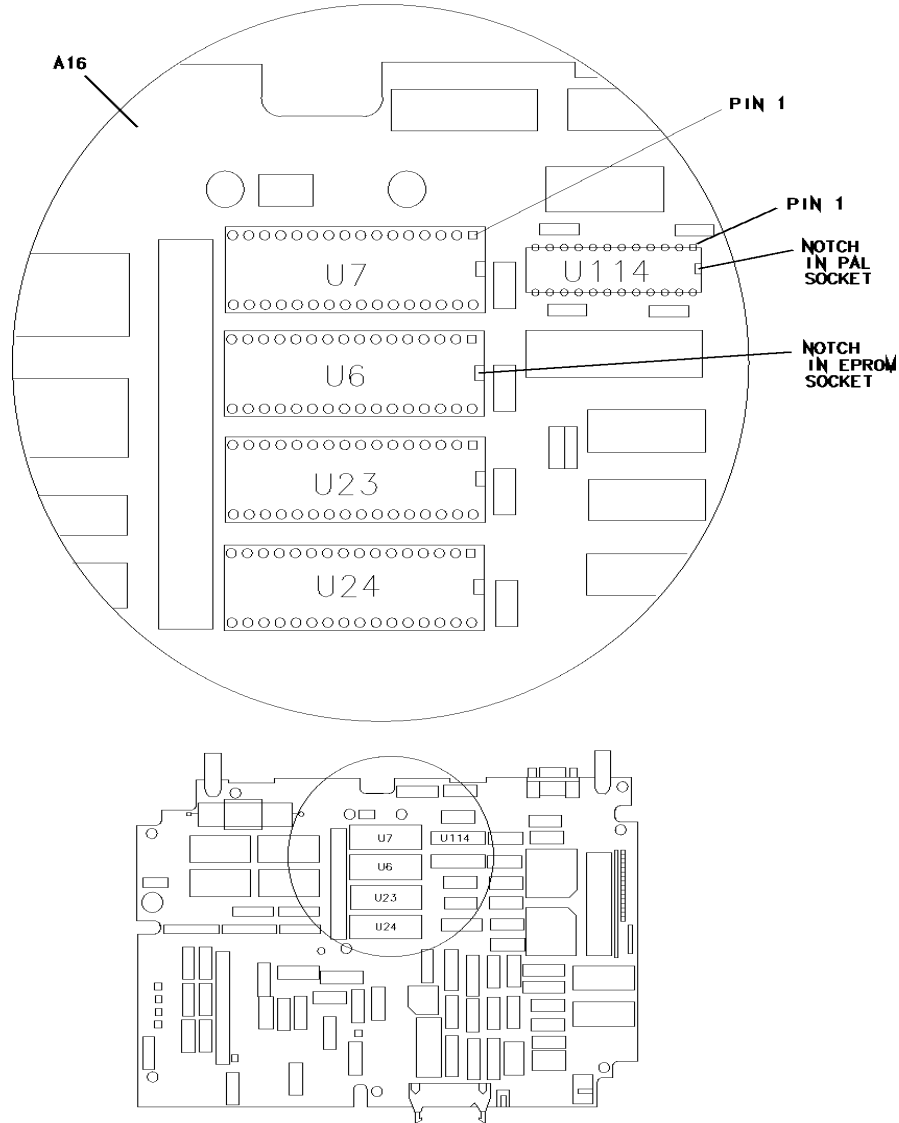
4. Disconnect the W14 ribbon cable from A25J4. See [Figure 2](#).
5. Remove the 4 screws securing the A25 counter-lock assembly. Disconnect cables A25J2, A25J5, and A25J7 from the counter-lock assembly.
6. Move A25, the counter-lock assembly, away from the analyzer chassis. (Cable A25A1J1 will still be connected to the counter-lock assembly.)

Figure 2. Removing the Counter-Lock Assembly (A25)



uq11cde1

Figure 3. Location of the EPROMs



ud281

7. Carefully pry the EPROMs upwards using a small, flat-blade screwdriver. Pull the EPROMs from their sockets evenly so that the pins at the rear of each EPROM are not bent. See [Figure 3](#).
8. Replace the EPROMs that were removed in the previous step with the EPROMs supplied in the installation kit. Make sure that the EPROMs are oriented correctly with the sockets on the processor board (A16). Match the notch at the end of each EPROM with the notch at the end of its socket. Align each pin with the opening of its pin receptacle on the socket.

NOTE For models without counter-lock assemblies, skip steps 10 and 11. Step 9 should be done **ONLY** if the serial prefix of the instrument is 3523A or 3525U or later, and the firmware datecode is 980615 or later.

9. Remove W101, a zero wait state jumper located on the A16 processor board assembly (on the right-hand side of U24). Removing this jumper will allow the instrument to run at faster speeds, especially for data acquisition and DLP applications.
10. Reconnect the cables to the counter-lock board. Because the cables lie between the counter-lock board and the processor board, the length of the cables should be against the back of the counter-lock board. See [Figure 2](#).
11. Place the counter-lock board on the chassis standoffs. Check that the cables are not pinched between the standoffs and the counter-lock board. Reinstall the 4 screws that secure the counter-lock board to the chassis.
12. *Option 021, 023, 024, 041, or 043 only:* Place the A20, A21, A23, A41, or A43 interface assembly on the analyzer chassis standoffs. Gently press down to seat the connector on the interface board into the the connector on the processor board. Reinstall the 4 screws that secure the interface board. See [Figure 1](#).
13. Attach the rear panel of the analyzer to the chassis with 3 screws on each side. Ensure that the cables are not pinched between the chassis and the rear panel.

Adjustments

1. Connect the power cable to the ac power.
2. Turn the analyzer on and let it warm up for at least 30 minutes.

NOTE A ϕ LOCK OFF message may appear on screen, but will disappear after the successful completion of the self-calibration routines.

3. Connect CAL OUT to the analyzer's input connector, using the appropriate cable and adapters.
4. Press CAL, CAL AMPTD & FREQ. Wait for the completion of the self-calibration routines.

NOTE If the error message CAL SIGNAL NOT FOUND is displayed, verify that CAL OUT is properly connected to the analyzer's input. If the connection is correct, set the user pass code by pressing **FREQUENCY, CENTER FREQ, -37 Hz**, then repeat step 4. (Enabling the pass code causes the self-calibration routine to skip the CAL OUT setup check.)

5. *HP/Agilent 8592L, 8593E, or 8596E only:* Connect 100 MHz COMB OUT to the analyzer's input, using the appropriate cable and adapters.
6. *HP/Agilent 8592L, 8593E, 8595E, or 8596E only:* Press **CAL YTF**. Wait for the completion of the CAL YTF self-calibration routine.
7. Press **CAL STORE**.
8. Press **More, CRT HORIZ POSITION**.
9. Using the analyzer knob, adjust the display's horizontal position, if necessary.
10. Press **CRT VERT POSITION**.

11. Using the analyzer knob, adjust the display's vertical position, if necessary.

12. Press **More, More, More, CAL STORE**.

Instrument Cover Replacement

1. Disconnect the analyzer from the ac power.

CAUTION To prevent damage when replacing the instrument cover, remember the following:

- Place a soft cloth or towel between the work surface and the front frame.
 - Ensure that cables do not bind between the instrument cover and the internal assemblies.
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2. Carefully place the analyzer on the work surface with the front frame facing down.

3. Replace the instrument cover, ensuring that the seam on the cover is toward the bottom of the instrument.

4. Fit the leading edge of the cover completely into the slot on the back of the front-frame assembly. The cover should fit snugly against the EMI gasket in the slot.

5. Tighten the 4 rear-foot screws with a 4-mm hex wrench.

6. Replace the 4 screws and washers attaching the cover to the rear frame.

Verification

No verification tests are necessary.