

Installation Note

Extended Frequency Range Upgrade Kit

Upgrade Kit Number: N5230-60111

For ALL N5230A/C 6 GHz PNA-L

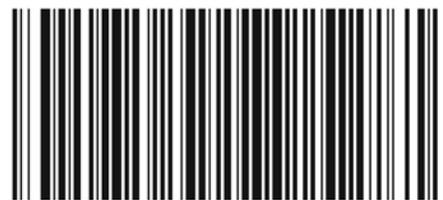


Agilent Part Number: N5230-90015

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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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Getting Assistance from 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.

Description of the Upgrade

This upgrade adds Option F13 which extends the upper frequency limit of your PNA to 13.5 GHz.

About Installing the Upgrade

Products affected.	N5230A/C; 6 GHz microwave network analyzers
Installation to be performed by	Agilent service center or personnel qualified by Agilent
Estimated installation time	15 minutes
Estimated adjustment time	45 minutes
Estimated full instrument calibration time	4.5 hours

Items Included in the Upgrade Kit

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

Table 1 Contents of Upgrade Kit N5230-60111

Quantity	Description	Part Number
1	Installation note (this document)	N5320-90015
1	Model number nameplate (for 13.5 GHz analyzer N5230A)	N5240-80003
1	Model number nameplate (for 13.5 GHz analyzer N5230C)	N5230-80020

Installation Procedure for the Upgrade

Installation Requirements

- It is important that you read this entire installation note to familiarize yourself with the procedure before beginning the actual installation of 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.
- This installation does not require removal of the analyzer's protective outer covers.
- The analyzer must be powered up and operating to perform this installation. The Network Analyzer program must be running.
- This installation requires that a keyboard and a mouse be connected to the network analyzer.

Step 1. Obtain a Keyword

Follow the instructions on the keyword Entitlement Certificate supplied to obtain a keyword for installation of this upgrade.

Once the keyword has been obtained, you can proceed with the installation at step 2.

Step 2. Enable Option F13

1. On the analyzer's **System** menu, point to **Service**, and then click **Option Enable**.
2. In the **Select Desired Option** list, click **F13 - 13.5 GHz Operation**.
3. Using the keyboard, enter the keyword you obtained in the box provided. Enter this keyword *exactly* as provided.
4. Click **Enable**.
5. Click **Yes** in answer to the displayed question in the **Restart Analyzer?** box.
6. When the installation is complete, click **Exit**.

Step 3. Verify that Option F13 Is Enabled

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 "F13" is listed after "Options:" in the display. Click **OK**.

NOTE

If Option F13 has not been enabled, perform the "[Step 2. Enable Option F13](#)" procedure again. If the option is still not enabled, contact Agilent Technologies. Refer to "[Getting Assistance from Agilent](#)" on page 3.

Step 4. Replace the Nameplate

Refer to [Figure 1](#) for this procedure. New parts are listed in [Table 1 on page 3](#).

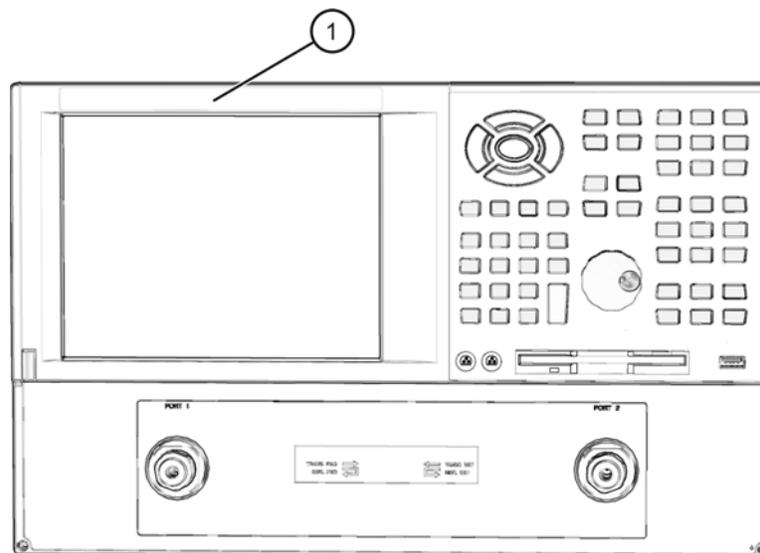
Remove the Old Nameplate

1. Using a sharp object such as a knife blade, lift one end of the old nameplate (item ①). Be careful not to scratch the painted surface.
2. Using your fingers, pull the nameplate completely off of the front panel 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 Nameplate

1. Remove the protective backing from the new nameplate to expose the adhesive. Avoid touching the adhesive with your fingers as this may affect its ability to adhere to the front panel surface.
2. *Loosely* align the new nameplate over the recess in the front panel and apply lightly.
3. Once the nameplate is properly aligned, press it firmly onto the surface to secure it.

Figure 1 Nameplate Replacement



N5230_015_01

NOTE The figure above shows the N5230A front panel and floppy disk drive. The N5230C front panel has a slightly different appearance and does not include a floppy disk drive.

Step 5. Perform Post-Upgrade Adjustments and Calibration

Adjustments

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

- LO power
- source calibration
- receiver calibration

These adjustments are described in the PNA service guide and in the PNA on-line HELP. The equipment required to perform these adjustments is listed below.

Equipment Required for Post-Upgrade Adjustments

Equipment Type	Model or Part Number	Alternate Model or Part Number
Power meter	E4418B/E4419B	E4418A/E4419A
Power sensor, 3.5 mm	E4413A	8485A
Adapter, 3.5 mm (f) to 3.5 mm (f)	83059B	85052-60012
RF cable, 3.5 mm (f) to 3.5 mm (f)	85131C	85131E

Calibration

The analyzer should now operate and phase lock over its entire frequency range.

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

- 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 PNA performance test software.
- Refer to the analyzer’s service guide for information on the performance test software.