

Keysight Technologies
N9030B PXA Signal Analyzer
N9032B PXA Signal Analyzer
N9021B MXA Signal Analyzer

Option CR3 Second IF Out
Option CRP Arbitrary IF Out
Option ALV Log Video Out

Notices

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Option CR3, or CRP, or ALV Installation Kit

Products Affected:	N9030B PXA Signal Analyzer N9032B PXA Signal Analyzer N9021B MXA Signal Analyzer
Serial Numbers:	All
Options	
To Be Performed By:	(X) Keysight Service Center (X) Personnel Qualified by Keysight (X) Customer
Estimated Installation Time:	0.5 Hours
Estimated Adjustment and Verification Time:	0.5 Hours

Introduction

This kit contains all of the instructions required to install Option CR3, CRP, or ALV on a Keysight N9030B or N9032B PXA signal analyzer, or Option CR3 or CRP on a Keysight N9021B MXA signal analyzer.

The rear panel AUX IF OUT port is present on all PXA and N9021B MXA signal analyzers, however each of the possible output signal choices require a license.

NOTE

1. At the time of manufacture the hardware related to this option was fully adjusted and the option performance was verified to be within its warranted specifications. Within one year of the initial calibration date of the instrument this option is fully calibrated with no further adjustment or verification testing.

To determine the initial calibration date, locate the original calibration certificate that was shipped with the instrument at the time of purchase. The Date of Calibration is printed on the original calibration certificate.

To ensure that this newly installed option has been installed properly, the procedure that follows includes a functional check.

2. The latest revision of the X-Series signal analyzer software may be downloaded from:

http://www.keysight.com/find/sa_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	Keysight Part Number
1	Installation Note	This note
1	Option Upgrade Entitlement Certificate	-----

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

For Option CR3 and CRP

- Spectrum Analyzer capable of measuring a 322.5 MHz signal at -40 dBm
- Test cable, sma or 3.5 mm connectors
- Adapters as needed to connect the cable between the spectrum analyzer and sma AUX IF OUT port on the rear panel of the N9030B/N9032B, N9021B.

For Option ALV

- Signal source capable of providing pulse output above 200 MHz
- Oscilloscope
- Test cable, BNC
- BNC (f) to sma (m) adapter to connect the cable between the oscilloscope and sma AUX IF OUT port on the rear panel of the spectrum analyzer.

Installation Procedure over USB

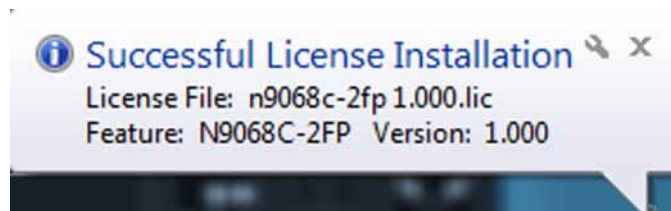
- 1. Locate the Option Upgrade Entitlement Certificate from the kit.**
- 2. Redeem the Option Upgrade Entitlement Certificate by following the instructions on the Certificate.**
- 3. After redeeming your Option Upgrade Entitlement Certificate you will receive an email with an attached License File.**
- 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 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 similar to the one 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 **System, Show System** to display a list of installed options.
3. Verify that the newly installed option appears on the list.

Functional Check:

Within one year of the initial calibration date of the instrument this option is fully calibrated with no further adjustment or verification testing. To ensure that this newly installed option has been enabled correctly the following functional check is recommended.

1. Tap the message balloon at the bottom of the main display. Tap **Clear Message Queue**. This will remove the out-of-date errors.
2. Press **System, Alignments, Align Now, Align Now All**.
3. Watch for any errors during the instrument alignment.
4. Tap the message balloon at the bottom of the main display to view the instrument error log.
5. Verify that there were no errors during the alignment.

Manually verify operation

Option CR3, Second IF Output

1. Preset X-Series analyzer. Assure mode is Spectrum Analyzer.
2. Display the 50 MHz calibrator signal. Press **Input/Output, RF Calibrator, 50 MHz**. Press **Frequency, Center Frequency**, key in 50 MHz. Press **Span, Zero Span**. You should see a flat line across the display at -25 dBm.
3. Enable Option CR3. Press **Input/Output, Output, Aux IF Out, Second IF**.
4. Connect a spectrum analyzer to the rear panel Aux IF Out port using test cable and appropriate adapters.

Spectrum analyzer settings:

Center frequency: 322.5 MHz

Span: 1 MHz

Bandwidth: 100 kHz

The spectrum analyzer should display a $-33 \text{ dBm} \pm 5 \text{ dB}$ signal

Option CRP, Arbitrary IF Output

1. Preset X-Series analyzer. Assure mode is Spectrum Analyzer.
2. Display the 50 MHz calibrator signal. Press **Input/Output, RF Calibrator, 50 MHz**. Press **Frequency**, key in 50 MHz. Press **Span, Zero Span**. You should see a flat line across the display at -25 dBm.
3. Enable Option CRP. Press **Input/Output, Output, Aux IF Out, Arbitrary IF, Arbitrary IF Freq**. Set the Arbitrary IF Out frequency to 70 MHz using the key pad.
4. Connect a spectrum analyzer to the rear panel Aux IF Out port using test cable and appropriate adapters.

Spectrum analyzer settings:

Center frequency: 70 MHz

Option CR3, or CRP, or ALV Installation Kit

Span: 1 MHz

Bandwidth: 100 kHz

The spectrum analyzer should display a $-33 \text{ dBm} \pm 5 \text{ dB}$ signal

Option ALV, Fast Log Video

1. Preset X-Series analyzer. Assure mode is Spectrum Analyzer.
2. Enable Option ALV. Press **Input/Output, Output, Aux IF Out, Fast Log Video**.
3. Connect a signal source configured for a pulse output to the X-Series analyzer RF input port. The frequency of the pulse should be above 200 MHz. Example settings are:

Pulse frequency: 400 MHz

Amplitude: -20 dBm

Pulse period: 80 μsec

Pulse width: 40 μsec

4. Spectrum analyzer settings:

Center frequency: 400 MHz

Span: 0 Hz

Bandwidth: 3 MHz

5. Connect an **oscilloscope** to the spectrum analyzer rear panel Aux IF Out port.

Oscilloscope settings:

500 mV/div

10 $\mu\text{sec}/\text{div}$

Adjust oscilloscope to view the pulse on the oscilloscope. Pulse should measure approximately 1.3 VP-P

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

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

Utilities Required

None

Adjustments Required

If the instrument is more than one year old, or if this instrument has been adjusted as part of a calibration or repair during its first year, the following adjustments are the minimum set required to ensure that this newly installed option is functioning properly.

Front End Controller Attenuator

Performance Testing Required

None

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.

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)



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