Keysight N9000A CXA Signal Analyzer Option T03 and T06 Tracking Generator

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Installation Note

Part Number: N9000-90032
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N9000-90032

KEYSIGHT TECHNOLOGIES

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Option T03, T06 - Tracking Generator Installation Kit

Products Affected:	CXA N9000A
Serial Numbers:	CXA
To Be Performed By:	(X) Keysight Service Center
	(X) Personnel Qualified by Keysight
	(X) Customer
Estimated Installation Time:	1 Hours
Estimated Adjustment and Verification Time:	2 Hour

Overview

This kit contains all of the instructions required to install Option T03 and T06 tracking generator on an Keysight N9000A CXA Signal Analyzer.

The procedure outlined in this document will guide you through the following steps, which will need to be followed closely, and performed in the order defined:

1. Pre-upgrade Status Check
2. Hardware Installation
3. Update the Instrument Firmware
4. Install the License Files
5. Function Activation
6. Installation Verification

Installation Procedure

This installation note is part of an upgrade kit that provides all of the parts and instructions needed to install the tracking generator board assembly in an Agilent N9000A CXA Signal Analyzer.

Contents

Quantity	Description	Agilent Part Number
1	Tracking Generator Assembly	N9000-65402
1	RF Input Connector Assembly	N9000-60032
1	EMI O-ring Shielding	8160-1637
1	Cable Assembly, SMA TG-RF, 2nd LO	N9000-20104
1	Cable Assembly, SMA TG-RF, Bridge	N9000-20105
1	Cable Assembly, SMA TG-RF, 1st LO	N9000-20106
1	Cable Assembly, MMCX TG-LO	N9000-20107
1	Cable Assembly, SMA TG Out	N9000-20109
1	Overlay	N9000-80100
2	Screw M3*0.5 (8 mm)	0515-0372
1	Entitlement Certificate	5964-5178
1	Entitlement Certificate Envelope	5967-7169
1	Installation Note	This note

Tools Required

- ❏ Torx Driver T-10
- ❏ Torx Driver T-20
- ❏ 5/16-inch torque wrench
- ❏ Agilent Calibration and Adjustment Software, N7814A
- ❏ Test equipment and computer supported by the X-series Performance Tests and Adjustment Software
- ❏ Microsoft Windows based personal computer with internet access and USB port
- ❏ USB storage device >2GB free memory

1. Pre-Upgrade Status Check

Before performing this upgrade you will need to know the status of the instrument being upgraded in a couple of areas.

Pre-Existing Issues and Error Messages

Power the instrument on and verify that the instrument will boot up properly. This would include verifying that there are no error messages displayed in the Status Bar of the display.

If there are any problem with the instrument at this point, including the presence of any error messages, either repair the instrument prior to proceeding with this upgrade or make detailed notes of the instrument status in the space provided below and address them once this upgrade has been completed if they continue to be present.

_____
_____
_____
_____
_____

Pre-Upgrade Instrument Software Revision

Determine the current instrument software revision and record it in the space below by pressing **System**, **Show**, **System** on the instrument.

Instrument S/W Revision: _____

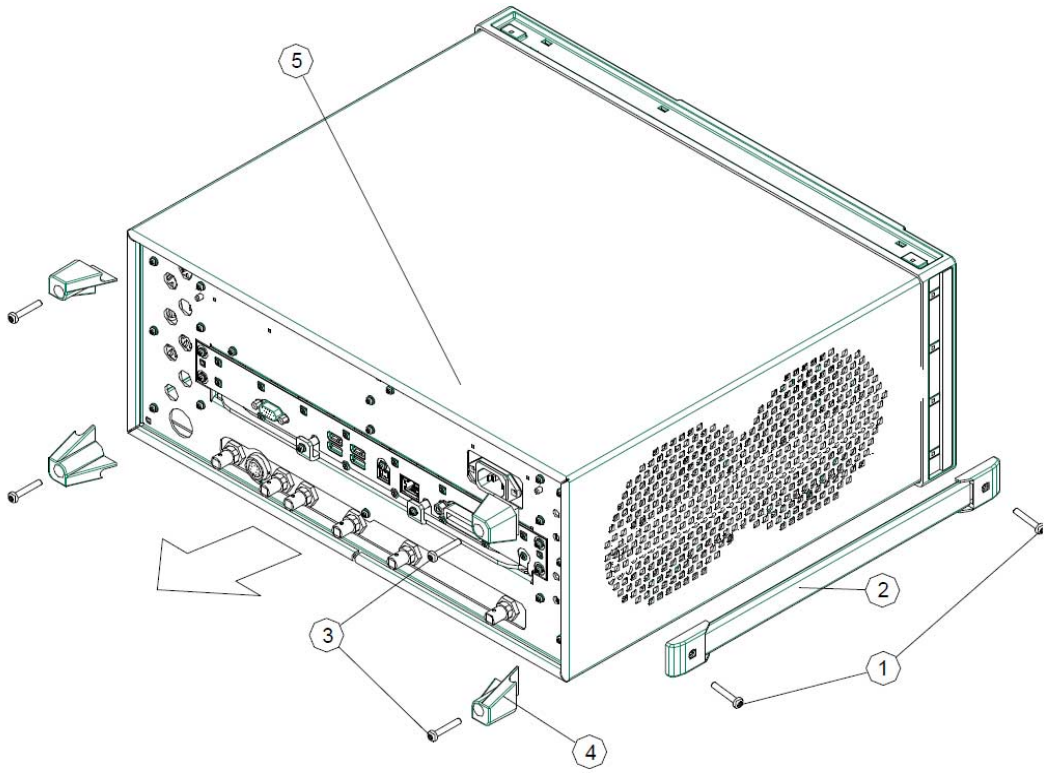
2. Hardware Installation

CAUTION Electrostatic discharge (ESD) can damage or destroy electronic components. All work on electronic assemblies should be performed at a static-safe workstation. Refer to the documentation that pertains to your instrument for information about static-safe workstations and ordering static-safe accessories.

Removal

1. Turn off the instrument and remove the power cord from the rear panel.
2. Remove the outer case of the instrument.
   a. Refer to Figure 1. Using the T-20 driver, remove the four screws (two on each side) (1) that attach the handle strap (2) on each side of the instrument.
   b. Using the T-20 driver, remove the four screws (including washers) (3) that hold the rear feet (4) in place.
   c. Pull the instrument cover (5) off towards the rear of the instrument.

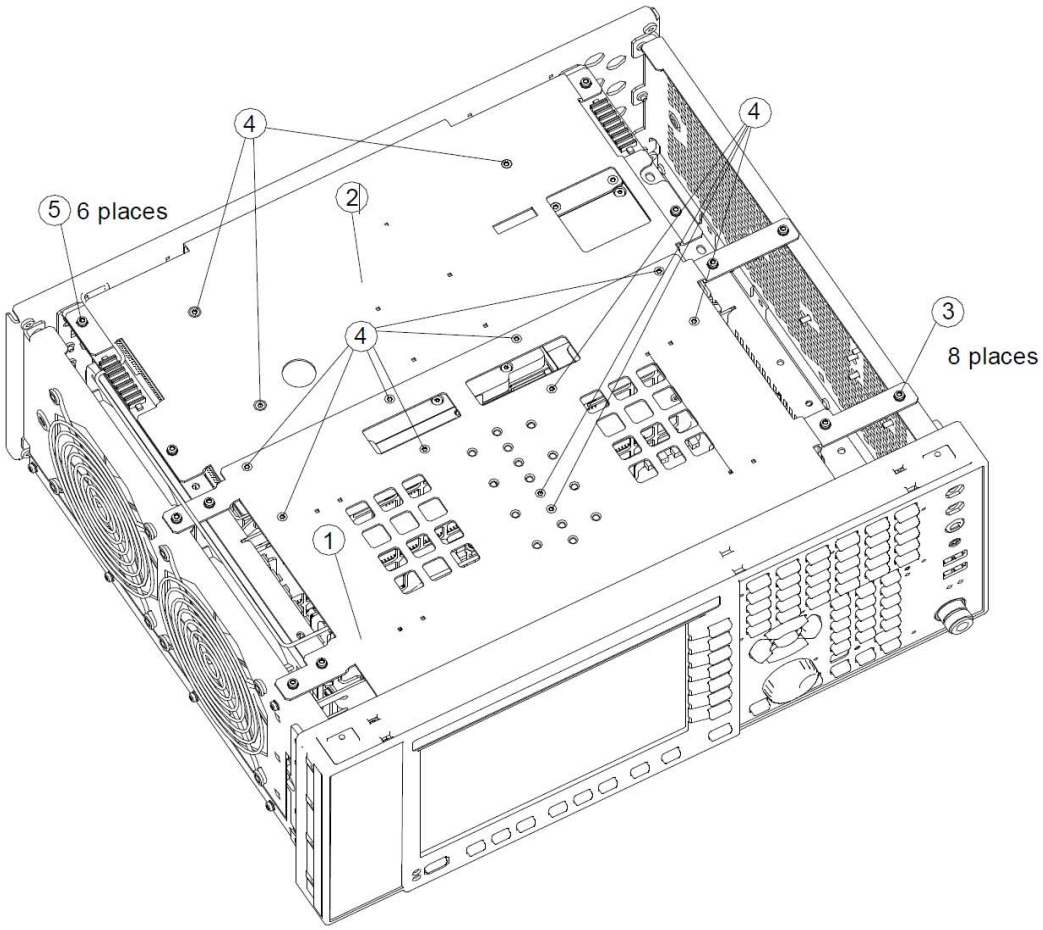
Figure 1 Standard Instrument Outer Case Removal



3. Remove the Top Brace and Reference Bracket.
   a. Refer to Figure 2. To remove the top brace (1), use the T-10 driver, remove the eight screws (3) (0515-0372) attaching the top brace to the chassis, the six screws (4) (0515-1227) attaching the top brace to the boards, and the four screws (4) attaching the top brace to the reference bracket.

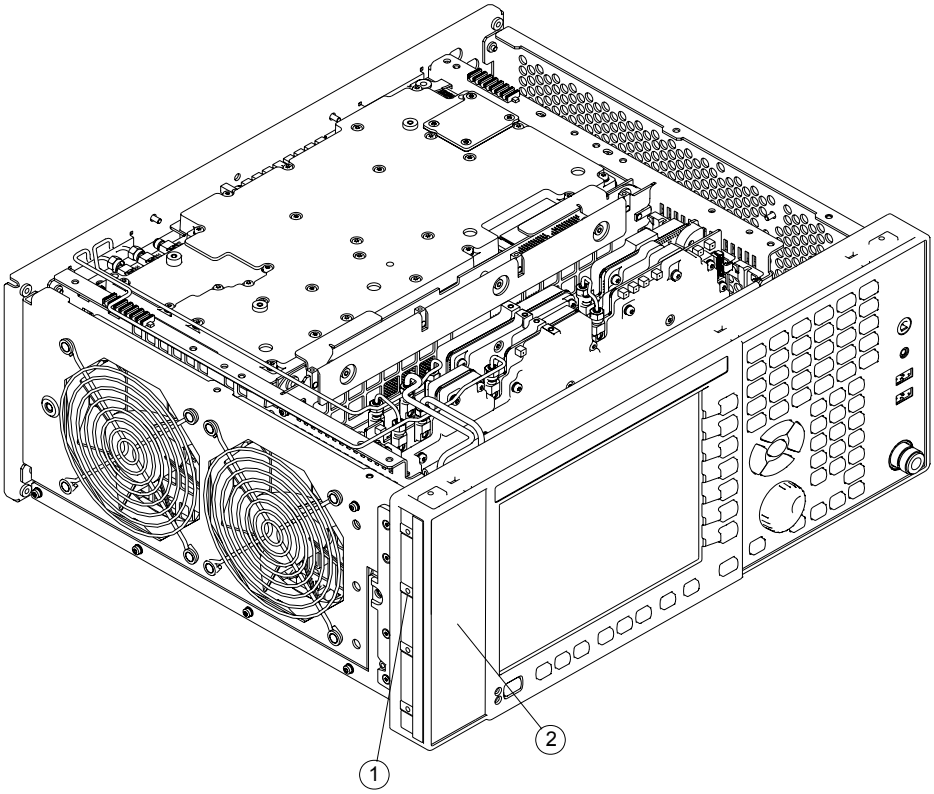
b. To Remove the reference bracket (2) use the T-10 driver to remove the six screws (5) (including two at the rear panel) attaching the reference bracket to the instrument and the four screws (4) attaching the top brace to the reference bracket.

Figure 2 Top Brace and Reference Bracket Removal



4. Refer to Figure 3 to remove the front frame assembly.

Figure 3 Front Frame Assembly Removal

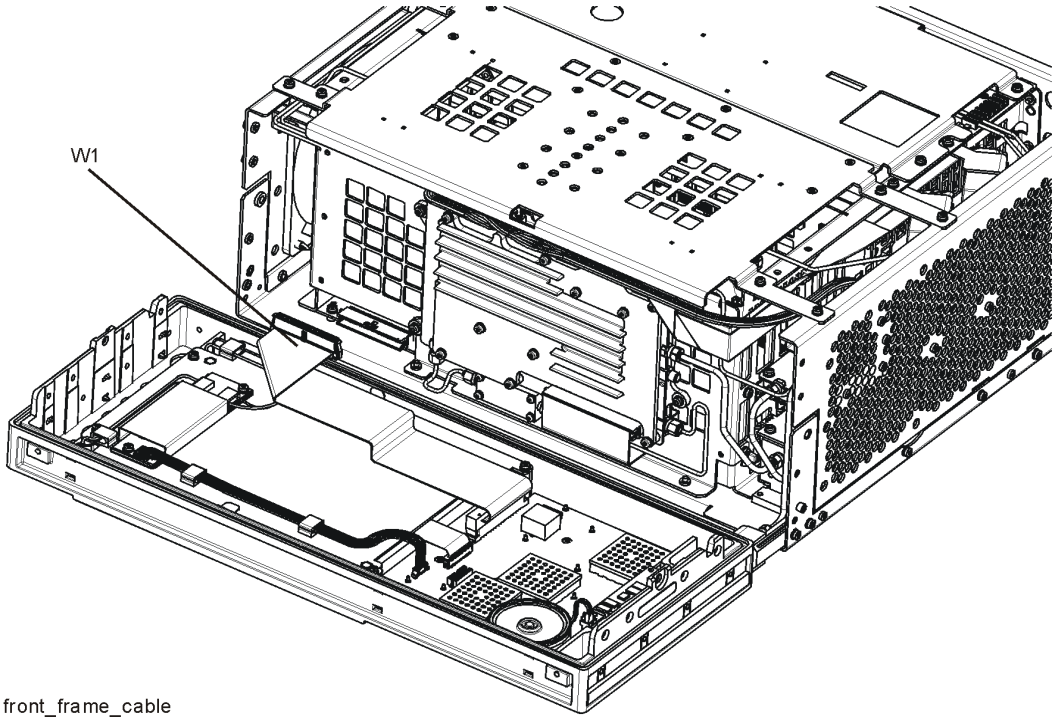


a. Remove the overlay (2) on the front frame assembly.

b. Remove the eight screws (1), four on each side, to detach the front frame assembly from the chassis.

c. Pull the front frame assembly carefully away from the chassis. Refer to Figure 4 to remove the ribbon cable W1 from the mother board.

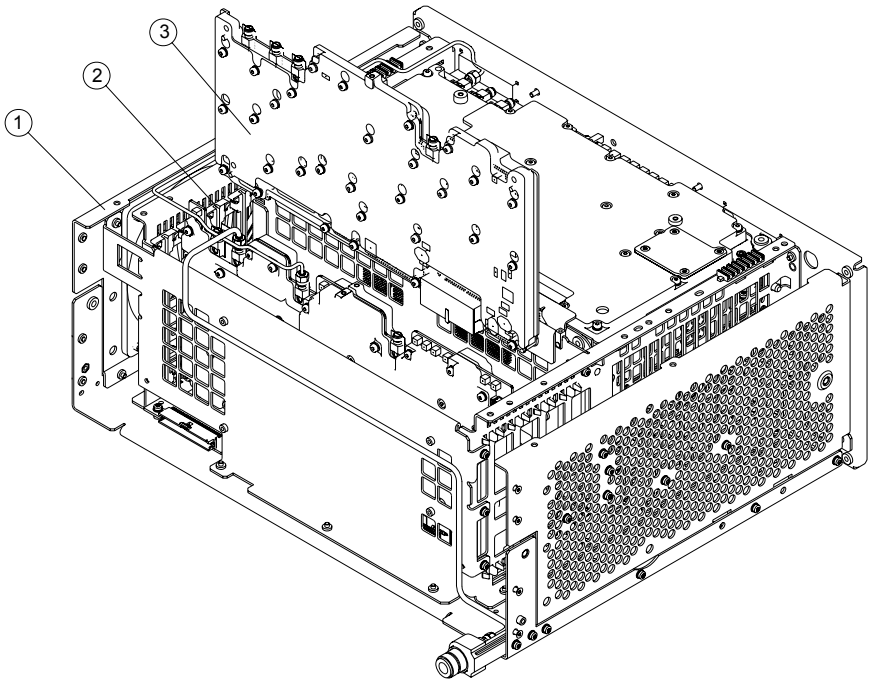
Figure 4 Front Panel Cable



Install the Tracking Generator Assembly

1. Locate the tracking generator assembly in the retrofit kit.
2. Refer to Figure 5 to install the assembly (3) into slot 4 in the chassis and press down to plug it into the motherboard.

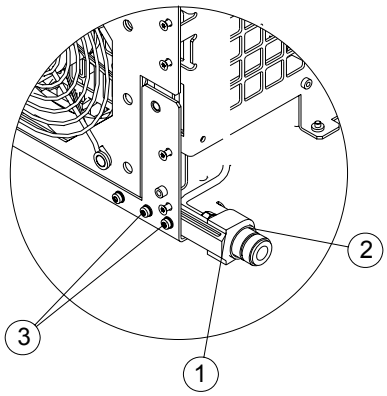
Figure 5 Tracking Generator Assembly



Install the RF Input Connector Assembly

1. Locate the tracking generator assembly in the retrofit kit.
2. Refer to Figure 6 to install the RF input connector assembly (1) into the instrument chassis.
3. Tighten the screws (3) with 9 inch-pounds.
4. Install the EMI O-ring (2) Shielding onto the RF input connector.

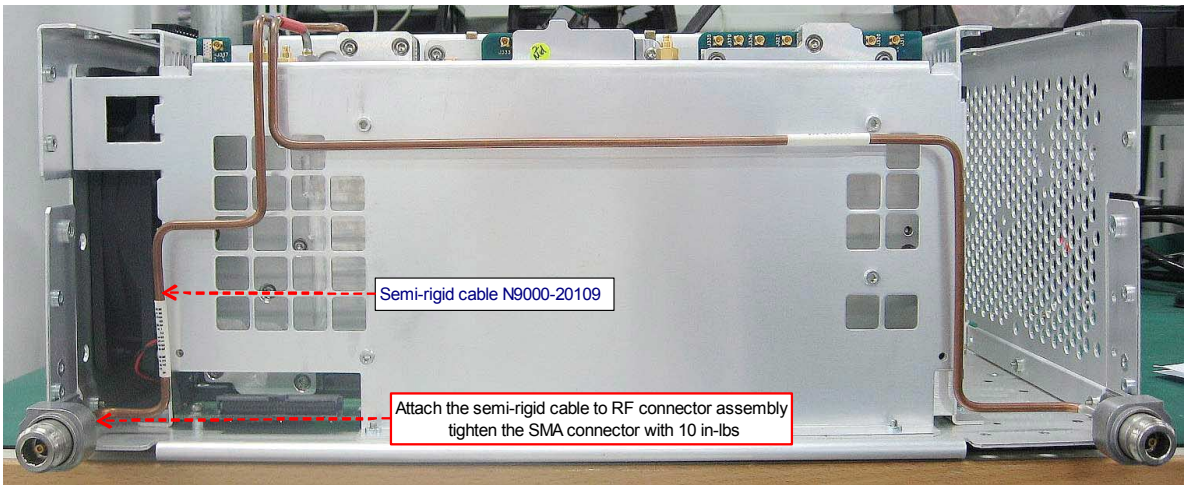
Figure 6 RF Input Connector Assembly



Install the Cable Assembly

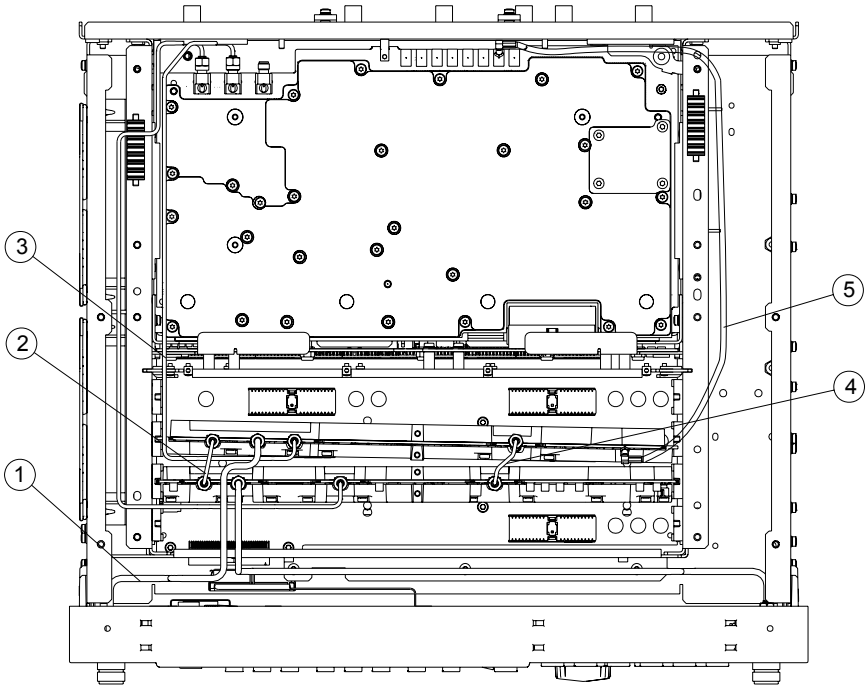
1. Locate the cable assembly(N9000-20109) in the retrofit kit.
2. Refer to Figure 7, attach the semi-rigid cable to RF input connector assembly and tighten the SMA connector with 10 in-lbs.

Figure 7 Install the RF Semi-rigid Cable



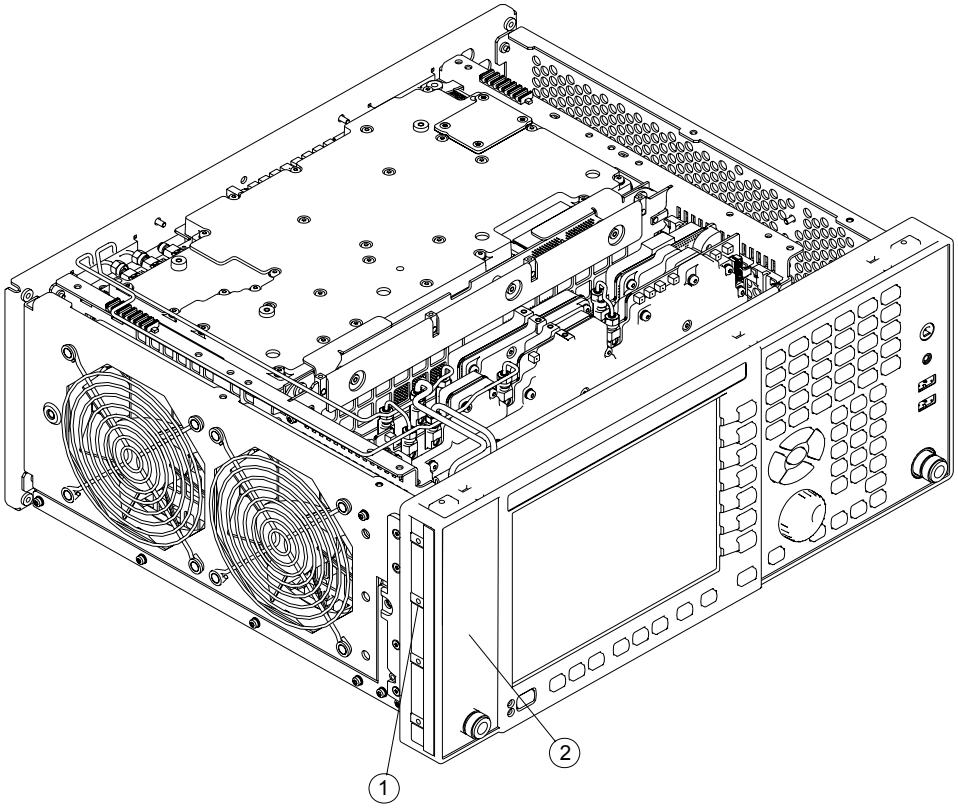
3. Refer to Figure 8, connect the other end of the cable (1) to tracking generator assembly. Tighten the the SMA connector with 10 in-lbs.

Figure 8 Install the Cable Assembly



4. Locate the cable assemblies N9000-20104, N9000-20105, N9000-20106, and N9000-20107 in the retrofit kit.
5. Refer to Figure 8, install N9000-20105 (2), N9000-20106 (3), N9000-20104 (4), and N9000-20107 (5) onto the corresponding instrument assemblies.
6. Re-install the front frame assembly, top brace, reference bracket and instrument outer case. Avoid pinching cables when installing the top brace.
7. Locate the overlay in the retrofit kit. Refer to Figure 9, attach the overlay (2) to the front frame assembly (1).

Figure 9 Cable Assembly



3. Update the Instrument Software

1. Load the latest instrument software is required to assure all FPGAs and drivers located on both the newly installed hardware and on the case instrument are synchronized. Therefore, even if the instrument contains the latest revision of software, you must re-install the software to assure proper operation.
   The latest revision of software may be downloaded from:
   http://www.agilent.com/find/Xseries_software

4. Install the License Files

1. Located Option Upgrade Entitlement Certificate in the kit and follow the directions to redeem it. You will receive and email with an attached License File.
2. Located the USB Storage Device. Perform a virus scan on this device before use. Save the License File to the root directory of the USB Storage Device.
3. Connect the USB Storage Device to the signal analyzer USB port.
4. The signal analyzer will automatically consume the License File. (This may take a few minutes) When the License File is consumed, the Agilent License Manager will display a “Successful License Installation” message as shown in Figure 10.

Figure 10 Successful License Installation

5. Tracking Generator Function Activation

After the installation is completed, please follow the procedures below to activate the option.

1. Press **[Source] > {Select Source}**.
2. Press arrow key to highlight **None**, and press **{Select Highlighted Source}**.
3. Press arrow key to highlight Agilent Tracking Generator, and press **{Selected Highlighted Source}**.

6. Installation Verification

Power the instrument on and verify that the instrument will not only boot up, but that the signal analyzer application software will load properly. This would include verifying that there are no error messages displayed in the Status Bar of the application window.

Adjustments and Performance Verification Tests

Adjustments and performance verification testing requires the use of the calibration software. The latest software information and downloads are available at:

http://www.agilent.com/find/calibrationsoftware

Adjustments Required

TG Level Accuracy

TG Path Delay

Performance Testing Recommended

TG Absolute Amplitude and Flatness

TG Power Sweep

TG Spurious Outputs

End of Installation

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

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

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