

Installation Note

High-Stability Frequency Reference Upgrade Kit

For PNA Series RF Network Analyzers (E8801A, E8802A, E8803A, N3381A, N3382A, and N3383A)

Network Analyzer Model Number	Upgrade Kit Part Number
E8801A, E8802A, E8803A N3381A, N3382A, N3383A	E8801-60105



Agilent Part Number: E8801-90025

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About the Upgrade Kit

Products affected.	E8801A, E8802A, and E8803A; all options N3381A, N3382A, and N3383A; all options
Installation to be performed by	Agilent service center, personnel qualified by Agilent, or customer
Estimated installation time	20 minutes
Estimated verification time	5 minutes

If you need assistance, refer to [“Getting Assistance from Agilent” on page 4](#).

Description of Option 1E5

An Option 1E5 analyzer is equipped with a high-stability 10 MHz frequency reference. This provides improved frequency accuracy over the standard analyzer.

Items Included in the Upgrade Kit

[Table 1](#) lists the parts included in this upgrade kit, Agilent part number E8801-60105. Check the contents of your kit against this list. If any item is missing or damaged, contact Agilent Technologies. Refer to [“Getting Assistance from Agilent” on page 4](#).

Table 1 Contents of Option 1E5 Upgrade Kit (E8801-60105)

Ref Des	Description	Qty	Part Number
	Installation note (this document)	1	E8801-90025
A10	Frequency reference board assembly	1	E8356-60010

Getting Assistance from Agilent

By internet, phone, or fax, get assistance with all your test and measurement needs.

Table 2 Contacting Agilent

Online assistance: www.agilent.com/find/assist		
United States <i>(tel)</i> 1 800 452 4844	Latin America <i>(tel)</i> (305) 269 7500 <i>(fax)</i> (305) 269 7599	Canada <i>(tel)</i> 1 877 894 4414 <i>(fax)</i> (905) 282-6495
Europe <i>(tel)</i> (+31) 20 547 2323 <i>(fax)</i> (+31) 20 547 2390	Australia <i>(tel)</i> 1 800 629 485 <i>(fax)</i> (+61) 3 9210 5947	New Zealand <i>(tel)</i> 0 800 738 378 <i>(fax)</i> (+64) 4 495 8950
Japan <i>(tel)</i> (+81) 426 56 7832 <i>(fax)</i> (+81) 426 56 7840	Singapore <i>(tel)</i> 1 800 375 8100 <i>(fax)</i> (65) 836 0252	Malaysia <i>(tel)</i> 1 800 828 848 <i>(fax)</i> 1 800 801 664
India <i>(tel)</i> 1 600 11 2929 <i>(fax)</i> 000 800 650 1101	Hong Kong <i>(tel)</i> 800 930 871 <i>(fax)</i> (852) 2506 9233	Taiwan <i>(tel)</i> 0800 047 866 <i>(fax)</i> (886) 2 25456723
Philippines <i>(tel)</i> (632) 8426802 <i>(tel)</i> (PLDT subscriber only) 1 800 16510170 <i>(fax)</i> (632) 8426809 <i>(fax)</i> (PLDT subscriber only) 1 800 16510288	Thailand <i>(tel)</i> (outside Bangkok) (088) 226 008 <i>(tel)</i> (within Bangkok) (662) 661 3999 <i>(fax)</i> (66) 1 661 3714	People's Republic of China <i>(tel)</i> (preferred) 800 810 0189 <i>(tel)</i> (alternate) 10800 650 0021 <i>(fax)</i> 10800 650 0121

Installation Procedure for the Upgrade Kit

The network analyzer must be in proper working condition prior to installing this option. Any necessary repairs must be made before proceeding with this installation.

WARNING **This installation requires the removal of the analyzer's protective outer covers. The analyzer must be powered down and disconnected from the mains supply before performing this procedure.**

Electrostatic Discharge Protection

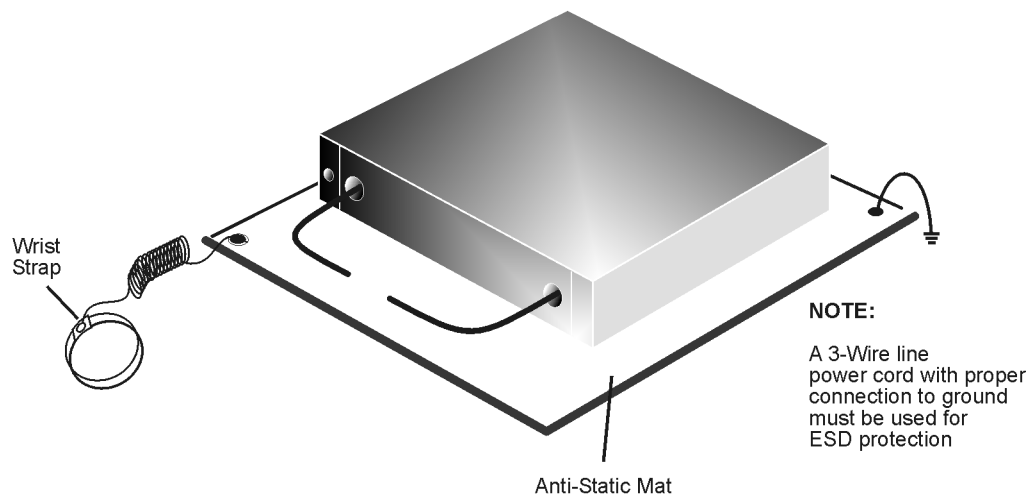
Protection against electrostatic discharge (ESD) is essential while removing or connecting cables or assemblies within the network analyzer.

Static electricity can build up on your body and can easily damage sensitive internal circuit elements when discharged. Static discharges too small to be felt can cause permanent damage. To prevent damage to the instrument:

- *always* wear a grounded wrist strap having a 1 M Ω resistor in series with it when handling components and assemblies.
- *always* use a grounded, conductive table mat while working on the instrument.
- *always* wear a heel strap when working in an area with a conductive floor. If you are uncertain about the conductivity of your floor, wear a heel strap.

Figure 1 shows a typical ESD protection setup using a grounded mat and wrist strap. Refer to “Tools and Equipment Required for the Installation” on page 6 for part numbers.

Figure 1 **ESD Protection Setup**



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Overview of the Installation Procedure

The following steps comprise the installation of the Option 1E5 upgrade kit.

1. Remove the outer and inner covers.
2. Replace the A10 frequency reference board assembly.
3. Reinstall the inner and outer covers.
4. Enable Option 1E5.
5. Verify that Option 1E5 is enabled.

Tools and Equipment Required for the Installation

Description	Qty	Part Number
T-10 TORX driver (set to 9 in-lbs)	1	N/A
T-20 TORX driver (set to 21 in-lbs)	1	N/A
ESD grounding wrist strap	1	9300-1367
5 ft grounding cord for wrist strap	1	9300-0980
2 x 4 ft conductive table mat and 15 ft grounding wire	1	9300-0797
ESD heel strap (for use with conductive floors)	1	9300-1308

Step 1. Remove the Outer and Inner Covers

Refer to [Figure 2](#) for this procedure.

Remove the Outer Cover

CAUTION This procedure is best performed with the analyzer resting on its front handles in the vertical position. *Do not place the analyzer on its front panel without the handles.* This will damage the front panel assemblies.

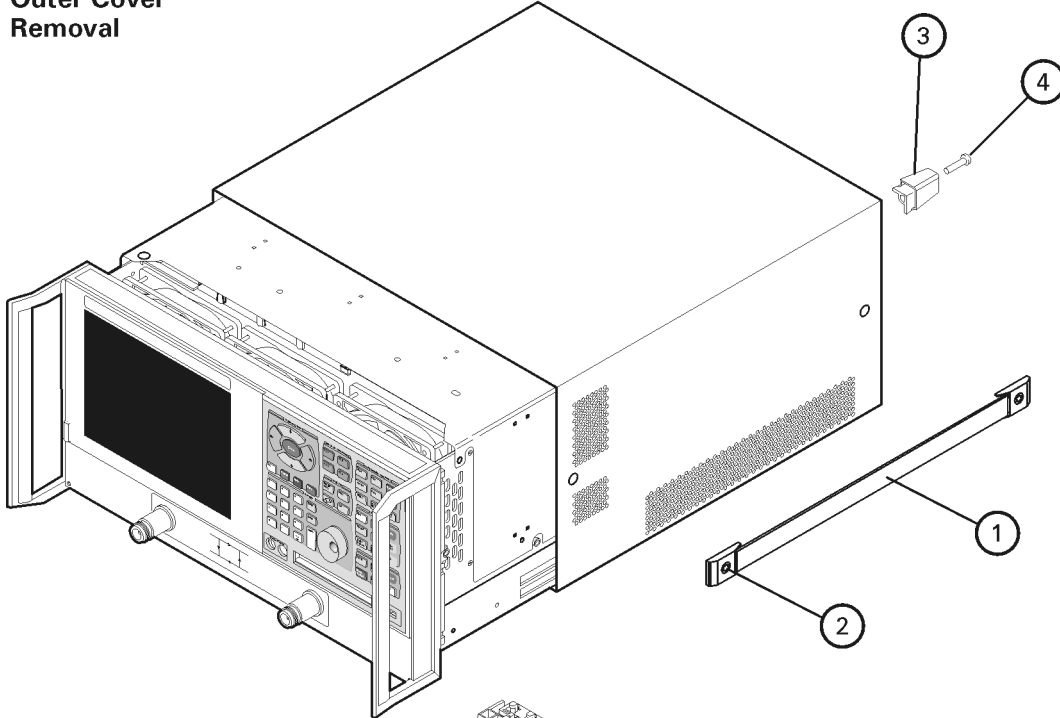
1. Disconnect the power cord (if it has not already been disconnected).
2. With a T-20 TORX driver, remove the strap handles (item ①) by loosening the screws (item ②) on both ends until the handle is free of the analyzer.
3. With a T-20 TORX driver, remove the four rear panel feet (item ③) by removing the center screws (item ④).
4. Slide the four bottom feet (item ⑤) off the cover.
5. Slide the cover off of the frame.

Remove the Inner Cover

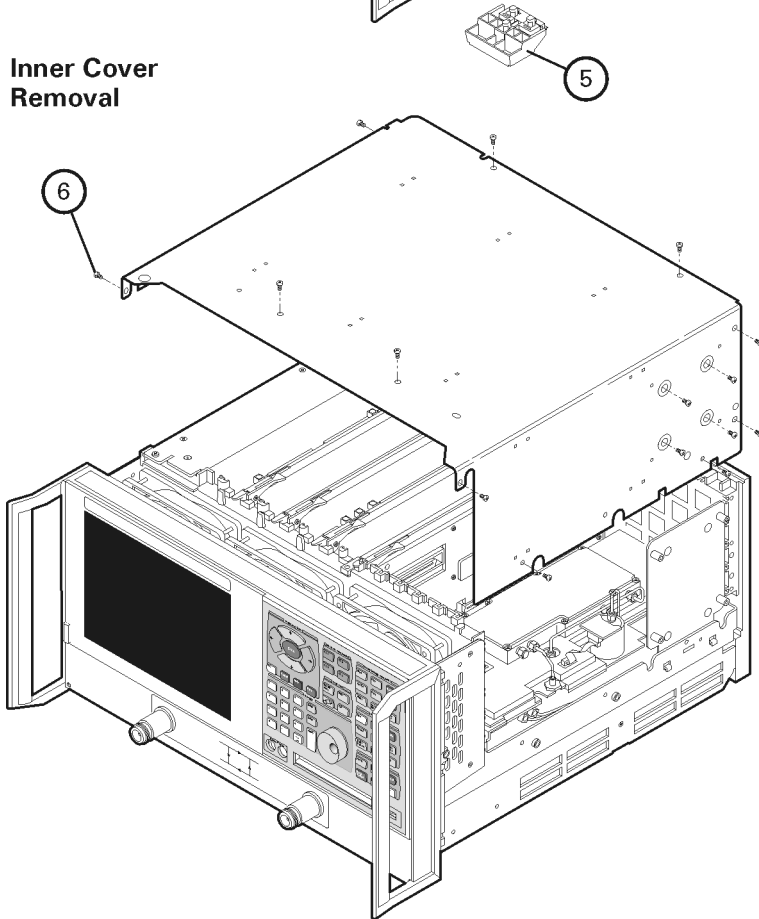
1. With a T-10 TORX driver, remove the 15 screws (item ⑥).
2. Lift off the cover.

Figure 2 Outer and Inner Cover Removal

Outer Cover Removal



Inner Cover Removal



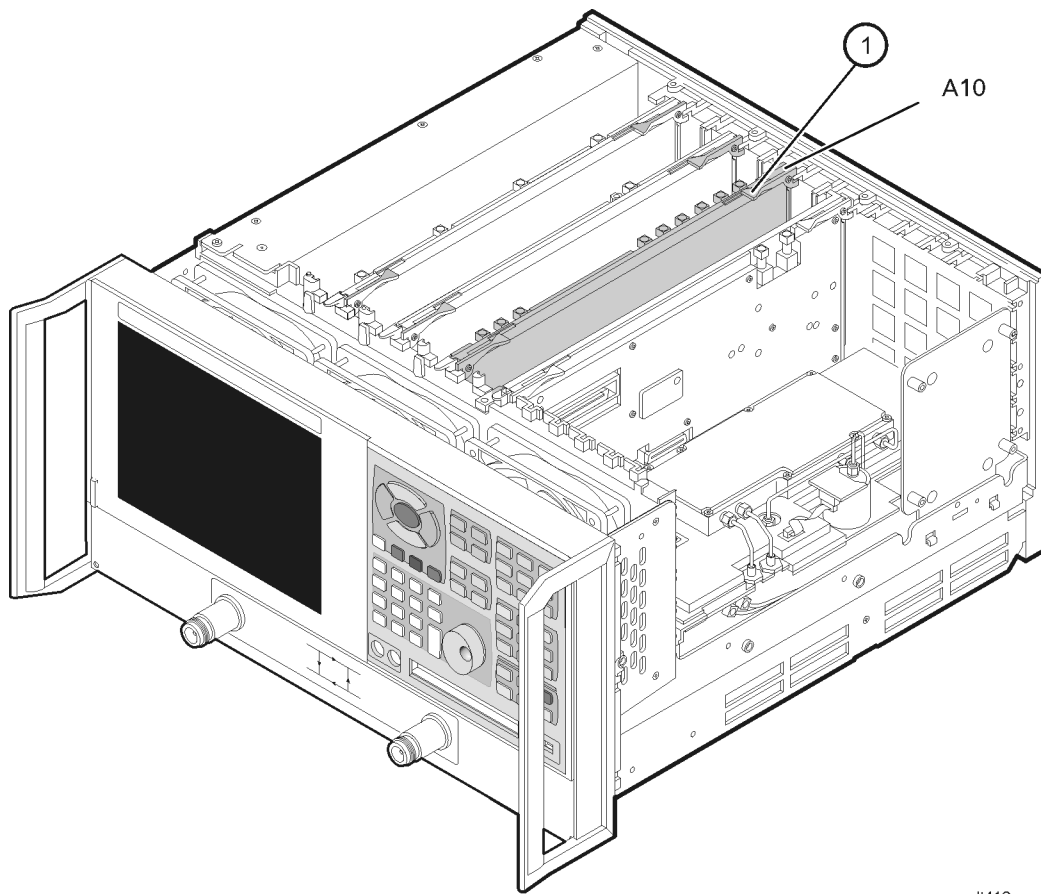
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Step 2. Replace the A10 Frequency Reference Board Assembly

Refer to [Figure 3](#) for this procedure.

1. Disconnect all flexible cables from the A10 frequency reference board assembly. Note the location of each for reconnection later.
2. Lift the two extractors (item ①), located at each end of the board assembly.
3. While holding onto the extractors, slide the board assembly out of the slot and remove it from the analyzer.
4. Align the new board assembly in the slots at each end of its installed location and lower the board assembly into the analyzer. Press down firmly on the top of the board assembly to seat it in its connector.
5. Reconnect all flexible cables to the new board assembly.

Figure 3 A10 Frequency Reference Board Assembly Replacement



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Step 3. Reinstall the Inner and Outer Covers

Refer to [Figure 4](#) for this procedure.

Reinstall the Inner Cover

1. Place the inner cover on the analyzer. There are two alignment pins on the front frame that must be aligned with holes in the cover.
2. With a T-10 TORX driver, install the 15 screws (item ①).

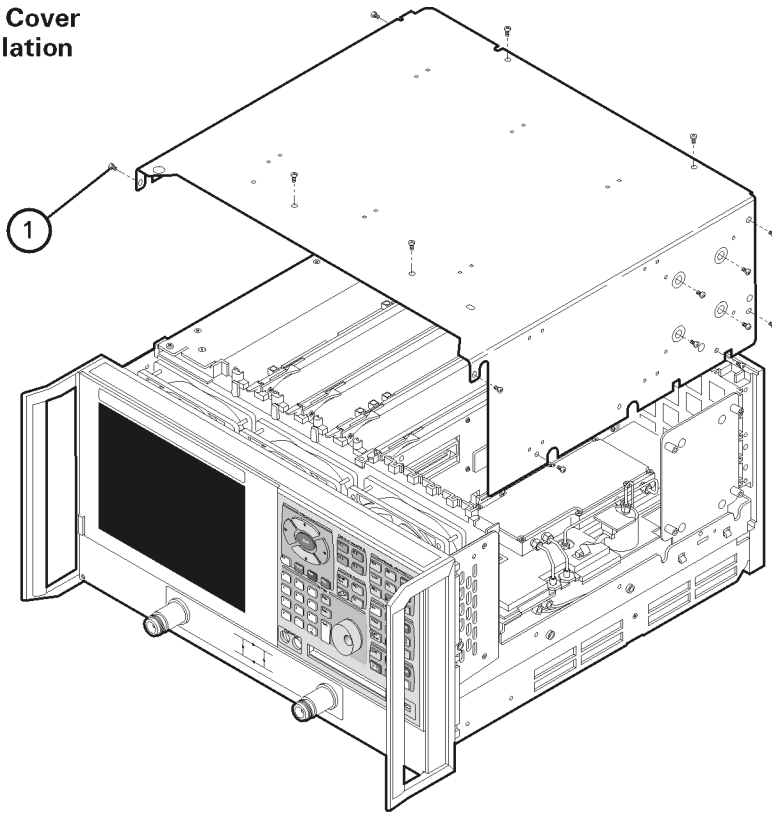
Reinstall the Outer Cover

CAUTION This procedure is best performed with the analyzer resting on its front handles in the vertical position. *Do not place the analyzer on its front panel without the handles.* This will damage the front panel assemblies.

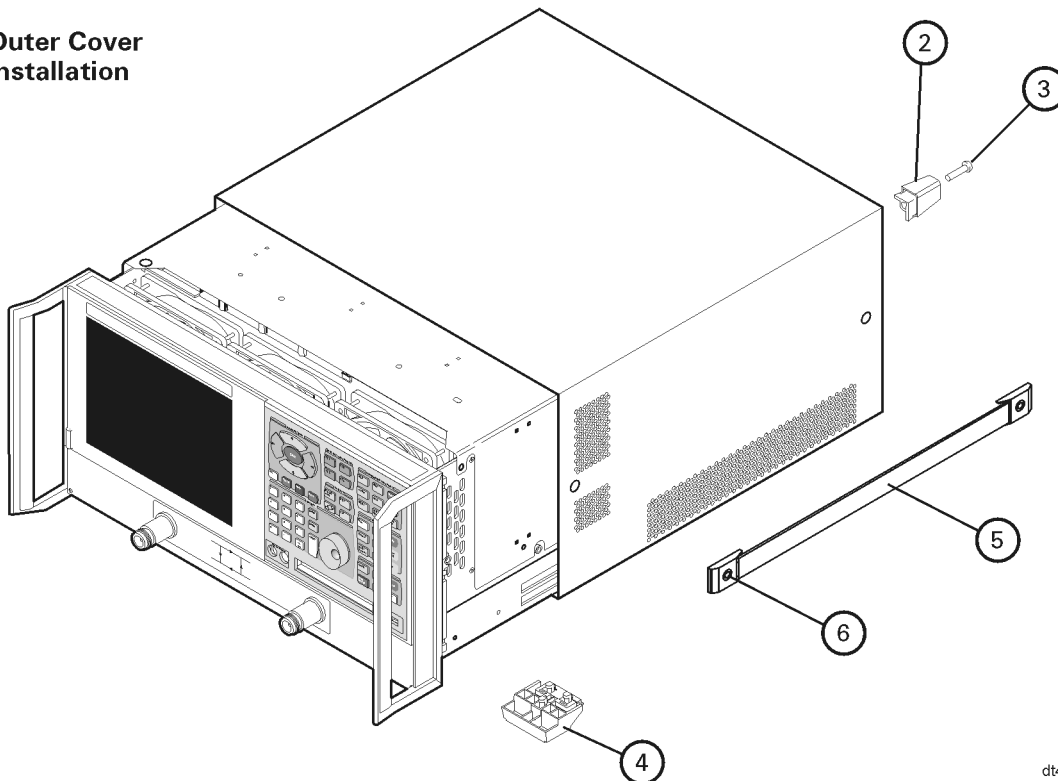
1. Slide the cover onto the frame.
2. With a T-20 TORX driver, install the four rear panel feet (item ②) by installing the center screws (item ③).
3. Slide the four bottom feet (item ④) onto the cover.
4. With a T-20 TORX driver, install the strap handles (item ⑤) by tightening the screws (item ⑥) on both ends.

Figure 4 Inner and Outer Cover Reinstallation

Inner Cover installation



Outer Cover Installation



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Step 4. Enable Option 1E5

Procedure Requirements

- The analyzer must be powered up and operating to perform this procedure.
- The Network Analyzer program must be running.
- A mouse is recommended for this procedure but is not required.

Mouse Procedure

1. On the analyzer's **System** menu, point to **Service**, and then click **Option Enable**.
2. In the **Select Desired Option** list, click **1E5 - Precision Reference**.
3. Click **Install**.
4. Click **Yes** in answer to the displayed question in the **Restart Analyzer?** box.
5. When the installation is complete, click **Exit**.

Front Panel Keys Procedure

1. In the **COMMAND** block, press **Menu/Dialog**.
2. In the **NAVIGATION** block, press the Right Tab and Arrows to move over to the **System** menu and down to the **Service** selection. Press the Right Tab to display the extended menu and the Arrows to select **Option Enable**. Press **Click**.
3. Tab to the **Select Desired Option** list, and press Arrows to select **1E5 - Precision Reference**.
4. Tab to **Install**, and then press **Click**.
5. Click **Yes** in answer to the displayed question in the **Restart Analyzer?** box.
6. When the installation is complete, in the **COMMAND** block, press **OK** (or tab to **OK**, and then press **Click**).

Step 5. Verify that Option 1E5 Is Enabled

Procedure Requirements

- The analyzer must be powered up and operating to perform this procedure.
- The Network Analyzer program must be running.
- A mouse is recommended for this procedure but is not required.

Mouse Procedure

1. On the analyzer's **Help** menu, click **About Network Analyzer**.
2. Verify that "1E5" is listed after "Options:" in the display. Click **OK**.

NOTE If Option 1E5 has not been enabled, perform step 4 again. If the option is still not enabled, contact Agilent Technologies. Refer to ["Getting Assistance from Agilent" on page 4](#).

Front Panel Keys Procedure

1. In the **COMMAND** block, press **Menu/Dialog**.
2. In the **NAVIGATION** block, press the Right Tab and Arrows to move over to the **Help** menu, and down to the **About Network Analyzer** selection. Press **Click**.
3. Verify that "1E5" is listed after "Options:" in the display. In the **COMMAND** block, press **OK** (or tab to **OK**, and then press **Click**).

NOTE If Option 1E5 has not been enabled, perform step 4 again. If the option is still not enabled, contact Agilent Technologies. Refer to ["Getting Assistance from Agilent" on page 4](#).
