

Installation Note

Add Option H85 High Power Configuration Capability Upgrade Kit

To Upgrade PNA E8362/3/4B or E8362/3/4C to include Option H85

**Upgrade Kit Order Numbers: E8362BU-H85, E8363BU-H85,
E8364BU-H85, E8362CU-H85, E8363CU-H85 and E8364CU-H85**



Agilent Kit Number: E8364-60109

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E8364-90041

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Safety Notes

The following safety notes are used throughout this document. Familiarize yourself with each of these notes and its meaning before performing any of the procedures in this document.

WARNING	Warning denotes a hazard. It calls attention to a procedure which, if not correctly performed or adhered to, could result in injury or loss of life. Do not proceed beyond a warning note until the indicated conditions are fully understood and met.
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CAUTION	Caution denotes a hazard. It calls attention to a procedure that, if not correctly performed or adhered to, could result in damage to or destruction of the instrument. Do not proceed beyond a caution sign until the indicated conditions are fully understood and met.
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Description of the Upgrade

This upgrade adds Option H85 (high power configuration) to your E8362/3/4B or E8362/3/4C PNA by removing the bias tees and replacing the associated semirigid cables. A new lower front panel overlay is also installed and a cover placed over the rear-panel bias connectors and fuse holders.

Getting Assistance from Agilent

Installing this upgrade kit requires special skills and experience. If you think you may not be qualified to do the work, or need advice, contact Agilent.

Contacting Agilent

Assistance with test and measurements needs and information on finding a local Agilent office are available on the Web at:

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

If you do not have access to the Internet, please contact your Agilent field engineer.

NOTE	In any correspondence or telephone conversation, refer to the Agilent product by its model number and full serial number. With this information, the Agilent representative can determine whether your product is still within its warranty period.
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Getting Prepared

To successfully install this upgrade kit, you will need the following:

- A license key - refer to “[License Key Redemption](#)” below.
- A PDF copy or a paper copy of the PNA Service Guide - refer to “[Downloading the Online PNA Service Guide](#)” below.
- An ESD-safe work area - refer to “[Protecting Your Workspace from Electrostatic Discharge](#)” below.
- Correct tools - refer to “[Tools Required for the Installation](#)” on page 5.
- Enough time - refer to “[About Installing the Upgrade](#)” on page 6.
- Test equipment for the post-upgrade adjustments and full instrument calibration. To view the equipment list, click the Chapter 3 PDF bookmark “[Tests and Adjustments](#)” in the online Service Guide¹.

License Key Redemption

NOTE	The enclosed Option Entitlement Certificate is a receipt, verifying that you have purchased a licensed option for the PNA of your choice. You must now use an Agilent Web page to request a license key for the instrument that will receive the option.
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To enable the option product, you must request a license key from: <http://www.agilent.com/find/softwarelicense>. To complete the request, you will need to gather the following information:

- From the certificate
 - Order number
 - Certificate number
- From your instrument
 - Model number
 - Serial number
 - Host ID

The instrument information is available on the network analyzer – on the analyzer’s **Help** menu, click **About Network Analyzer**.

If you provide an email address, Agilent will promptly email your license key. Otherwise, you will your receive your license key via postal mail.

1. See “[Downloading the Online PNA Service Guide](#)” on page 5.

Downloading the Online PNA Service Guide

To view the online Service Guide for your PNA model number, use the following steps:

1. Go to www.agilent.com.
2. In the Search box, enter the model number of the analyzer (Ex: E8362B) and click **Search**.
3. Click [Technical Support > Manuals](#).
4. Click [Service Manual](#).
5. Click the service guide title to load the PDF file.
6. When the PDF of the Service Guide is displayed, scroll through the Contents section bookmarks to locate the information needed.

Protecting Your Workspace from Electrostatic Discharge

For information, click on the Chapter 1 PDF bookmark, “[Electrostatic Discharge Protection](#)” in the online Service Guide¹.

ESD Equipment Required for the Installation

Description	Agilent Part Number
ESD grounding wrist strap	9300-1367
5-ft grounding cord for wrist strap	9300-0980
2 x 4 ft conductive table mat and 15-ft grounding wire	9300-0797
ESD heel strap (for use with conductive floors)	9300-1308

Tools Required for the Installation

Description	Qty	Part Number
T-10 TORX driver - set to 9 in-lbs (1.02 N.m)	1	N/A
T-20 TORX driver - set to 21 in-lbs (2.38 N.m)	1	N/A
5/16-in (8 mm) nutsetter or open end torque wrench - set to 10 in-lbs (1.13 N.m)	1	N/A
5/16-in (8 mm) nutsetter or open end torque wrench - set to 21 in-lbs (2.38 N.m)	1	N/A

CAUTION Use a 5/16-in torque wrench set to 10 in-lbs on all cable connections except the front panel and some rear panel cable connectors. Torque these connections to 21 in-lb.

About Installing the Upgrade

Products affected.	E8362/3/4B and E8362/3/4C with options 014, 016, 080, 081, and UNL
Installation to be performed by	Agilent service center or personnel qualified by Agilent
Estimated installation time	1.5 hours
Estimated adjustment time	0.5 hour
Estimated full instrument calibration time	4 hours

Items Included in the Upgrade Kit¹

Check the contents of your kit against the following list. If any part is missing or damaged, contact Agilent Technologies. Refer to [“Getting Assistance from Agilent” on page 3](#).

Table 1 Contents of Upgrade Kit E8364-60109

Ref Desig.	Description	Qty	Part Number
–	Installation note (this document)	1	E8364-90041
–	Manual supplement for E836xB–H85	1	E8364-90027
–	Manual supplement for E836xC–H85	1	E8364-90040
–	Cover, for bias connectors and fuse holders (Installed only on analyzers without bias tees.)	1	E8364-00018
–	Machine screw, M3.0 x 8, pan head (To attach rear-panel cover for bias connectors and fuse holders.)	4	0515-0372
–	Lower front panel overlay	1	E8364-80013
Items for E8362B and E8362C ONLY:			
W63	Port 1 CPLR THRU to A25 test port 1 coupler	1	E8362-20018
W64	Port 2 CPLR THRU to A26 test port 2 coupler	1	E8362-20019
Items for E8363/4B and E8363/4C ONLY:			
W63	Port 1 CPLR THRU to A25 test port 1 coupler	1	E8364-20073
W64	Port 2 CPLR THRU to A26 test port 2 coupler	1	E8364-20074

1. In addition to the upgrade kit, the shipment includes an Option Entitlement Certificate. Refer to [“License Key Redemption” on page 4](#) for important information about this certificate.

Installation Procedure for the Upgrade

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.**

Overview of the Installation Procedure

- Step 1. Obtain a Keyword and Verify the Information.
- Step 2. Remove the Outer Cover.
- Step 3. Remove the Front Panel Assembly.
- Step 4. Remove the Bias Tees and Existing Cables.
- Step 5. Install the New Semirigid Cables.
- Step 6. Replace the Lower Front Panel Overlay.
- Step 7. Reinstall the Front Panel Assembly.
- Step 8. Reinstall the Outer Cover.
- Step 9. Install Cover Over Bias Connectors and Fuse Holders.
- Step 10. Enable Option H85.
- Step 11. Perform Post-Upgrade Adjustments and Calibration.

Step 1. Obtain a Keyword and Verify the Information

Follow the instructions on the Option Entitlement Certificate supplied to obtain a license key for installation of this upgrade. Refer to [“License Key Redemption” on page 4](#).

Verify that the model number, serial number, and option number information on the license key match those of the instrument on which this upgrade will be installed.

If the model number, serial number, or option number do not match those on your license key, you will not be able to install the option. If this is the case, contact Agilent for assistance before beginning the installation of this upgrade. Refer to [“Contacting Agilent” on page 3](#).

Once the license key has been received and the information verified, you can proceed with the installation at step 2.

Step 2. Remove the Outer Cover

For instructions, click the Chapter 7 PDF bookmark [“Removing the Covers”](#) in the online Service Guide¹.

1. See [“Downloading the Online PNA Service Guide” on page 5](#).

Step 3. Remove the Front Panel Assembly

For instructions, click the Chapter 7 PDF bookmark [“Removing and Replacing the Front Panel Assembly”](#) in the online Service Guide¹.

Step 4. Remove the Bias Tees and Existing Cables

For instructions, click the Chapter 7 PDF bookmark [“Removing and Replacing the A38 and A39 Bias Tees \(Option UNL\)”](#) in the online Service Guide¹. Follow the instructions as written to remove both bias tees except do not install new bias tees. Reinstall the brackets without bias tees. Bias tees are not used in the Option H85 configuration. The bias tees (A38 and A39) and their interconnecting cables (W55/W83 and W56/W84) can be discarded.

To see an image showing the location of these cables, click the Chapter 6 PDF bookmark [“Bottom Semi-Rigid Cables, Options UNL/014/016/080/081”](#) in the online Service Guide¹.

Step 5. Install the New Semirigid Cables

Install the following semirigid cables in the order listed. To see an image showing the location of these cables, click the Chapter 6 PDF bookmark [“Bottom Semi-Rigid Cables, Options 014/080/081”](#) in the online Service Guide¹. (This image is used because there are no bias tees in this option combination.) New parts are listed in [Table 1 on page 6](#).

E8362B/C:

- W63 (E8362-20018) Front panel Port 1 CPLR THRU to A25 test port 1 coupler
- W64 (E8362-20019) Front panel Port 2 CPLR THRU to A26 test port 2 coupler

E8363/4B/C:

- W63 (E8364-20073) Front panel Port 1 CPLR THRU to A25 test port 1 coupler
- W64 (E8364-20074) Front panel Port 2 CPLR THRU to A26 test port 2 coupler

NOTES:

1. W63 replaces W55, A38, and W83 that were removed in the previous step.
2. W64 replaces W56, A39, and W84 that were removed in the previous step.

Step 6. Replace the Lower Front Panel Overlay

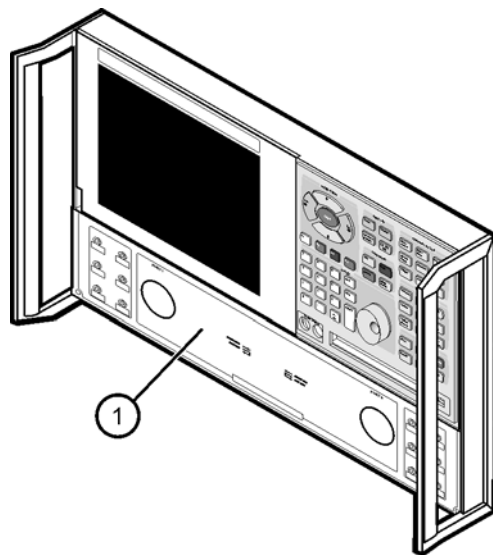
Remove the Old Overlay

1. From the back side of the front panel, use a blunt object in one of the cutouts in the lower frame to push the overlay (item ①) and separate it from the front panel.
2. From the front side of the front panel, pull the overlay completely off and discard it.
3. If any adhesive remains on the front panel surface, it can be removed by rubbing it with your finger. Do not use a sharp object to remove this adhesive. If necessary, the surface can be cleaned with isopropyl alcohol.

Install the New Overlay

1. Remove the protective backing from the new front panel overlay to expose the adhesive.
2. Starting from either the left or right side, *loosely* place the overlay in the recess on the lower front panel, ensuring that it fits tightly against the recess edges.
3. Once the overlay is properly aligned, press it firmly onto the surface to secure it.

Figure 1 Front Panel Overlay Replacement



dt510a

NOTE The figure above shows the E836xB front panel and floppy disk drive. The E836xC front panel has a slightly different appearance and does not include a floppy disk drive.

Step 7. Reinstall the Front Panel Assembly

For instructions on reinstalling the front panel assembly, click the Chapter 7 PDF bookmark [“Removing and Replacing the Front Panel Assembly”](#) in the online Service Guide¹.

Step 8. Reinstall the Outer Cover

For instructions, click the Chapter 7 PDF bookmark [“Removing the Covers”](#) in the online Service Guide¹. Refer to the [“Replacement Procedure”](#).

Step 9. Install Cover Over Bias Connectors and Fuse Holders

To see an image showing the location of the cover and its attachment screws, click the Chapter 7 PDF bookmark [“Removing and Replacing the USB Hub”](#) in the online Service Guide¹.

Using the four screw provided, install the cover provided on the lower rear panel of the instrument to cover up the bias fuse holders and connectors. Since the bias tees have been removed, these connectors and fuse holders are no longer functional.

1. See [“Downloading the Online PNA Service Guide”](#) on page 5.

Step 10. Enable Option H85

Procedure Requirements

- The network analyzer must be powered up and operating to perform this procedure.
- The Network Analyzer program must be running.
- A keyboard and mouse must be connected to the network analyzer.

Option Enable Procedure

1. To start the option enable utility, press UTILITY **System**, then **Service**, then **Option Enable**. An option enable dialog box will appear.
2. Click the arrow in the **Select Desired Option** box. A list of available options will appear.
3. In the **Select Desired Option** list, click **H85 - Delete Bias Ts**.
4. Using the keyboard, enter the license key in the box provided. The license key is printed on the the license message you received from Agilent. Enter this key *exactly* as it is printed on the message.
5. Click **Enable**.
6. Click **Yes** in answer to the displayed question in the **Restart Analyzer?** box.
7. When the installation is complete, click **Exit**.

Option Verification Procedure

Once the analyzer has restarted and the Network Analyzer program is again running:

1. On the analyzer's **Help** menu, click **About Network Analyzer**.
2. Verify that "H85" is listed after "Options:" in the display. Click **OK**.

NOTE	If Option H85 has not been enabled, perform the "Option Enable Procedure" again. If the option is still not enabled, contact Agilent Technologies. Refer to "Getting Assistance from Agilent" on page 3.
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Step 11. Perform Post-Upgrade Adjustments and Calibration

Adjustments

The following adjustments must be made due to the hardware changes of the analyzer.

- source adjustment
- receiver adjustment

These adjustments are described in the PNA Service Guide and in the PNA on-line HELP. A list of equipment required to perform these adjustments is also found in the service guide.

To view this service guide information, click the Chapter 3 PDF bookmark [“Tests and Adjustments”](#) in the online Service Guide¹.

After the specified adjustments have been performed, the analyzer should operate and phase lock over its entire frequency range.

Operator’s Check

Perform the Operator’s Check to check the basic functionality of the analyzer. For instructions, click the Chapter 3 PDF bookmark [“Tests and Adjustments”](#) in the online Service Guide¹.

If you experience difficulty with the basic functioning of the analyzer, contact Agilent. Refer to [“Contacting Agilent” on page 3](#).

Calibration

Although the analyzer functions, its performance relative to its specifications has not been verified. It is recommended that a full instrument calibration be performed using the analyzer’s internal performance test software. To view information on the performance test software in the service guide, click the Chapter 3 PDF bookmark [“Tests and Adjustments”](#) in the online Service Guide¹.

1. See [“Downloading the Online PNA Service Guide” on page 5](#).