Keysight Technologies N9032B Signal Analyzer

Option CRW
Wide IF Output Upgrade

KEYSIGHT TECHNOLOGIES

Installation Note

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Option CRW Upgrade Kit

Products Affected:	N9032B PXA Signal Analyzer
Serial Numbers:	All
Options	
To Be Performed By:	( ) Keysight Service Center (X) Personnel Qualified by Keysight (X) Customer
Estimated Installation Time:	1.0 Hours

Introduction

Option CRW provides a wide bandwidth IF output on the rear panel labeled Wide IF Out. When Wide IF Out is enabled, the instrument functions as a down converter where the IF signal is routed to the rear panel and is no longer present through the internal instrument wide band IF. Therefor no measurement results are displayed on the analyzer screen or via SCPI.

The Wide IF Out should be used at center frequencies above 700 MHz.

No adjustments or verification to specification is required following this upgrade.

This installation note provides instructions on licensing Option CRW and provides a functional check to verify operation.

NOTE

1. To ensure that this newly installed option has been installed properly, the procedure that follows includes a functional check.
2. Software revision A.32.02 or later is required. The latest revision of the X-Series signal analyzer software may be downloaded from: http://www.keysight.com/find/Xseries_software
3. This option is licensed for one instrument model/serial number combination. The license key will only install on the designated instrument.

Contents

Quantity	Description	Part Number
1	Installation Note	This note
1	Option Upgrade Entitlement Certificate	5964-5178

Tools Required for Installation

– Personal computer with internet access and USB port

– USB storage device with > 3 GB free memory

Tools Required for Manual Operation Verification

– Spectrum analyzer with greater than 7 GHz upper frequency range

– Test cable, sma (m) to sma (m), used to connect the spectrum analyzer mentioned above to the N9032B rear panel Wide IF Out connector

– Adapter, sma (f) to Type-N (m) or whatever adapter is required to connect the sma cable mentioned above to the measuring signal analyzer input

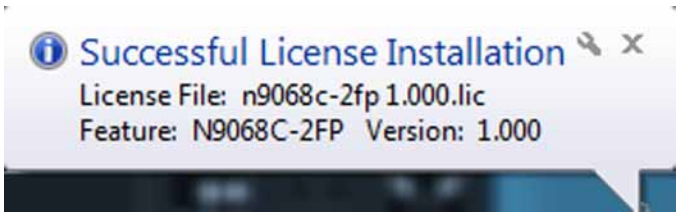
Installation Procedure over USB

1. Locate the Option Upgrade Entitlement Certificate (5964-5178) 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 the signal analyzer 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.

Figure 2 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 signal analyzer

C:\Program Files\Agilent\licensing

Verify the Installation

1. Cycle the power on the signal analyzer.
2. Press the gear icon (System)  , **Show System** to display a list of installed options.
3. Verify that the newly installed option, N9032B_CRW, appears on the list.

Manually Verify Operation (Optional)

Verifying that Option CRW appears in the Show System screen, which was just done; and verifying the various analyzer keys appear in the analyzer menu as outlined below is a very good indication that Option CRW will function. However if you have the equipment and want to see the Option CRW output signal displayed on a spectrum analyzer, follow the procedure below.

Set up the N9032B signal analyzer

1. Power on the N9032B instrument, or if already powered on in Spectrum Analyzer mode, press **Mode Preset**. Select **Mode**, **IQ Analyzer (Basic)** and **OK**.
2. Press **Meas Setup**, **IF Path**, **255 MHz**.
3. Set up and turn on the instrument's tunable internal calibrator. Press **Input/Output**, **Calibrator Control**, **Cal Source**. Select **Tunable**. Set frequency to **20 GHz**. Select **Output On**.
4. Press **FREQ**, **Center Frequency**, and enter **20 GHz**. The calibrator signal will appear on screen at approximately -15 dBm.
5. Turn on the front panel Wide IF Out by pressing **Input/Output**, **Output**, **Ext/Wide IF Out On**.
6. A message will appear at the bottom of the screen "`No Result, Meas Invalid with Ext/Wide IF Out set to On`". You will no longer see the signal on the analyzer display since the signal path has been switched to the front panel. See Figure 3.

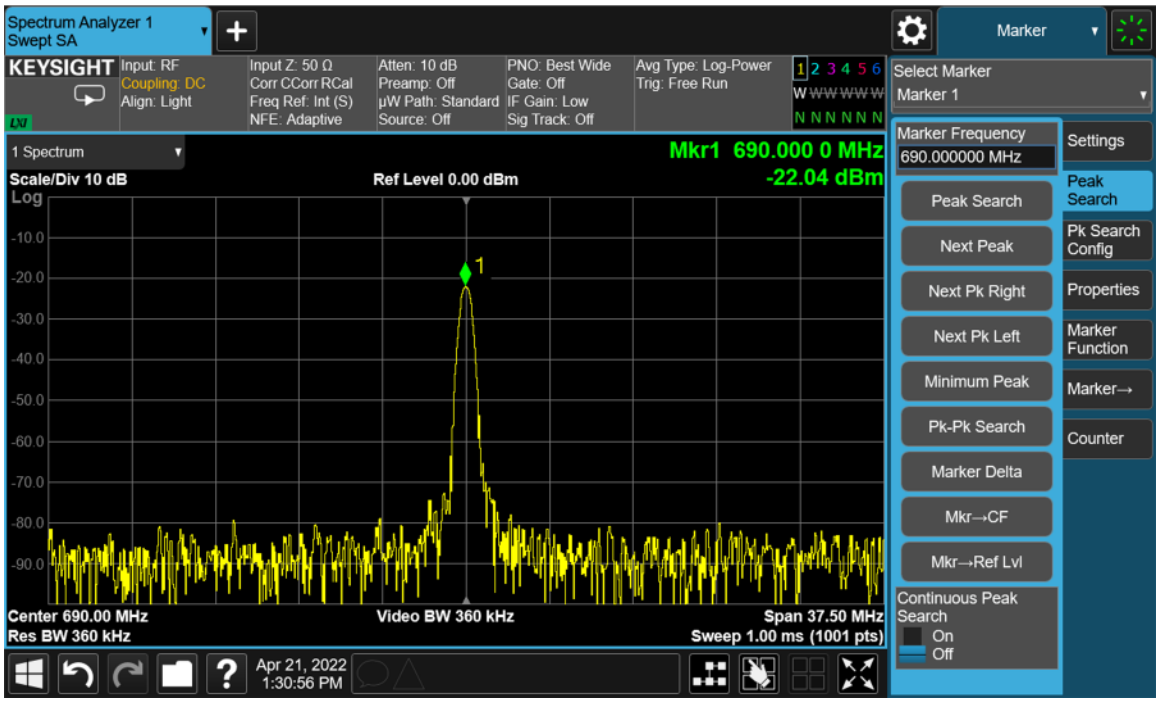
Figure 3 No Result Screen

Set up the measuring spectrum analyzer

NOTE The measuring spectrum analyzer must have a frequency range greater than 7 GHz. The expected IF frequency for this example will be 6.2 GHz.

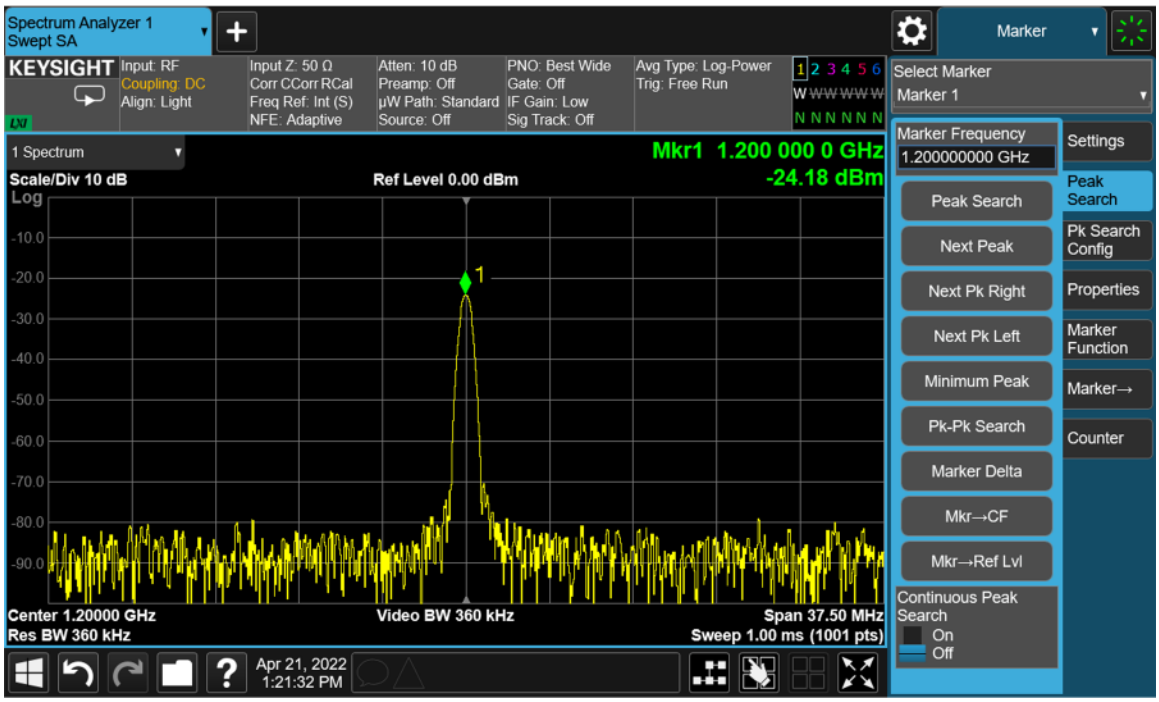
1. Connect an SMA cable from the N9032B front panel Wide IF Out connector located on the left side of the instrument, to the measuring spectrum analyzer RF input.
2. On the measuring spectrum analyzer set the Center Frequency to 690 MHz, and Set Span to 100 MHz.
3. The measuring spectrum analyzer should display a signal at 690 MHz, at around -22 dBm. Signal amplitude will depend on several things such as quality of interconnect cable. The Wide IF Out port is not calibrated for amplitude accuracy. See Figure 4.

Figure 4 690 MHz Wide IF Out



4. If the N9032B has Option R15, press **Meas Setup**, **IF Path**, and choose 1.5 GHz path. The IF output frequency will now be 1.2 GHz. Set the measuring spectrum analyzer to a center frequency of 1.2 GHz. The display should show a signal at 1.2 GHz at around -24 dBm as shown in See Figure 5.

Figure 5 1.2 GHz Wide IF Out



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

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