

# Keysight Technologies N9021B, N9030B, and N9040B Signal Analyzers

Option DUA,  
Duplex IF RTSA

# Notices

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## **Manual Part Number**

N9030-90106

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## Option DUA, Duplex IF RTSA

Products Affected:	N9021B, MXA Signal Analyzer N9030B, PXA Signal Analyzer N9040B, UXA Signal Analyzer
Serial Numbers:	All
Options Required:	N90xxB-B5X, Analysis Bandwidth, 510 MHz N90xxB-RT2 or RT1, Real Time Analysis
Applications Required:	None
To Be Performed By:	(X) Keysight Service Center (X) Personnel Qualified by Keysight (X) Customer
Estimated Installation Time:	0.5 Hours
Estimated Adjustment Time:	0 Hours
Estimated Verification Time:	0 Hours

### Introduction

This installation note explains how to install the license necessary to enable Option DUA, Duplex IF RTSA. Option DUA requires that the instrument has Option B5X, Analysis Bandwidth, 510 MHz previously installed because Option B5X provides two wide bandwidth digital IF assemblies. Option RT2, or RT1, Real-Time spectrum analyzer application, provides the measurement personality that controls the two digital IF assemblies.

Duplex IF RTSA allows the instrument to display two measurements at the same time; one a spectrogram (amplitude versus frequency) and the other a PVT measurement (power versus time). This is accomplished by using one of the wide bandwidth digital IF assemblies for the spectrogram measurement and the other wide bandwidth digital IF assembly for the power versus time measurement. Analysis bandwidth is limited to less than 255 MHz since each individual wide bandwidth digital IF assembly is limited to 255 MHz.

#### NOTE

Instrument software revision A.19.25 or later is required to install this upgrade.

## Installation Kit Parts List

Quantity	Description	Keysight Part Number
1	Entitlement Certificate	-----
1	Installation Note	This note

## Tools Required

- Microsoft Windows based personal computer with internet access and USB port
- USB storage device with > 2GB free memory

## Initial Instrument Functionality Check

Power on the instrument and allow the instrument to boot up. Run an alignment and display the measurement screen. (The instrument will probably display a spectrum analyzer screen and you will see the instrument sweeping.)

There should be no alignment failures. If there are failures, investigate and fix the problem before continuing.

## Installation Procedure

### Analyzer Information

1. Connect a power cord to the analyzer and turn on the analyzer.
2. After the analyzer has completed turning on, press **System, Show System**. Make note of the following information from the Show System screen:

Product Number \_\_\_\_\_

Serial Number \_\_\_\_\_

Instrument S/W Revision \_\_\_\_\_

3. Check for the presence of the options listed below in the Show System screen. Put a check mark after each option listed below that appears in the show System menu. The “x” in “N90xxB” could be either 21, 30, or 40 for an MXA, PXA, or UXA, respectively.

N90xxB-B5X \_\_\_\_\_

N90xxB-RT2 \_\_\_\_\_

N90xxB-RT1 \_\_\_\_\_

4. Refer to the data in **step 2** above. Verify that the Product Number in **step 2** is appropriate for the Option DUA upgrade being installed:

Option DUA Upgrade	Product Number (Step 2)
N9030BU-DUA	N9030B
N9040BU-DUA	N9040B

If the Product Number in **step 2** is not appropriate for the Option DUA upgrade, **do not proceed** with the installation.

5. Refer to the data in **step 2** above. If the Instrument S/W Revision is earlier than A.19.25, you must upgrade to revision A.19.25 or later. Even if A.19.25 or later is already installed, Keysight recommends that you update to the latest instrument software version to ensure that you have the latest defect fixes. To check the latest instrument software version, visit the following website:

[http://www.keysight.com/find/xseries\\_software](http://www.keysight.com/find/xseries_software)

6. Refer to the data in **step 3** above. Verify that N90xxB-B5X and N90xxB-RT2 or RT1 are checked (currently installed).

If N90xxB-B5X is not installed, do not proceed with the installation of this kit. A hardware upgrade is required to add Option B5X to the analyzer. If N90xxB-RT2 or RT1 is not installed, one of these two options must be installed (license key only, but functionality relies on Option B5X hardware) before the new Option DUA will function. Refer to the Signal Analyzer Upgrades web page, and the N90xxB model number to determine what upgrade kits are required:

[http://www.keysight.com/find/sa\\_upgrades](http://www.keysight.com/find/sa_upgrades)

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## Update Instrument Software

Go to the following website and determine whether or not the analyzer has the latest instrument software already installed:

[http://www.keysight.com/find/xseries\\_software](http://www.keysight.com/find/xseries_software)

If the analyzer does not have the latest instrument software already installed, download and install the latest version.

## Licensing the New Options

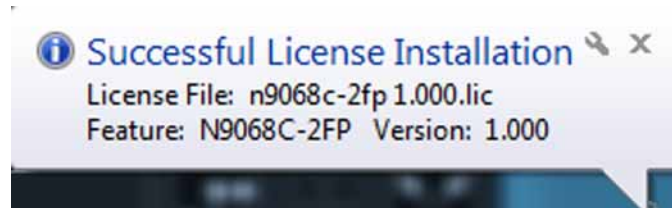
1. Locate the Option Upgrade Entitlement Certificate from the kit.
2. Redeem the Option Upgrade Entitlement Certificate by following the instructions on the Certificate.
3. After redeeming your Option Upgrade Entitlement Certificate you will receive an email with an attached License File.
4. Locate a 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 analyzer's USB ports. Connect a mouse to another USB port. Windows will detect the new hardware and may display the configuration menu shown in **Figure 1**. This menu may be configured according to your preferences.

**Figure 1** USB Storage Device Configuration Menu



7. The signal analyzer 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 as shown in **Figure 2**. Since the license file contains multiple licenses, multiple “Successful License Installation” messages will appear. Wait until all licenses have been consumed before removing the USB storage device.

**Figure 2** Successful License Installation



### Verify the License Installation

1. Cycle power on the signal analyzer.
2. After the instrument reboots and displays a measurement screen, Press **System, Show System** to display a list of installed options.
3. Verify that the newly installed option number and description (N9021B-DUA Duplex IF RTSA, or N9030B-DUA Duplex IF RTSA, or N9040B-DUA Duplex IF RTSA) appears on the list.

### Verify Option DUA Functionality

1. Press **MODE/MEAS**, select **Real-Time Spectrum Analyzer, OK**.
2. Press **MEAS SETUP**, select **Advanced**.
3. Assure the **IF Duplex** on off selection appears in the menu.

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## Utilities, Adjustments, and Performance Verification Tests

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

Obtain Keysight X-Series Signal Analyzer Calibration Application SW, N7814A TME Calibration Application, version E.18.00 or later. Information on how to obtain this software can be found at:

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

The following tests are required to assure the installation was performed correctly. The instrument may not have been in spec before the upgrade was begun. Performing only these tests does not guarantee that the analyzer meets all specifications.

### Utilities Required

- None

### Adjustments Required

- None

### Performance Tests Required

- None

End of installation.

For assistance, contact your nearest Keysight Technologies Sales and Service Office. To find your local Keysight office access the following URL, or if in the United States, call the following telephone number:

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

1-800-829-4444 (8 am - 8 pm ET, Monday - Friday)



