

Keysight Technologies
N9030B Signal Analyzer

Option 107
Audio Input and Digitizer
Upgrade Kit

Notices

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Option 107, Audio Input and Digitizer Upgrade Kit

Products Affected:	N9030B, PXA Signal Analyzer
Serial Numbers:	All
Option	107
To Be Performed By:	(X) Keysight Service Center (X) Personnel Qualified by Keysight (X) Customer
Estimated Installation Time:	1.0 Hours
Estimated Adjustment Time:	0.0 Hours
Estimated Verification Time ^a :	0.5 Hours

a. To ensure that this newly installed option is functioning properly, the procedure that follows includes the requirement of performing certain adjustments and performance verification tests. However, the completion of these tests does not guarantee that the instrument meets all advertised specifications.

Software and test equipment is required for making adjustments and for performance verification testing.

Information on how to obtain this software can be found at:

www.keysight.com/find/calibrationsoftware

While Keysight does recommend that a full calibration be performed after the installation of this upgrade, the end user must ultimately determine whether they want this service or not. If a full calibration is required, arrangements regarding the level of calibration must be made between the end user and the calibration provider.

Option 107, Audio Input and Digitizer Upgrade Kit

Introduction

This kit provides all parts and instructions necessary to install Option 107, Audio Input and Digitizer, into the Keysight N9030B.

NOTE

1. This upgrade kit is **not compatible** with N9030B PXA signal analyzers with any of the following options currently installed:
 - N9030B-B5X - 510 MHz Analysis Bandwidth
 - N9030B-BBA - I/Q Baseband Inputs
 2. This upgrade kit installation requires that you re-install instrument software. The latest revision of the PXA Signal Analyzer software may be downloaded from http://www.keysight.com/find/xseries_software. The instrument software must be installed AFTER the hardware in the kit is installed. Follow the procedure in this document for redeeming and installing the option upgrade license key.
 3. The option is licensed for one instrument model/serial number combination. The license key will only install on the designated instrument.
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Installation Kit Parts List

Quantity	Description	Keysight Part Number
1	Screw, FLT-HD Torx T10 M3 x 0.5 (6 mm long)	0515-1227
1	Lock Washer, Internal tooth	2190-0068
1	Hex Nut 15/32-32 Interface Board	2950-0035
1	Coaxial Cable Assembly w/Toroids	N9020-60344
1	Cover Plate, Audio	N9030-00004
1	PCA, Audio Digitizer	N9030-60047
1	Overlay, Audio Input	N9030-80062
1	Installation Note	this note
1	Option Upgrade Entitlement Certificate	n/a

Option 107, Audio Input and Digitizer Upgrade Kit

Tools Required

- T-10 Torx Driver
- T-20 Torx Driver
- 5/16-inch torque wrench
- 1/4-inch open end wrench
- 1/4-inch socket on 4 lb torque wrench
- scissors or knife
- diagonal cutters
- USB storage device with > 2 GB free memory

WARNING

Before you disassemble the instrument, turn the power switch to Standby, wait until the instrument has completely shut down, and unplug the instrument. Failure to unplug the instrument can result in personal injury.

CAUTION

Electrostatic discharge (ESD) can damage or destroy electronic components. All work on electronic assemblies should be performed at a static-safe workstation. Refer to the documentation that pertains to your instrument for information about static-safe workstations and ordering static-safe accessories.

Installation Procedure

CAUTION

If the instrument is placed on its face during any of the following procedures, be sure to use a soft surface or soft cloth to avoid damage to the front panel, keys, or input connector.

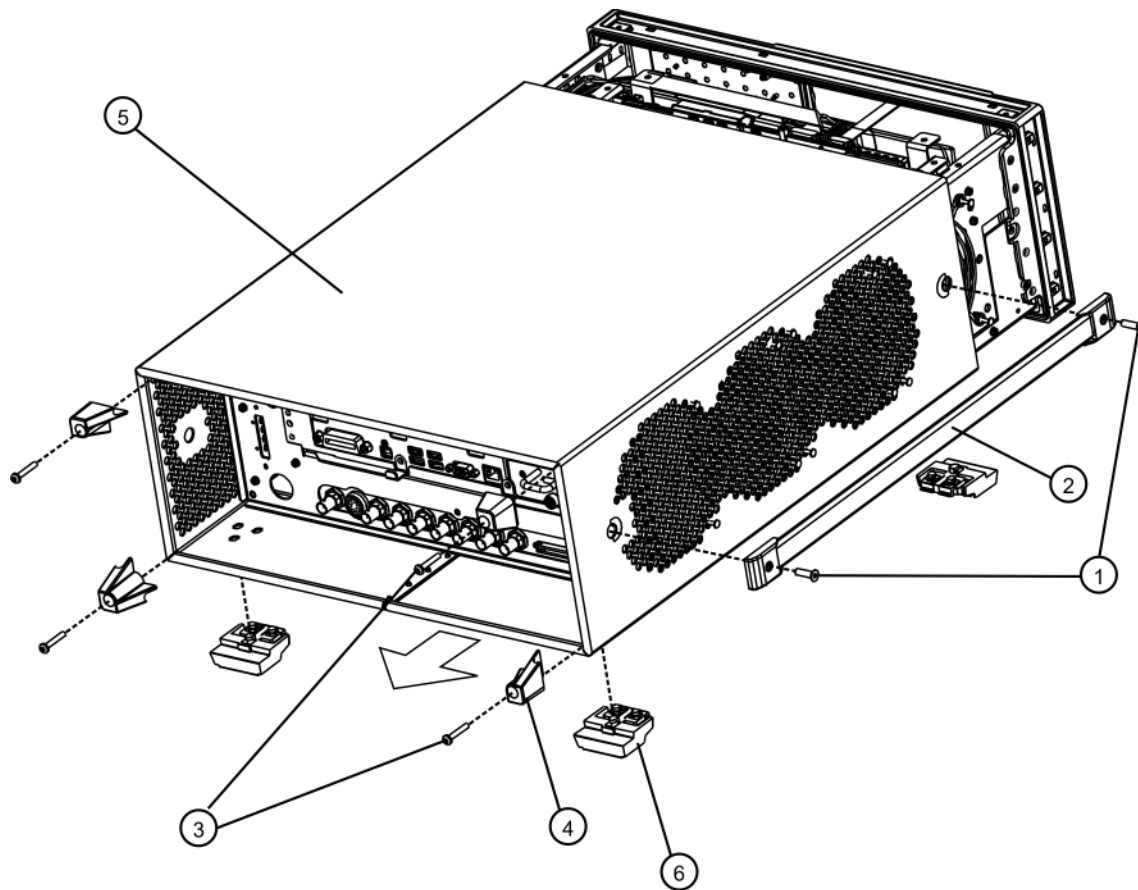
NOTE

Make sure any adapters on the front panel are removed.

Instrument Cover Removal

1. Power down the instrument and wait for the standby light to come on. Disconnect the instrument from ac power.
2. Refer to **Figure 1**. Using the T-20 driver, remove the 4 screws (1) (two on each side) that attach the strap handles (2) on each side of the instrument.
3. Remove the four key locks from the instrument four bottom feet.
4. Remove the four instrument bottom feet.
5. Using the T-20 driver, remove the four screws (including washers) (3) that hold the rear feet (4) in place.
6. Pull the instrument cover (5) off towards the rear of the instrument.

Figure 1 Instrument Outer Case Removal

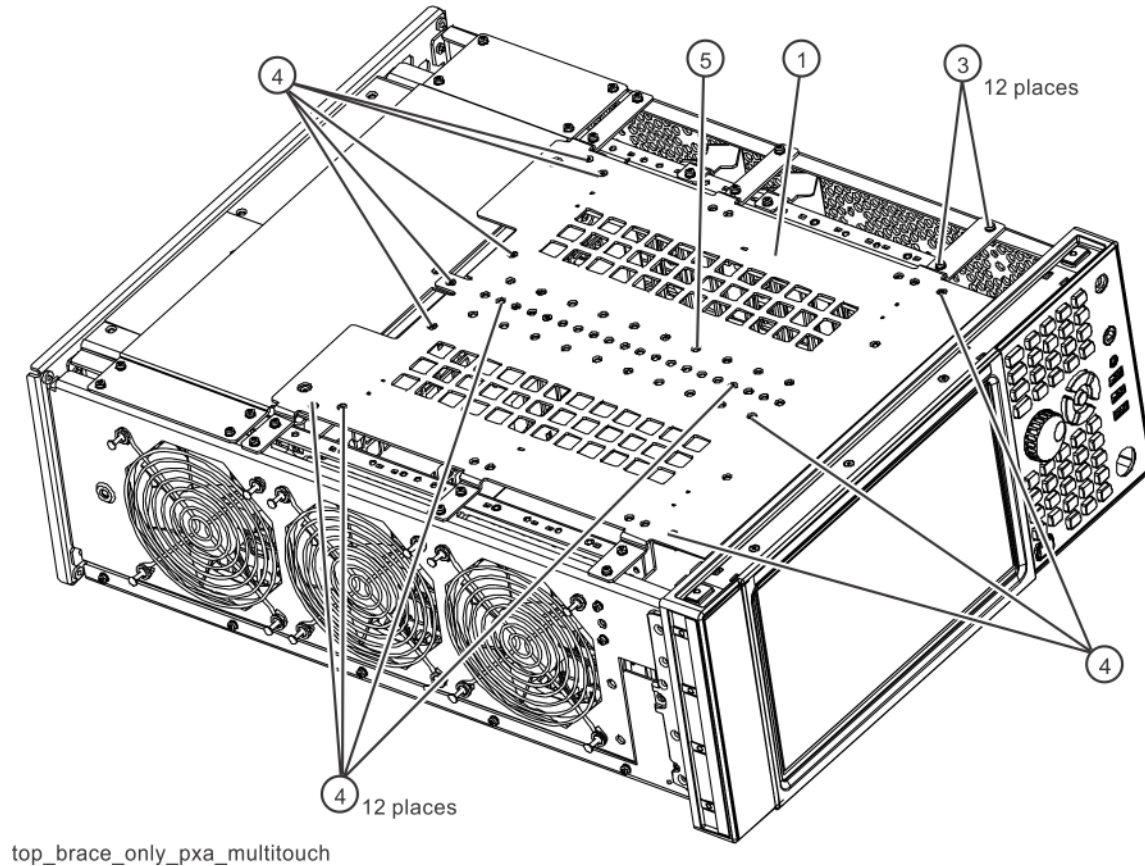


outer_case_pxa

Top Brace Removal

1. Refer to **Figure 2**. To remove the top brace (1), use the T-10 driver to remove the twelve panhead screws (3) (0515-0372) attaching the top brace to the chassis. Remove the twelve screws (fourteen screws with Option B1X) (4) (0515-1946) attaching the top brace to the boards.

Figure 2 Top Brace Removal

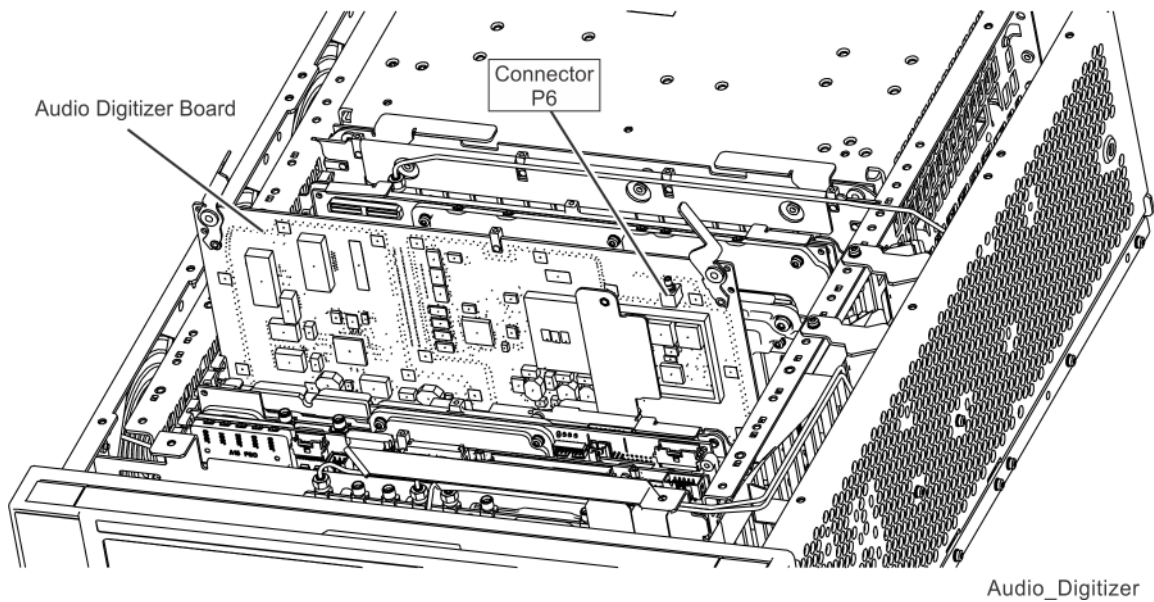


Option 107, Audio Input and Digitizer Upgrade Kit

Option 107 Hardware Installation

1. Refer to **Figure 3**. Locate and install the **N9030-60047** Audio Digitizer PCA into slot 7.

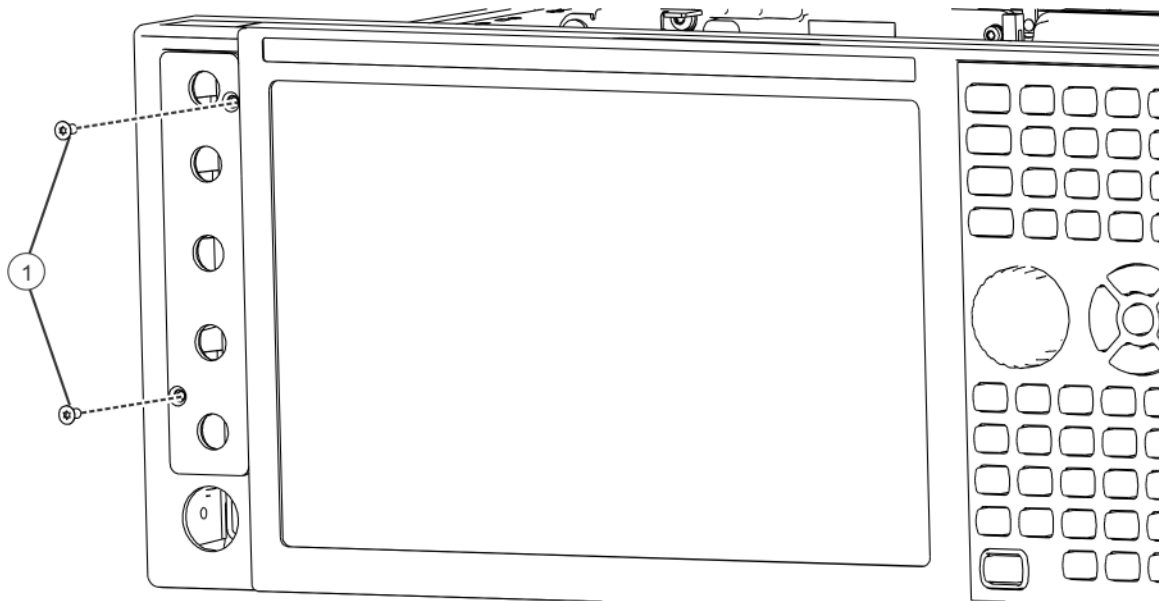
Figure 3 Option 107 Audio Digitizer



Audio Input Connector Installation

1. Remove the overlay to the left of the front panel display by peeling it off.
2. Refer to **Figure 4**. Using the T-10 driver, remove the two screws (1) (0515-1227) securing the cover plate that was behind the front panel overlay.

Figure 4 Cover Plate



Opt107_front_overlay

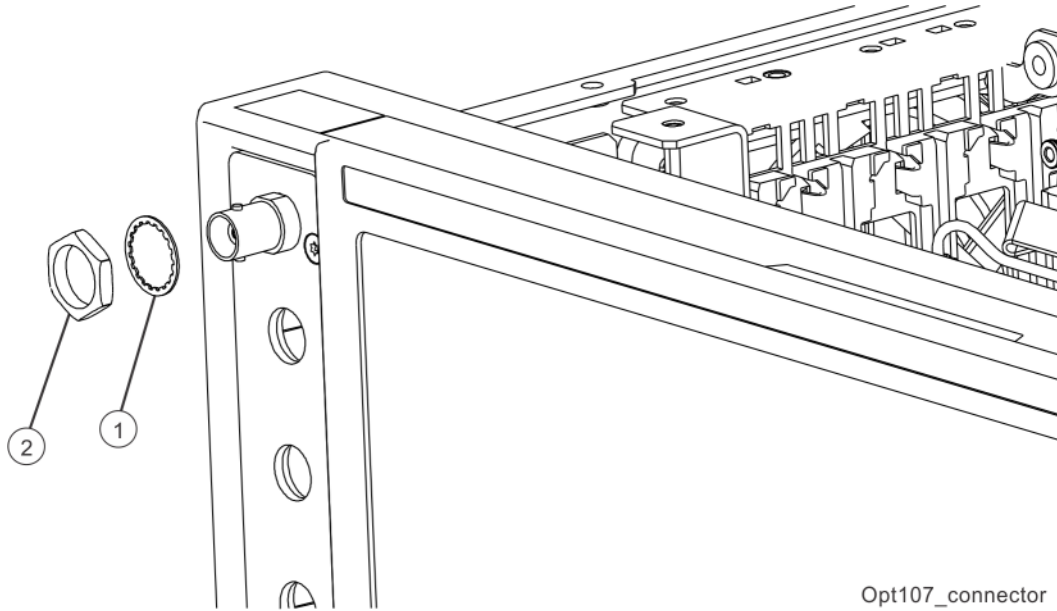
3. Replace the cover plate with the one provided with this kit (N9030-00004).
4. Secure the new cover plate with the two screws and torque to 9 in-lbs. **Figure 4**
5. Locate the new audio input coaxial cable provided with this kit (N9020-60344).
6. Insert the BNC end of the cable into the back side of the front frame assembly so that it comes out the top hole of the newly installed cover plate.

NOTE

The flat spot on the BNC connector needs to align with the flat spot in the top hole of the new cover plate.

7. Refer to **Figure 5**. Install the lock washer (1) (2190-0068) and hex nut (2) (2950-0035) onto the BNC connector and tighten to 21 in-lbs.

Figure 5 BNC Connector



8. Locate the new Audio Input Overlay provided with this kit (N9030-80062).
9. Remove the peel-off layer from the back of the overlay. Carefully locate and center the new Audio Input Overlay over the BNC connector and within the front frame casting relief.
10. Route the cable between the inner and outer chassis brackets above the fans and then connect to P6 on the Audio Digitizer assembly

Top Brace Replacement

1. Refer to **Figure 2**. Replace the top brace (1) using the 0515-1946 screws. There is an additional screw provided in this kit (0515-1227) (5) to attach the top brace to the Audio Digitizer board. Torque to 9 inch-pounds.

Final Installation

1. Refer to **Figure 1**. Carefully slide the instrument cover back onto the instrument from the rear of the analyzer, making sure not to damage any internal cables. The seam on the cover should be on the bottom of the instrument. Be sure the cover seats into the gasket groove in the Front Frame Assembly.
2. Replace the four rear feet (4) to the rear of the instrument using the four screws (3). Torque to 21 inch-pounds.
3. Replace the strap handles (2) on both sides of the instrument using the four screws (1). Torque to 21 inch-pounds.
4. Replace the four instrument bottom feet.
5. Replace the four key locks to the bottom feet.

Install Instrument Software

http://www.keysight.com/find/pxa_software

This will guarantee:

- The analyzer has the latest instrument software version to support Option 107.
- FPGA updates are done to the Audio Digitizer hardware.
- The drivers are installed for the new hardware.

Licensing the Option

Installation Procedure over USB

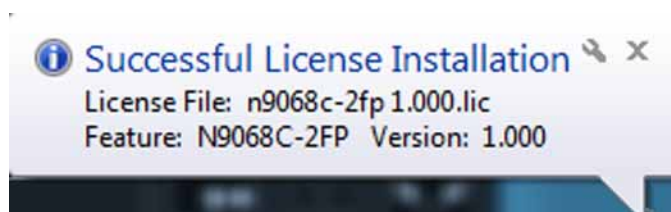
1. Locate the Option Upgrade Entitlement Certificate from the kit.
2. Redeem the Option Upgrade Entitlement Certificate by following the instructions on the Certificate.
3. After redeeming your Option Upgrade Entitlement Certificate you will receive an email with an attached License File.
4. Locate a USB storage device. Perform a virus scan on this device before use.
5. Save the License File to the root directory of the USB storage device.
6. Connect the USB storage device to one of the PXA USB ports. Windows will detect the new hardware and may display the configuration menu shown in **Figure 6**. This menu may be configured according to your preferences.

Figure 6 USB Storage Device Configuration Menu



7. The PXA will automatically consume the License File (this may take a few minutes). When the License File is consumed the Keysight License Manager will display a “Successful License Installation” message similar to the one shown in [Figure 7](#).

Figure 7 Successful License Installation



Alternate Installation Procedure

The License File can be manually installed over USB or LAN by placing the license file in the following folder on the PXA C:\Program Files\Agilent\licensing.

Verify the Installation

1. Turn on the analyzer and wait for the instrument to fully boot up.
2. Verify the spectrum analyzer application loads and sweeps as expected. Press **System, Show Hardware** on the analyzer and verify that the Audio Digitizer identifies itself as:
 - Audio Input 100 K Ohms
3. Press **System, Show System** on the analyzer to display a list of all installed options. You should see N9030B-107.

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Adjustments and Performance Verification

Calibration Software and specified test equipment is required to perform the adjustments, and can be used to automate the performance verification testing.

Information on how to obtain this software can be found at

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

1. Perform the following adjustments, located in the TME field software.
 - none
2. Perform the following performance verification tests using the TME field software:
 - Audio Amplitude Accuracy Option 107
 - Audio Distortion Option 107

IMPORTANT A full calibration is required to assure the instrument meets all specifications

The end user must ultimately determine whether they want a full calibration to be performed after the installation of this upgrade or not. If a full calibration is required, arrangements regarding the level of calibration must be made between the end user and the calibration provider.

If you require further assistance, please contact the Keysight support team.

Online assistance:

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

If you do not have access to the Internet, contact your local Keysight Technologies Sales and Service Office, or if in the United States, call 1-800-829-4444 (8 am - 8 pm ET, Monday - Friday).



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