

# Keysight MXA Signal Analyzer Keysight EXA Signal Analyzer

Option CR3  
Second IF Out or  
Option CRP  
Arbitrary IF Out

Notice: This document contains references to Agilent.  
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# Notices

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## **Manual Part Number**

N9020-90185

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## Option CR3 or CRP Installation Kit

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Products Affected:	MXA N9020A EXA N9010A
Serial Numbers:	All
Options	
To Be Performed By:	<input checked="" type="checkbox"/> Keysight Service Center <input checked="" type="checkbox"/> Personnel Qualified by Keysight <input checked="" type="checkbox"/> Customer
Estimated Installation Time:	0.5 Hours
Estimated Adjustment and Verification Time:	0.5 Hours

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## Introduction

This kit contains all of the instructions required to install Option CR3 or CRP on a Keysight MXA or EXA signal analyzer that already has the necessary hardware installed. If the necessary hardware is not already installed, a different upgrade kit should be used.

To install this kit, the analyzer must already have both of the following:

- A rear panel AUX IF OUT port
- A compatible Front End Controller assembly installed.

Some analyzers will have an AUX if OUT port, but will not have a compatible Front End Controller assembly.

To verify if a compatible Front End Controller assembly is installed, press **System, Show, Hardware**. Refer to the row for the Front End Controller and note the Hw Id entry.

If the Front End Controller's Hw Id is 41 or 75, you may proceed with the installation of this kit.

If the Front End Controller's Hw Id is not either 41 or 75, do not install this kit. Instead, install the N9010AK-HL3 kit or N9020AK-HL3, as appropriate.

### 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 Analyzers software may be downloaded from

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

If a software update is required, perform the software update BEFORE following the procedure in this document for redeeming and installing the option upgrade license key.

3. This option is licensed for one instrument model/serial number combination. The license key will only install on the designated instrument.
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## Contents

Quantity	Description	Keysight 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 > 2 GB free memory

### Tools Required for Manual Operation Verification

- 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 signal analyzer.

### 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 **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. Press **System, Show, Errors, Clear Error Queue**. This will remove out-of-date errors.
2. Press **System, Alignments, Align Now, All**.
3. Watch for any errors during the instrument alignment.
4. Press **System, Show, Errors** 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 **FREQ/Channel**, 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, More, Output Configuration, Aux IF Out, Second IF Out**.
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 **FREQ/Channel**, 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, More, Output Configuration, Aux IF Out, Arbitrary IF**. 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

Span: 1 MHz

Bandwidth: 100 kHz

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



## 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

None

### 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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