
Keysight Technologies N9032B Signal Analyzers

Option FBP, Full Bypass Path

Notices

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Option FBP, Full Bypass Path

Products Affected	N9032B, PXA Signal Analyzer
Serial Numbers:	All
Options Required:	Option LNP
Restrictions:	
To Be Performed By:	(X) Keysight Service Center (X) Advanced User () User
Estimated Installation Time:	1.0 Hours
Estimated Adjustment Time:	4.0 Hours
Estimated Verification Time:	2.0 Hours

Introduction

This installation note explains how to license, adjust, and verify performance of Option FBP, Full Bypass Path on N9032B instruments that contain Option LNP.

Option FBP provides a signal path through the instrument front end when the start frequency is 3.6 GHz or greater, where both the Preselector and the Low Band Assembly are bypassed, which results in low signal path loss and better sensitivity.

When Full Bypass Path is turned on, the Option MPB, Microwave Preselector Bypass is set to bypass the Preselector; and the Option LNP, Low Noise Path is set to bypass the Low Band Switch. In order for this FBP path to turn on, the start frequency must be greater than 3.6 GHz and the Preamp must be turned off.

Instrument Calibration

The validity of any existing calibration that the instrument being upgraded may have will not be affected by the installation of this upgrade. However, the adjustments and performance verification testing prescribed in the following procedure must be run in order to validate the portion on the instrument calibration associated with the performance option being installed.

NOTE

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.

Option FBP, Full Bypass Path

Contents

Quantity	Description
1	Installation Note
1	Option Upgrade Entitlement Certificate

Tools Required

- Personal computer with internet access and USB port
- USB storage device

Initial Instrument Functionality Check

1. Power on the instrument and allow the instrument to boot up, run the alignments and display the measurement screen. The instrument will probably display a spectrum analyzer screen and you will see the instrument sweeping.
2. 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**.
3. Verify that Option LNP is listed in the Show System screen. If it is not installed, do not proceed with this option installation.

License 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.
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 1**.

Figure 1 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

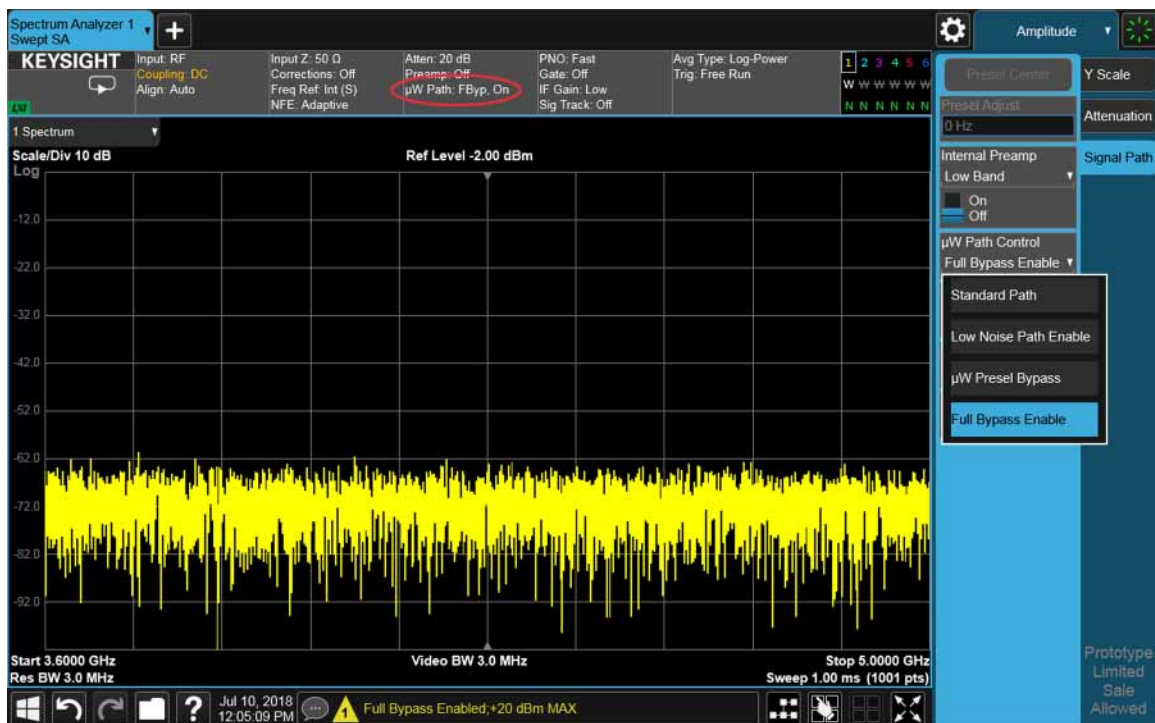
Verify the License Installation and Hardware

1. Cycle power on the signal analyzer and wait until the analyzer boots to the measurement application screen.
2. Press **System, Show System** to display a list of installed options.
3. Verify that the installed options list contains the newly installed N9032B_FBP.

Verify Option FBP Functionality

1. Press **MODE/MEAS**, and select Spectrum Analyzer, Swept SA.
2. Press **FREQ**, **Start Freq** and key in **4 GHz**. Press **Stop Freq** and key in **5 GHz**. This assures the start frequency is above 3.6 GHz, which is required in order to turn on the Full Bypass Path.
3. Press **AMPTD**, **Signal Path** and ensure Internal Preamp is set to Off. This is required in order to turn on the Full Bypass Path.
4. Press **uW Path Control**, and select **Full Bypass Enable**. You will hear the bypass switch click.
5. See **Figure 2**, and notice the Meas Bar at the top middle of screen shows uW Path:FByp On

Figure 2 Meas Bar Full Bypass On



Option FBP, Full Bypass Path

Utilities, Adjustments, and Performance Verification Tests

Utilities Required

None

Adjustments Required

Adjustment Name
None required if the instrument is less than one year old.
If the instrument is more than one year old:
50 MHz Calibrator Amplitude
4800 MHz Calibrator Amplitude
Wideband Calibrator Adjustment
Freq Resp Wideband FBP
Freq Resp Wideband LNA FBP
IF Frequency Response
IF Frequency Response UWBIF & Phase Linearity
Freq Resp Above 3.6 GHz FBP
Freq Resp Above 3.6 GHz LNA FBP

Performance Testing Required

Verification Test Name
None required if the instrument is less than one year old.
If the instrument is more than one year old:
Noise Density
Residual Response
Displayed Average Noise Level
IF Frequency Response
IF Amplitude Accuracy
Absolute Amplitude Accuracy

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:

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

1-800-829-4444



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