Windows 7 Operating System Upgrade Kit

To Upgrade PNA-X N524xA and N5264A, PNA N522xA, and PNA-L N5231/2/4/5/9A

Upgrade Kit Model Number: N8983A

KEYSIGHT TECHNOLOGIES

Installation Note

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.

WARNING

A **WARNING** 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 personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Windows 7 Operating System Upgrade Kit
Upgrade Kit Model Number: N8983A
Installation Note

Description of the Upgrade

This upgrade kit changes the PNA operating system from Windows XP (32-bit) to Windows 7 (64-bit). For compatibility, some older N5242A models may require new touchscreen hardware (not included), and many PNA-X models may require a new CPU board assembly (included with N8983A-PC6). For more information, refer to "Before You Install This Upgrade Kit" on page 7. The N8983A-SP5 includes the current version of the SPAM board.

User CalSets and Cal Registers that you want to keep must be converted in order to be read by Windows 7, as per "Step 4. Copy Any Existing Files You Want to Keep" on page 8.

Getting Assistance from Keysight

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 Keysight.

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.

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:

- An ESD-safe work area - refer to "Protecting Your Workspace from Electrostatic Discharge" below.
- Enough time - refer to "About Installing the Upgrade" on page 5.

If you must replace the CPU board assembly (as described in "Step 2. If Necessary, Order a Replacement CPU Board Assembly" on page 7), you will also need the following:

- A PDF copy or a paper copy of the PNA Service Guide - refer to "Downloading the Online PNA Service Guide" below.
- Correct tools - refer to "Tools Required for the Installation" 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.keysight.com**.
2. In the Search box, enter the model number of the analyzer (Ex: N5227A) 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 Guide[1].

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

Tools Required for the Installation

No tools are required, unless the CPU board assembly is replaced (refer to "Step 2. If Necessary, Order a Replacement CPU Board Assembly" on page 7), in which case the Service Guide instructions list the tools required.

About Installing the Upgrade

Products affected	N522xA, N5231/2/4/5/9A, N524xA, and N5264A
Installation to be performed by Keysight Service Center or qualified personnel in ESD safe environment.	Solid State Drive (SSD) replacement CPU Board Assembly replacement
Installation to be performed by Keysight Service Center only	Touchscreen hardware replacement
Converting and Saving User Calibration Files and Data Files	Allow up to 30 minutes
Estimated installation time	Solid State Drive replacement only: 5 minutes CPU Board Assembly replacement: add 5 minutes Touchscreen hardware replacement: add 2 hours
Estimated post-installation procedures time	5 minutes SPAM board replacement: add 1 to 2 hours

1. See "Downloading the Online PNA Service Guide" on page 4.

Items Included in the Upgrade Kit

Check the contents of your kit against the following list. If any part is missing or damaged, contact Keysight Technologies. Refer to "Getting Assistance from Keysight" on page 3.

Table 1 Contents of Upgrade Kit N8983A

Description	Qty	Part Number
Installation note (this document)	1	N8983-90001
Solid state drive (SSD) for 2.0 GHz i7 CPU	1	N5242-60132
Windows 7 Certificate of Authenticity label (installed on SSD chassis next to thumbscrew)	1	N/A
Option PC6:		
CPU board assembly, Intel ® 2.0 GHz Core ® i7	1	W1312-60196
Option SP5:		
Signal Processing ADC Module (SPAM) board 5 (shield tabs removed)	1	N5240-60078
IF multiplexer board P603 to A16 SPAM board J2	1	N5247-60023
IF multiplexer board P203 to A16 SPAM board J5	1	N5247-60024

Before You Install This Upgrade Kit

Step 1. If Necessary, Replace the Touchscreen Hardware for Early N5242A Models

If your N5242A PNA has a numeric serial number prefix below MY4822, SG4822, and US4812, and still has the original touchscreen, it will no longer be possible to calibrate the touchscreen after the upgrade. If this is a concern, return your PNA to Keysight to have the touchscreen and associated parts replaced.

NOTE **Before returning your PNA to Keysight, complete steps 2, 3, and 4**

If accurate touchscreen operation is not a concern, keep your existing touchscreen, but make sure you calibrate it one last time before installing this upgrade kit.

Step 2. If Necessary, Order a Replacement CPU Board Assembly

If you purchased N8983A-PC6 or have an N522xA or N5231/2/4/5/9A PNA model, you do NOT need to order a new CPU board assembly. Proceed to Step 3.

For N524xA and N5264A models, only CPU part number W1312-60196 is compatible with this upgrade kit. This is included with N8983A-PC6.

If you have an N524xA, or N5264A PNA model, you must verify that your CPU board assembly part number is W1312-60196. On the rear panel of the PNA, locate the assembly containing the LAN and USB ports - this is the CPU assembly. A label[1] below the USB ports contains the CPU board assembly part number. If you have a different part number, and you did not order N8983A-PC6, contact Keysight to order part number W1312-60196.

NOTE **If you choose to have Keysight Service Center personnel replace your CPU board assembly, instruct them NOT to install an SSD in the assembly. You will install the SSD shipped with this upgrade kit in your new CPU board assembly.**

1. If the label is missing, you can learn your System CPU version using the PNA software. On the PNA front panel, press Help > About Network Analyzer. In the window displayed, find “System CPU Version.” If the value is below 6.0, you must replace your CPU board assembly. Contact Keysight to order part number W1312-60196.

Step 3. If Necessary, Download PNA Firmware for Your Existing Windows XP Drive

Before you install this upgrade kit, it is strongly recommended that you have firmware revision A.09.90.05 (or later, but within the A.09.90.xx range) installed in your PNA. If already installed, proceed to Step 4.

Windows XP and the Windows 7 drives require the PNA internal flash memory to have different formats. PNA firmware revision A.09.90.08 (or later, but within the A.09.90.xx range) and Windows 7 can recognize both formats and act accordingly.

If older PNA firmware is installed and the old Windows XP drive is reused after this upgrade kit is installed, the PNA will not function, errors will be generated, and the current contents of the flash memory will be corrupted, making any recovery extremely difficult.

To learn which firmware revision is currently loaded in your PNA, press **Help > About Network Analyzer**. In the window displayed, find "Application Code Version."

Download firmware at no charge at:
http://na.support.keysight.com/pna/firmware.

Step 4. Copy Any Existing Files You Want to Keep

Upgrading to Windows 7 will not affect the PNA calibration or any installed permanent options, however all temporary options will be lost. If the loss of temporary options is an issue, then print or copy the text file gen.lic to some other media so that the keywords can later be reinstalled on the Windows 7 drive. This file is located in C:\Program Files\Keysight\Network Analyzer. You may also want to copy other existing files from your XP drive to some other media before you install the Windows 7 drive. The following table lists the locations where these files can be found on the XP drive and where they should be located on the Windows 7 drive.

NOTE

User CalSets and Cal Registers cannot be copied to the new drive. Any User CalSets and Cal Registers you want to keep must be converted to ".cal" or ".csa" files. To do this, each one must be recalled using File > Recall and stored as a ".cal" or ".csa" file using File > Save As. For more information, read "Save and Recall a File" in PNA Help.

Table 1 Files to Copy Before Installing the Windows 7 Drive

File Type	Location on Windows XP Drive	Location on Windows 7 Drive	Notes
State Files (.csa, .cst, .sta, .cal)	C:\Program Files\Keysight\Network Analyzer\Documents	C:\Users\Public\Documents\Network Analyzer	Copy from XP location to Win7 location
Result Files (.snp, .csv, .cti)	C:\Program Files\Keysight\Network Analyzer\Documents	C:\Users\Public\Documents\Network Analyzer	Copy from XP location to Win7 location
Mixer Files (.mxr, mxrx)	C:\Program Files\Keysight\Network Analyzer\Mixer	C:\Users\Public\Documents\Network Analyzer\Mixer	Copy from XP location to Win7 location
Device Driver Files for DC or Generic Sources	C:\Program Files\Keysight\Network Analyzer\Drivers	C:\Users\Public\Documents\Network Analyzer\Drivers	Copy from XP location to Win7 location
Disk Based ECal User Characterization Files (.euc)	C:\Program Files\Keysight\Network Analyzer\ECal User Characterizations	C:\Users\Public\Documents\Network Analyzer\ECal User Characterizations	Copy from XP location to Win7 location
Noise ENR Files (.enr)	C:\Program Files\Keysight\Network Analyzer\Documents\Noise	C:\Users\Public\Documents\Network Analyzer\Noise	Copy from XP location to Win7 location
User Cal Kits (.wks)	C:\Program Files\Keysight\Network Analyzer\PnaCalKits\User\userkits_7.50.wks	Hidden Folder	In the Win7 PNA, use the “Open...”button at the top of the Edit Cal Kits dialog to browse to the “.wks” file you copied from your Windows XP drive. Select the “*.wks” file type filter in the drop-down menu. Select your “.wks” file to load all your cal kits.
Color Scheme	C:\Program Files\Keysight\Network Analyzer\Documents\Colors	C:\Users\Public\Documents\Network Analyzer\Colors	Copy from XP location to Win7 location

Upgrade Procedure

NOTE 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.

1. Confirm that you have the correct touchscreen display installed – for information, refer to "Step 1. If Necessary, Replace the Touchscreen Hardware for Early N5242A Models" on page 7.
2. Confirm that you have the correct CPU board assembly installed in your PNA, or that you have received a new CPU board assembly, either in the N8983A-PC6, or shipped from Keysight Support Parts Organization (SPO). If you must replace the CPU board assembly, follow the instructions in "Removing and Replacing the CPU Board Assembly," located in chapter 7 of the Service Guide.
3. If you purchased N8983A-SP5:
    a. Install the new SPAM board. Refer to the instructions located in chapter 7 of the Service Guide.
    b. If your PNA is a 2-port model, replace two flex cables with those included in the kit. See the cable descriptions in "Items Included in the Upgrade Kit" on page 6 of this document. For a graphic showing cable locations, refer to the chapter 6 of the Service Guide.
4. Replace the Windows XP drive with the new Windows 7 drive included in this upgrade kit using the following instructions. If you have not done this before, or you want to see a graphic, refer to "Removing and Replacing the Hard Disk Drive (HDD)," located in chapter 7 of the Service Guide.
    a. Power off the PNA.
    b. Remove all USB devices except the mouse and keyboard from the PNA.
    c. Remove the power cord from the PNA.
    d. Loosen the thumbscrew on the installed SSD and remove the SSD from the drive bay of the CPU board assembly.
    e. Insert the new, supplied SSD into the drive bay of the CPU board assembly and hand tighten the thumbscrew on the SSD.
    f. Reinsert the power cord to the PNA.
    g. Verify that there are no USB devices connected to the PNA except a mouse and keyboard.
    h. Power on the PNA.
5. The PNA will go through its initialization process. This will take about 10 minutes and may involve as many as five reboots. Do not proceed until all activity has stopped.

6. The touchscreen will likely be uncalibrated and reversed left-to-right – this is normal. Calibrate the touchscreen by pressing **System** > **Touchscreen** > **Calibrate Touchscreen**. Follow the instructions displayed.
7. If desired, copy any files you saved earlier to their new locations on the Windows 7 drive - see Table 1 on page 9.
8. Set aside the old Windows XP drive (and CPU board assembly, if replaced) in case you later discover you need a file from the old drive.

NOTE If, after you install the Windows 7 drive, you need to access some files on the old XP drive, use a USB 2.5-inch hard drive enclosure. These are inexpensive and are very simple to use. Just make sure you get an enclosure that matches your existing hard drive interface – either SATA (slide-in drive) or PATA (internal drive).

9. The PNA does not come with any antivirus software installed. You may want to install an antivirus program before connecting the PNA to the Internet. You may also want to download and install any recent Windows Updates.
10. This upgrade kit contains PNA firmware revision A.10.00.xx. You may want to verify that this is the most recent firmware revision available for Windows 7 at: http://na.support.keysight.com/pna/firmware.
11. The upgrade is now completed, and the PNA is ready for use.

NOTE You may notice that the Windows User Access Control (UAC) will prompt you for permission to install programs or make other critical changes. While this feature can be turned off, this is not recommended due to security concerns

NOTE Firmware for Windows 7 will always be A.10.00.00 or higher. Firmware for Windows XP will always be below A.09.99.99. You cannot run firmware below A.10.00.00 on a Windows 7 PNA. Likewise, you cannot run firmware A.10.00.00 or above on a Windows XP PNA.

NOTE For many years now, the administrator user name has been “pna-admin” and the password has been “keysight”. In Windows 7, the user name will remain the same, but the password has changed. All PNAs with Windows 7 will use the default lower-case password of “pna”. If the short length violates your company policy, it can be lengthened.

NOTE The Windows Properties dialog box (to access, right-click **Computer**, then click **Properties**) does not indicate Windows 7. Instead, it shows “Windows Embedded Standard.” This is Windows 7 made specifically for embedded systems such as the PNA.

NOTE 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 information is subject to change without notice.
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