

Keysight Licensed Functionality Upgrade Kit

For ALL License-Enabled Options

For ALL N522xA Microwave Network Analyzers

Notices

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Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

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Installation Note

Description of the Upgrade

This installation note applies to all of the upgrades in “**Items Included in the Upgrade Kit**” on page 7. Do not be alarmed if your upgrade does not appear in the list. Additional upgrades may have been introduced since this document was printed.

Refer to “**About Installing the Upgrade**” on page 7.

Getting Assistance from Keysight

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

Contacting Keysight

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

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

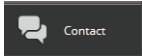
If you do not have access to the Internet, please contact your Keysight field engineer.

NOTE

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

If You Have Problems With the Upgrade Kit Contents

Keysight stands behind the quality of the upgrade kit contents. If you have problems with any item in the kit, refer to www.keysight.com and the **Contact**

Keysight () link.

Getting Prepared

CAUTION

The PNA contains extremely sensitive components that can be ruined if mishandled. Follow instructions carefully when making cable connections, especially wire harness connections.

The person performing the work accepts responsibility for the full cost of the repair or replacement of damaged components.

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 7.
- Enough time - refer to [“About Installing the Upgrade”](#) on page 7.
- Test equipment for the post-upgrade adjustments and full instrument calibration. To view the equipment list, click the Chapter 3 bookmark “Tests and Adjustments” in the PDF Service Guide¹.

1. See [“Downloading the Online PNA Service Guide”](#) on page 6.

License Key Redemption

NOTE

The only difference between an A model license key redemption and a B model is that the A model uses a 12-character license key and the B model uses a license key file.

NOTE

Ensure that you are connected to an external server, before attempting to download your email and license key file.

NOTE

The enclosed Software Entitlement Certificate is a receipt, verifying that you have purchased a licensed option for the PNA of your choice. You must now use a Keysight Web page to request a license key for the instrument that will receive the option.

To enable the option product, you must request license key(s) (A models) from the Keysight Software Manager:

<http://www.keysight.com/find/softwaremanager>.

To complete the request, you will need to gather the following information:

- From the certificate
 - Order number
 - Certificate number

- From your instrument

(Instrument information is available in the network analyzer - on the toolbar, click Help, then click About Network Analyzer.)

- Model number
 - Serial number
- From the online Keysight HostID utility

Part of the OEC procedure to obtain the 12-digit license key online requires you to provide the HostID number of the PNA. This HostID number is NOT the one currently shown on the PNA. To find your new HostID, go to <https://na.support.keysight.com/pna/upgrades.html> and, using the HostID utility, enter the PNA serial number and your new, upgraded PNA-X model number - N2221A, N5222A, N5241A, N5242A, or N5249A.

- Host ID

Using the information just gathered, you must request license key(s) for your instrument from the Keysight Software Manager:

<http://www.keysight.com/find/softwaremanager>.

You will need to provide an email address, Keysight will promptly email your A model license key(s). Refer to **“License Key Redemption” on page 5**.

Verify the License Contents

Refer to the license message you received from Keysight:

If the model number, serial number, or option number do not match those on the license message you received from Keysight, you will not be able to install the license key file. If this is the case, contact Keysight for assistance. Refer to **“Getting Assistance from Keysight” on page 3.**

Downloading the Online PNA Service Guide

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

1. Go to **www.keysight.com**.
2. In the Search box, enter the model number of the analyzer (Ex: N5242A) and click Search.
3. Click Technical Support > Manuals.
4. Click Service Manual.
5. Click the service guide title to download 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 bookmark, “Electrostatic Discharge Protection” in the PDF Service Guide¹.

ESD Equipment Required for the Installation

Description	Keysight 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

1. See **“Downloading the Online PNA Service Guide” on page 6.**

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

CAUTION

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

About Installing the Upgrade

Products affected	All N522xA microwave network analyzers
Installation to be performed by	Keysight service center, personnel qualified by Keysight, or customer
Estimated installation time	5 minutes
Estimated verification time	5 minutes

Items Included in the Upgrade Kit

Check the contents of your kit against the following list. If any of these items is missing, contact Keysight Technologies. Refer to **“Getting Assistance from Keysight” on page 3**.

Table 1 Contents of Upgrade Kit

Quantity	Description	Part Number
1	Installation Note (this document)	N5225-90110
1	Option Entitlement Certificate	5964-5145

List of Upgrades to Which This Installation Note Applies

This installation note applies to all of the upgrades in the following list. Do not be alarmed if your upgrade does not appear in the list. Additional upgrades may have been introduced since this document was printed.

If your upgrade kit contains only a Option Entitlement Certificate and this installation note, the instructions contained here will allow you to install your upgrade.

- 007 - Add automatic fixture removal
- 008 - Add pulsed-RF measurements
- 010 - Add time domain operation
- 020 - Add IF inputs for antenna and mm-wave
- 021 - Add pulse modulator to internal 1st source
- 022 - Add pulse modulator to internal 2nd source
- 025 - Add four internal pulse generators
- 028 - Add noise figure measurements using standard receivers
- 080 - Add frequency offset
- 082 - Add scalar-calibrated converter measurements
- 083 - Add frequency converter measurements
- 084 - Add embedded LO application
- 086 - Add gain compression application
- 087 - Add intermodulation distortion application
- 088 - Add source phase control
- 089 - Add differential and I/Q devices application
- 090 - Add spectrum analyzer upgrade option
- 093 - Add extended spectrum analyzer (mm) up to 110 GHz (N5222A, N5224A, N5225A, and N5227A only)
- 094 - Add extended spectrum analyzer (mm) above 110GHz (N5222A, N5224A, N5225A and N5227A only)
- 118 - Add fast CW mode
- 301 - Add application for use with standard CalPods
- 302 - Add application for use with temperature-characterized CalPods
- 303 - Add multiport capability for CalPods
- 304 - Add CalPod as ECal Capability
- 460 - Add integrated TMSA application

Description of the Upgrade

List of Upgrades to Which This Installation Note Applies

551 - Add N-port calibrated measurements

897 - Add perpetual Keysight inclusive calibration

898 - Add perpetual standards compliant calibration

Installation Procedure for the Upgrade

Installation Requirements

- 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.

Enable the Option

1. Press **System**, then **Service**, then **Option Enable**.
2. In the Select Desired Option list, click the option listed on the license message you received from Keysight. For example **080 - Frequency Offset**.
3. Using the keyboard, enter the license key in the box provided. The license key is printed on the license message you received from Keysight. Enter this key exactly as it is printed on the message.
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**.

Verify that the Option Is Enabled

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

1. On the toolbar, click **Help**, then click **About Network Analyzer**.
2. Verify that the option you enabled is listed after "Options:" in the display. Click **OK**.

NOTE

If the option has not been enabled, perform the "Enable the Option" procedure again. If the option is still not enabled, contact Keysight Technologies. Refer to "Getting Assistance from Keysight" on page 3.

This information is subject to change
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