Installation Note

Agilent Technologies 85105A Option 50 Installation Instructions for RF Switch Replacement Kit 85105-60047

Agilent Technologies

85105-90023

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Products Affected:	85105A mm waveguide controller Option 50
Serial Numbers:	3146A00454 and below
To Be Performed By:	(X) Agilent Technologies Service Center (X) Customer or Personnel Qualified by Agilent (X) Agilent Personnel On-site
Estimated Installation Time:	1 hour

Description

This document details a procedure for replacing the DC-50 GHz RF switch (A24) in the 85105A mm waveguide controller. This procedure is necessary if the existing RF switch (A24) is defective.

Parts List

Quantity	Description	Part Number
1	Connector, 14 pin DIP and cable, 3 conductor, 28 AWG[a]	85105-60120
1	87222E Option 100, coaxial transfer switch, 2.4 mm, DC to 50 GHz[a]	87222-60016
1	Bracket—switch[a]	85105-00024
4	Screw, M2.5 x 6.0 mm[a]	0515-0366
2	Screw with lock washer, 4-40 x 0.250 inch	2200-0103
1	Installation note	85105-90023

a. These parts are shipped pre-assembled in the 85105-60047 RF switch replacement kit.

NOTE   The manuals mentioned in this document can be accessed on the internet by searching for the part number of the manual at the following Web site:

http://www.agilent.com

For example, to access the *Installation Note,* go to the Web site and search for "85105-90023".

A24 Removal Procedure

1. Turn off the 85105A mm waveguide controller and unplug the power cord from the back.

WARNING   **It is important to unplug the power from the back of the instrument before proceeding to avoid personal injury.**

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2. Remove the top cover from the 85105A by loosening the screw on the top rear of the instrument.

NOTE   The screw is locked into the top cover. It will be necessary to check that the lid is loose enough by pulling on the rear of the cover.

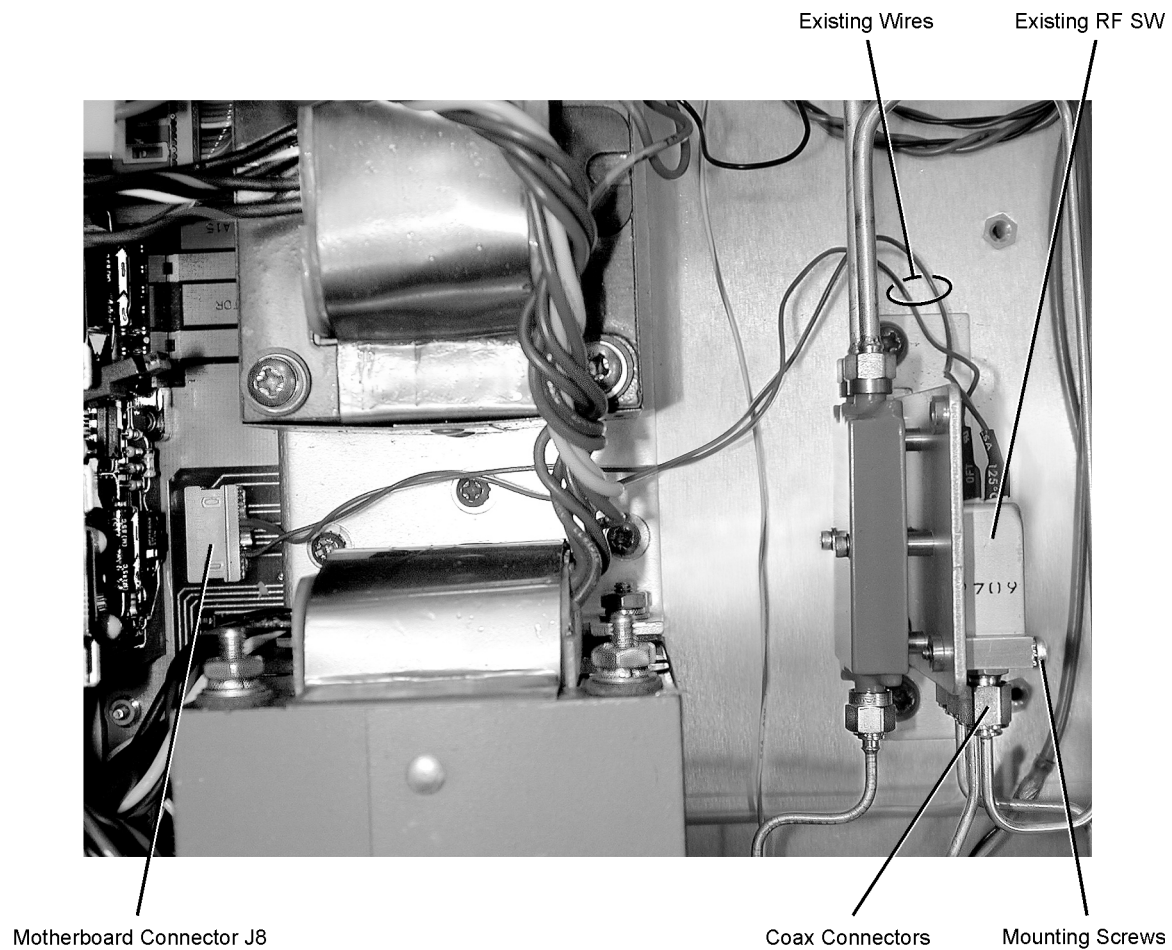---

3. Loosen the three 2.4 mm semirigid coax cables from the existing RF switch (A24). Refer to .

CAUTION   Do not attempt to remove the three cables completely at this time, as this could result in unnecessary bending of the semirigid coax cables.

Figure 1 Removal of old A24

Existing Wires   Existing RF SW

Motherboard Connector J8   Coax Connectors   Mounting Screws

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4. Carefully remove the switch control cable from the J8 connector on the motherboard (refer to Figure 1).

5. Remove the two screws that attach the RF switch to the switch bracket and remove the old A24 (refer to Figure 1).

6. Carefully back the switch away from the three semirigid coax cables and remove the old A24 (refer to Figure 1).
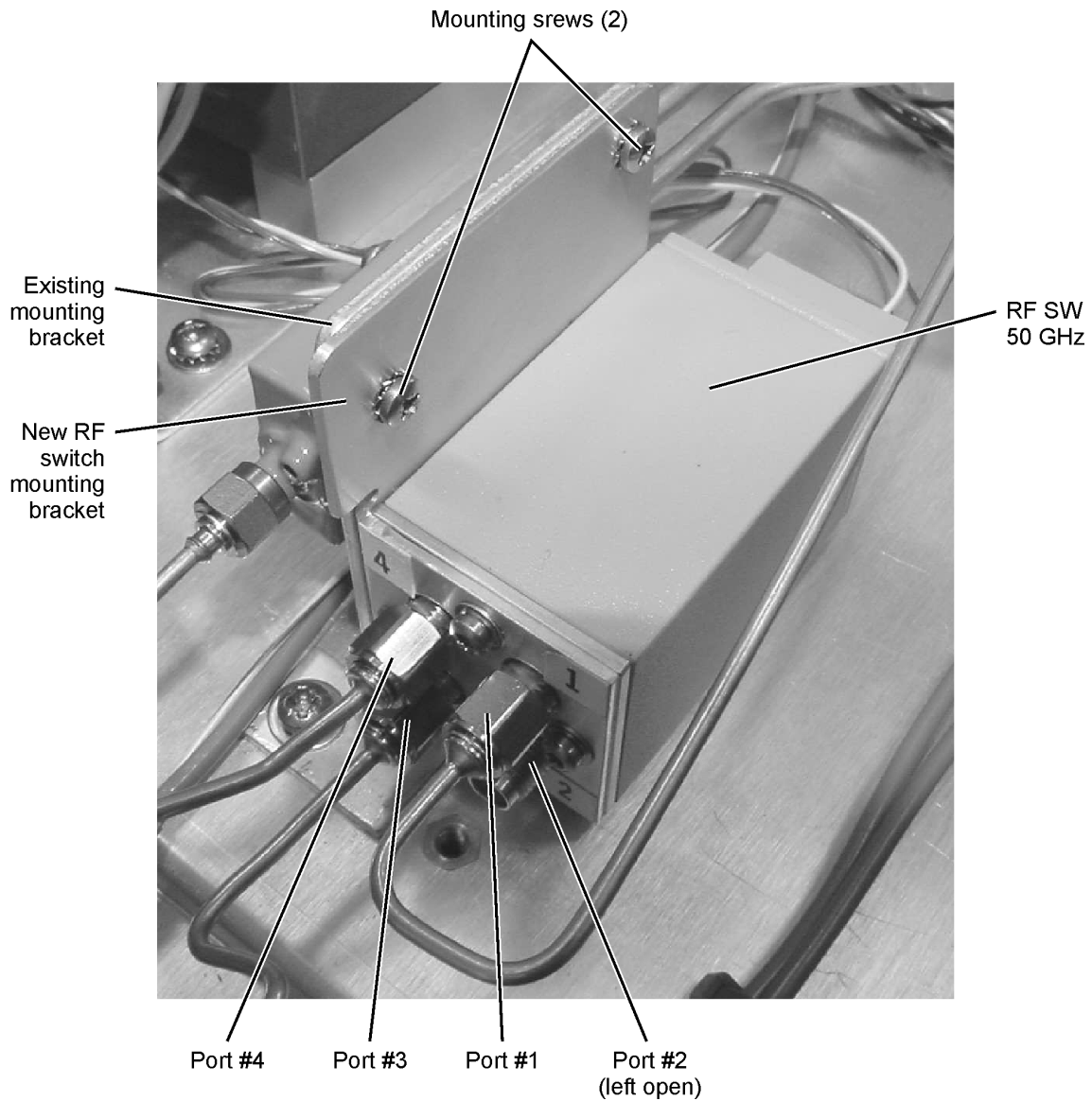
A24 Installation Procedure

1. Position the new switch and bracket assembly with the three soldered control cable connections toward the bottom and front of the instrument. The bracket side with two screw holes should be facing towards the existing bracket (refer to Figure 2).
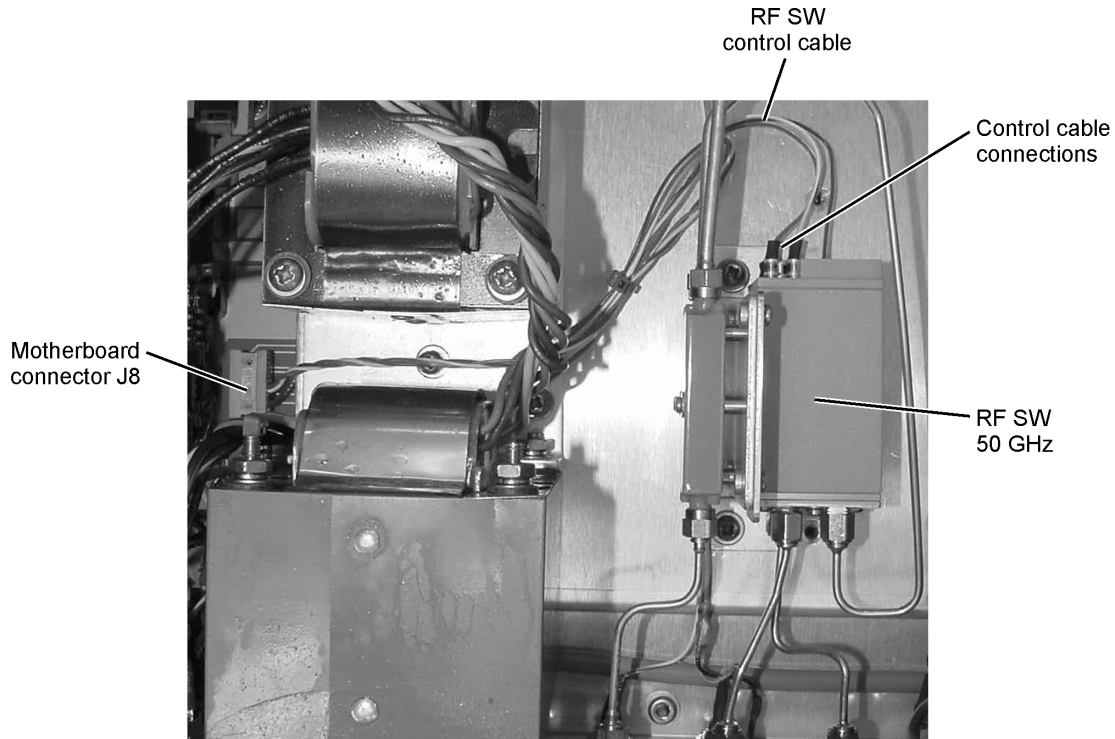

NOTE   The control cable terminals on A24 will be facing the front of the 85105A, and the 2.4 mm connectors will be facing the rear.

Figure 2   Installation of new A24 (side view)

Mounting srews (2)

Existing mounting bracket

New RF switch mounting bracket

RF SW 50 GHz

Port #4   Port #3   Port #1   Port #2 (left open)

Figure 3   Installation of the new A24 (top view)

RF SW
control cable

Control cable
connections

Motherboard
connector J8

RF SW
50 GHz

fig_3_top_a24

2. Plug the control cable attached to the transfer switch into J8 on the motherboard (refer to Figure 3).

3. Carefully attach the new A24 to the existing semirigid coax cables. Connect the lower coax cable first. The top cables can then be easily inserted without damage. The cable attached to port 1 will need to be bent slightly to fit (refer to Figure 2 on page 6).

    Avoid unnecessary bending of the coax cables. Port 2 will be left open.

4. Two screws with lock washers are supplied with this kit. Insert the two screws (p/n 2200-0103) through the new bracket and into the existing bracket and tighten (refer to Figure 2).

5. Torque the semirigid coax cable connectors to 8 in-lbs (refer to Figure 2).

A24 Verification Procedure

1. Set SW4 to OPEN on the A4, GPIB board assembly (p/n 85105-60014). Refer to Figure 4.

2. Plug in the power cord and turn on the 85105A mm waveguide controller power switch.
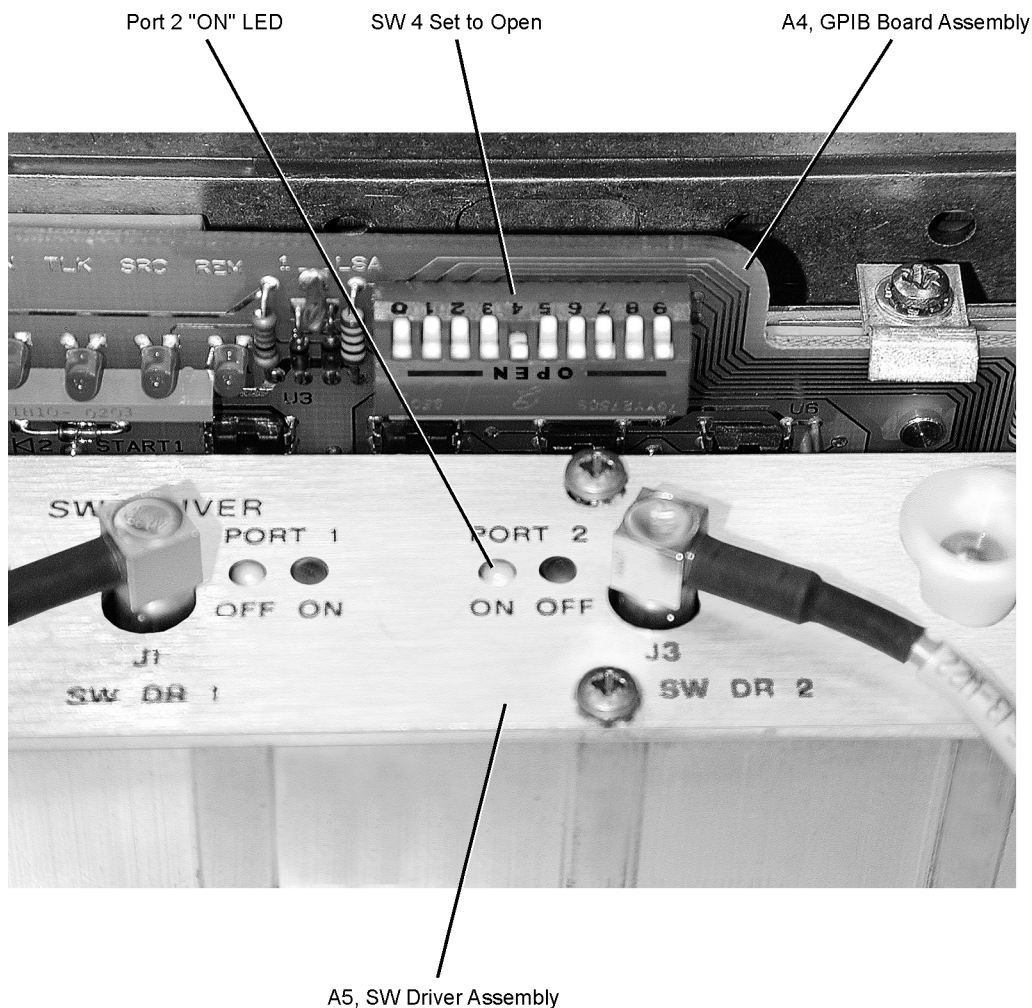

WARNING   **Hazardous voltages are present! Use care when working on a live instrument to avoid personal injury.**

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3. Verify that the Port 2 "ON" green LED is illuminated on the A5, SW Driver board assembly (p/n 85105-60005) and listen for audible click of A24 (refer to Figure 4).

4. Turn off power switch.

Figure 4   Testing of A24

Port 2 "ON" LED   SW 4 Set to Open   A4, GPIB Board Assembly

A5, SW Driver Assembly
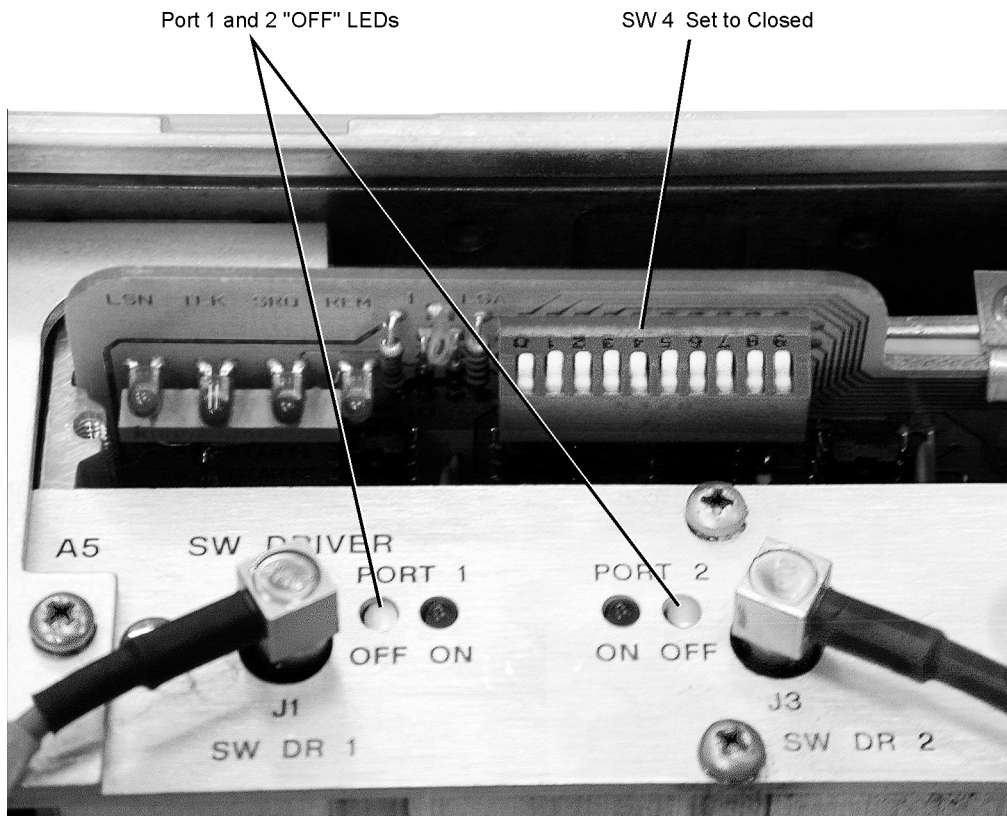
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5. Return switch 4 to the 'closed' position (refer to Figure 5).

6. Turn on the power switch and verify that the port 1 and port 2 "OFF" yellow LEDS are illuminated on the A5, SW Driver board assembly (p/n 85105-60003). Refer to Figure 5.

Figure 5   Normal Operation

Port 1 and 2 "OFF" LEDs   SW 4 Set to Closed

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7. Turn off the 85105A power switch and unplug the power cord.

8. Reinstall the top cover and retighten the screw on the top rear of the instrument.

9. Return unit to service in system and verify system if needed.

Contacting Agilent

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