

Installation Note

Agilent 89441A Option AYC Installation Kit



Agilent Technologies

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Introduction

This package contains the items necessary to install Option AYC “High Precision Frequency Reference.” Here is a list of items contained in this package:

- 80 Oven Oscillator assembly.
(Agilent 89431-66580).
- Coax BNC-to-coax BNC Connector.
(Agilent 1250-1499).
- SMB(f)-to-BNC(f) gray cable with BNC connector (Agilent 03585-61612).
- BNC Washer (Agilent 2190-0099).
- BNC Nut (Agilent 2950-0035).
- (4) M3.0 6MM Torx Screws (Agilent 0515-0430).
- (2) 6-32 0.62LG Pozi Screws (Agilent 2360-0123).
- Cable Tie (Agilent 1400-1513).
- Option Label.
- This installation guide.

Equipment Required

- Agilent 89431A Service Guide.
- Agilent 89441A Installation and Verification Guide.
- Agilent 89431A Service Kit.
- Power Meter.
- Power Sensor.
- Spectrum Analyzer.
- Frequency Standard.
- Signal Generator.
- Frequency Synthesizer.
- (2) BNC-to-BNC Cable.
- Type-N Cable.
- N(m)-to-N(m) Adapter.
- N(f)-to-BNC(f) Adapter.
- Flat Edge Adjustment Tool.

Precautions

These installation instructions are for use by trained service personnel only. To avoid electrical shock, do not perform this installation unless you are qualified to do so.

WARNING: The following installation procedure requires the instrument's top and bottom covers be removed. Energy available at many points can, if contacted, result in serious personal injury.

CAUTION: The following steps must be performed at a static protected site to prevent static discharge damage during the handling of the PC assembly.

Installation Overview

Installing the High Precision Frequency Reference option requires installing the A80 Oven Oscillator assembly in the RF section and performing required adjustments and tests. Here is the procedure:

- 1 Remove the RF section's front panel.
 - Remove the IF section of the Agilent 89441A from the RF section. The IF section will not be used until Step 10.
 - Remove the RF section's front panel. See "To remove front panel" in chapter 3 of the *Agilent 89431A Service Guide*.
- 2 Place the RF section on its side.
 - Set the analyzer on its side opposite the RF section label.
- 3 Install the A80 Oven assembly.
 - Place the A80 Oven Oscillator assembly on the bracket and secure with the 4 M3.06MM torx screws. These screws are installed from the top of the PC assembly on each corner.
 - Secure the oven to the bracket using the 2 6-32 0.62LG pozi screws. These screws are installed through the bottom center holes in the bracket.
- 4 Install OVEN REF OUT cable.
 - Remove the plug from the "OVEN REF OUT" location on the rear panel.
 - Install the SMB(f)-to-BNC(f) gray cable's BNC connector in the "OVEN REF OUT" location using the BNC washer and BNC nut.
 - Secure the cable to the other rear panel cables using the tie wrap.

- Route the gray cable through the cable holders on the A99 Motherboard assembly, towards the front of the analyzer. Connect the gray cable to A80 J1.

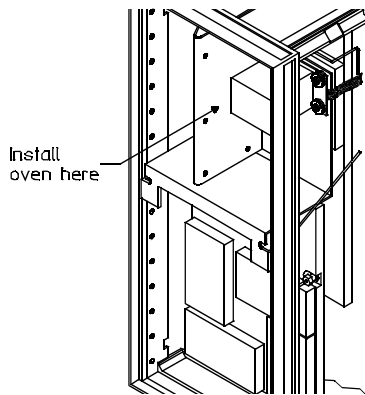


Figure 1. RF Section's Oven Location

- 5 Connect the power to the oven.
 - Locate the twisted red and black double-wire cable. This cable will be with the twisted orange and brown double-wire cable. Both wires are connected to A99 P97.
 - Connect the twisted red and black double-wire cable to A80 J80 (white connector).
- 6 Reinstall the front panel.
- 7 Reinstall the bottom cover.
- 8 Perform Oven adjustment.

See “To adjust oven” in Chapter 2 of the *Agilent 89431A Service Guide* for the adjustment procedure.

CAUTION: The RF Section must be warmed up for at least 1 hour before the oven adjustment is made.

- 9 Reinstall the top cover.
- 10 Reconnect the IF section to the RF section.

See “To connect the sections” in chapter 1 of the *Agilent 89441A Installation and Verification Guide* for the procedure.

- 11 Turn the power on and set the option configuration.
 - Connect the analyzer power cords.
 - Set the RF section power switch to ON.

- Set the IF section power switch to ON.
- Press the following keys:
 - [System Utility]
 - [options setup]
 - [hardware option config]
 - 1125
 - [enter]
 - [hardware option config]
 - [proceed to option config]
 - [RF Oven in].

CAUTION: The hardware option configuration keys can only be toggled 256 times. Do not indiscriminately toggle the keys. Options can not be added by merely selecting the option in the hardware option configuration menu. For example, toggling channel 2 to “in” will not add the second channel if the hardware is not installed. The BNC connectors for CHANNEL 2 and OVEN REF OUT are installed even if the hardware assemblies are not installed.

- Set the RF section power switch to STANDBY (O^I).
- Set the IF section power switch to OFF.

The new assembly is now installed.

12 Check the option installation.

- Set the RF section power switch to ON.
- Set the IF section power switch to ON.
- Press the following keys:
 - [System Utility]
 - [options setup].

The options configuration chart should indicate that the “RF Section Frequency Reference (Oven)” is installed.

13 Perform the RF Calibration.

See “To adjust calibration factors” in chapter 2 of the *Agilent 89431A Service Guide* for the procedure.

14 Perform the self test and the frequency accuracy performance tests.

See chapter 2 in the *Agilent 89441A Installation and Verification Guide* and run the self test and frequency accuracy tests.

15 Attach the option label on the rear of the instrument near the serial number label.

Failure of the analyzer performance test:

If the analyzer did not pass its performance test, refer to “Troubleshooting the Analyzer” in Chapter 1 of the *Agilent 89431A Service Guide*.

** For Agilent Internal Reference Only **

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