

# Installation Note

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## **Agilent Technologies 85105A Option 50 Installation Instructions for RF Switch Replacement Kit: Part Number 85105-60045**



Part Number 85105-90022

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Products Affected: .....	85105A mm waveguide controller option 50
Serial Numbers: .....	3146A-00420 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
2	Connector, 14 pin DIP <sup>a</sup>	1251-2499
10 inches	Ribbon cable, 14 conductor, 28 AWG <sup>a</sup>	8120-0655
1	RF switch, SPDT, DC to 50 GHz <sup>a</sup>	08517-80002
1	RF switch bias PC board assembly <sup>a</sup>	85105-60065
2	Screw, 4-40 x 1.000 inch	2200-0119
1	Installation note	85105-90022

- a. These parts are shipped as a single unit in the 85105-60045 RF switch replacement kit.

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### 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 "85105-90022".

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## A24 Removal procedure

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

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**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.

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

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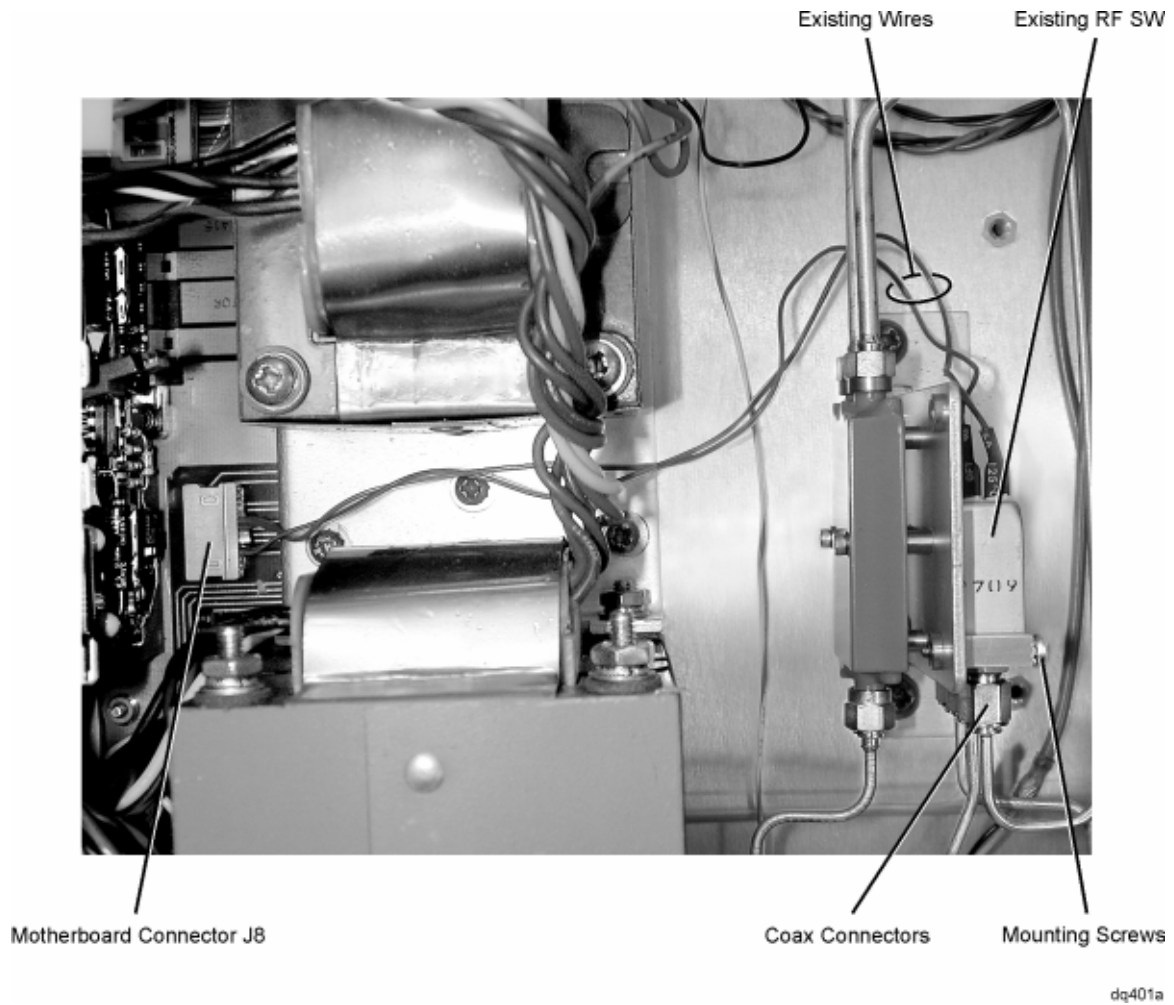
3. Loosen the three 2.4 mm semi-rigid coax cables from the existing RF switch (A24). Refer to [Figure 1 on page 5](#).

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**CAUTION**        Do *not* attempt to remove the three cables completely--at this time--as this could result in unnecessary bending of the semi-rigid coax cables.

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**Figure 1 Removal of old A24**



4. Carefully remove the switch control cable from the J8 connector on the mother board (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 semi-rigid coax cables and remove the old A24 (refer to [Figure 1](#)).

## A24 Installation Procedure

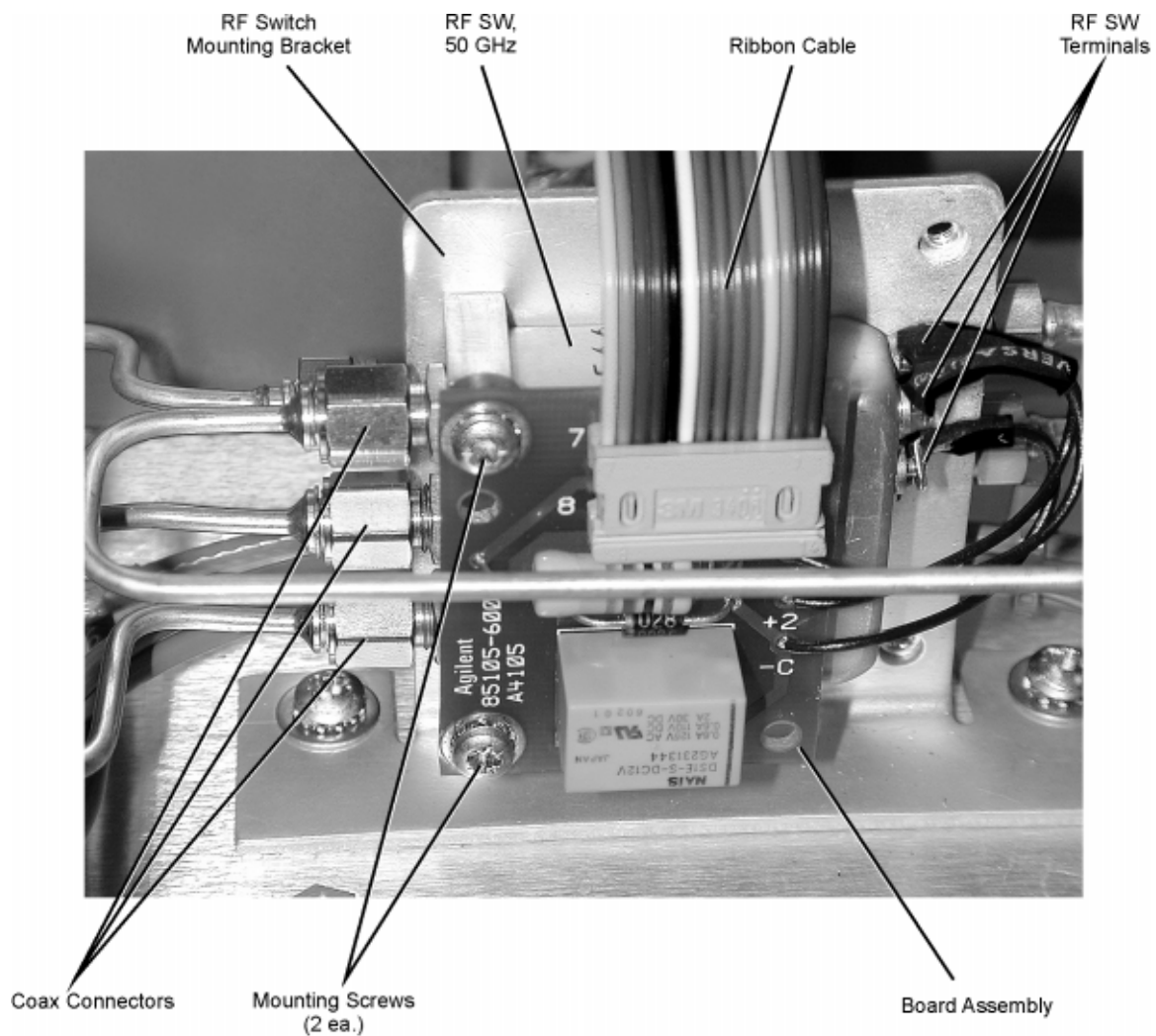
1. Position the new switch on the bracket with the three DC connections (labeled +1, +2 and -C) toward the top of the instrument (Refer to [Figure 2](#)).

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**NOTE** There is a small bias PC board attached to the switch with three wires attached to the three DC connectors (labeled +1, +2 and -C). The three DC connections on A24 will be facing the front of the 85105A and the bias PC board will be facing the outside of the 85105A.

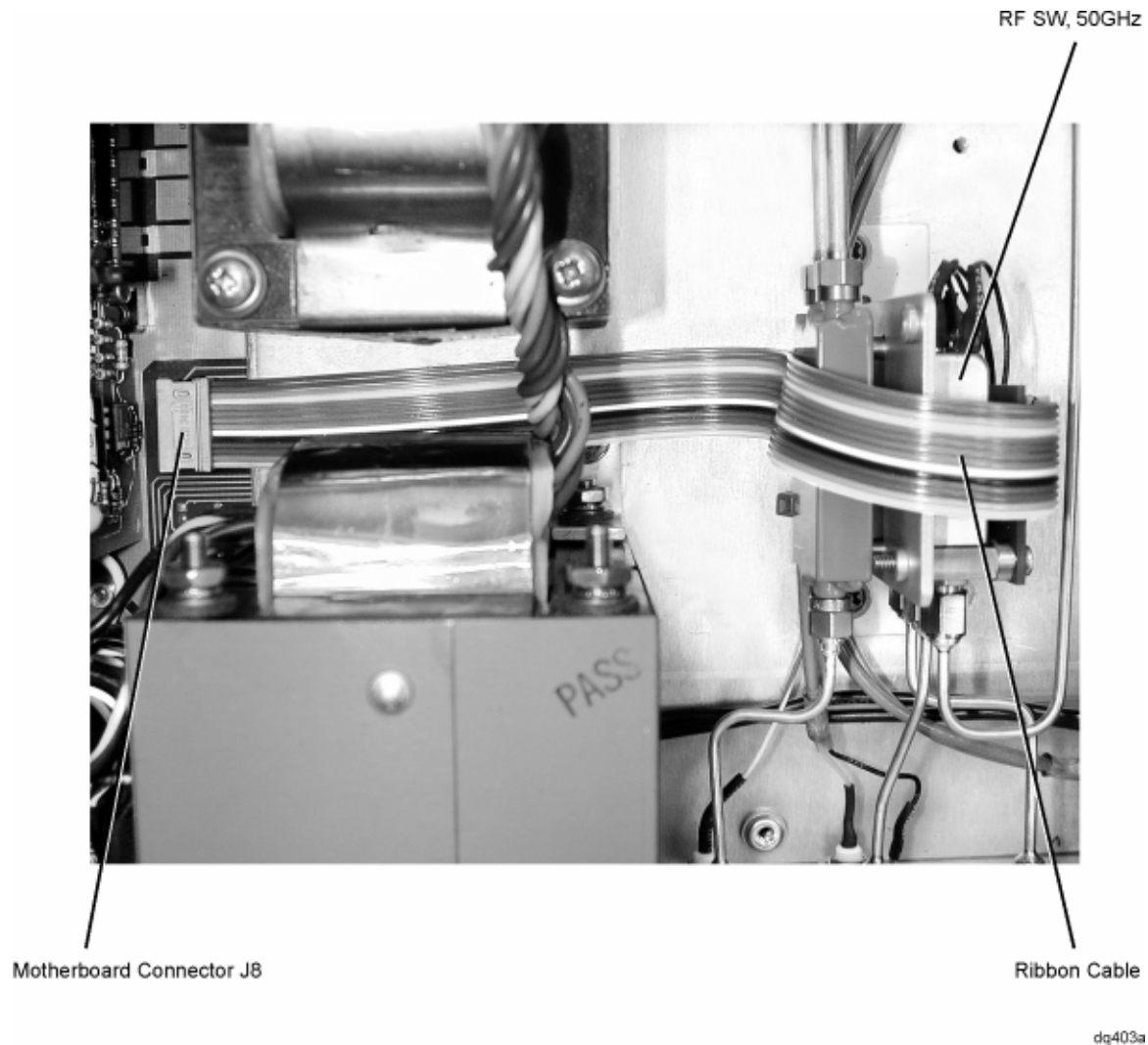
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**Figure 2 Installation of new A24 (side view)**



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**Figure 3 Installation of the new A24 (top view)**



2. Plug the ribbon cable attached to the bias PC board into J8 on the mother board (Refer to [Figure 3](#)).
3. Carefully attach the new A24 to the existing semi-rigid coax cables. Connect the lower coax cables first. The top cable can then be easily inserted without damage (refer to [Figure 2 on page 6](#)).
  - ).
4. Two one inch screws (part number 2200-0119) are supplied with this kit. Insert the two screws through the two standoffs attached to the bias PC board, then through the two mounting holes in the switch. Attach the switch/bias PC board assembly to the switch mounting bracket as shown in [Figure 2](#).
5. Torque the semi-rigid coax cable connectors to 8 in-lbs (refer to [Figure 2 on page 6](#)).

## A24 Verification Procedure

1. Set SW4 to OPEN on the A4, GPIB board assembly (part number 85105-60014). Refer to [Figure 4](#).
2. Plug in the power cord and turn on the 85105A mm waveguide controller power switch.

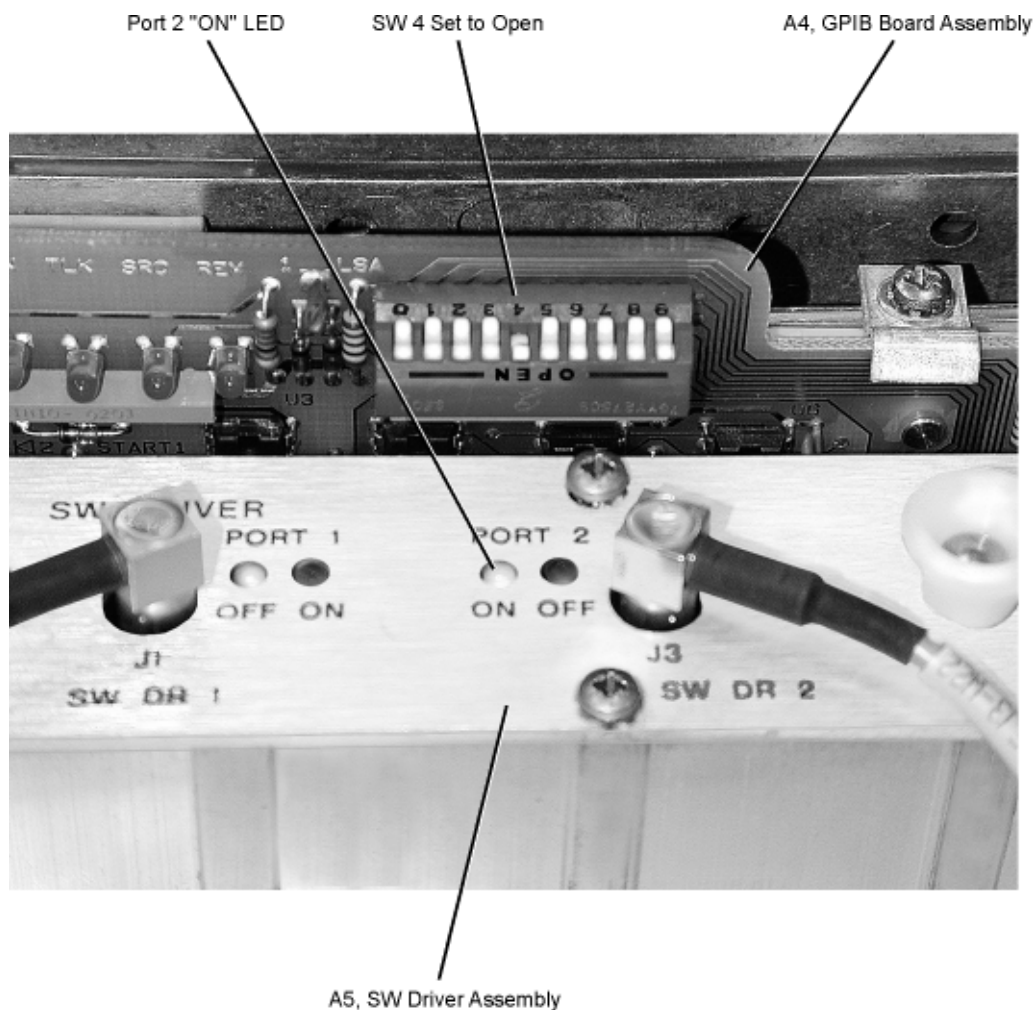
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**WARNING**    **Hazardous voltages are present! Use care when working on a live instrument to avoid personal injury.**

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3. Verify that the Port 2 “ON” green LED is illuminated on the A5, SW Driver board assembly (part number 85105-60005) and listen for audible click of A24 (refer to [Figure 4](#)).
4. Turn off power switch.
5. Return switch 4 to the ‘closed’ position (refer to [Figure 5 on page 9](#)).

**Figure 4**    **Testing of A24.**



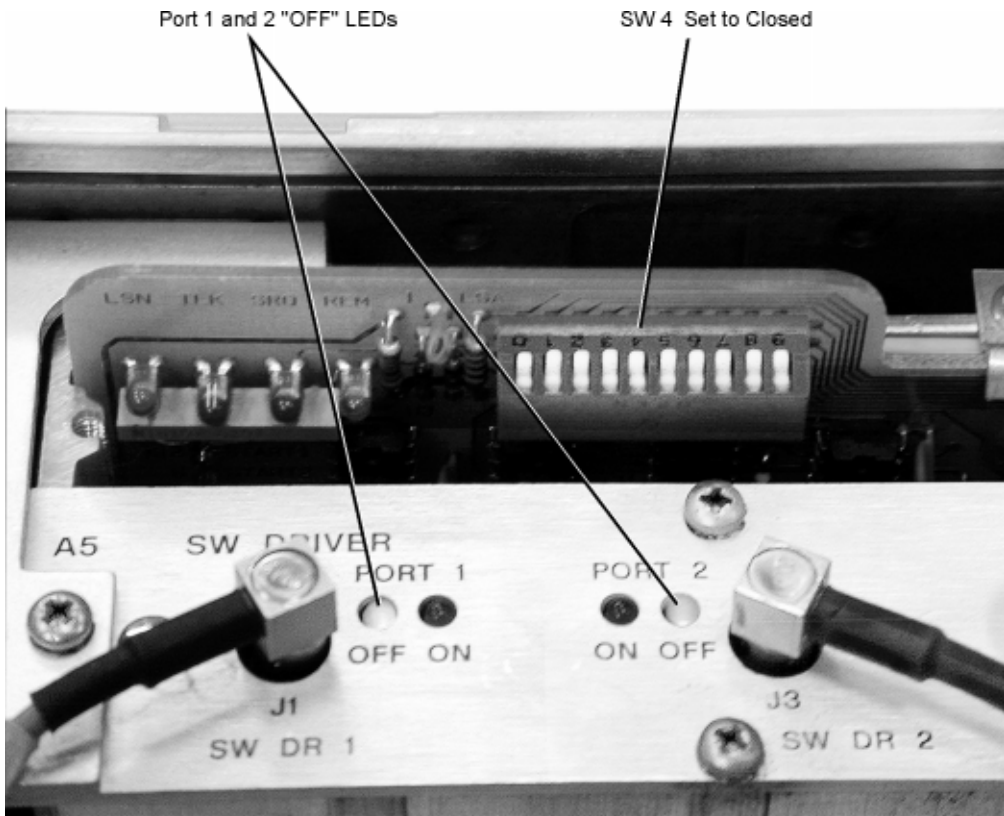
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6. Turn ON the power switch.



7. Verify that the port 1 and port 2 "OFF" yellow LEDs are illuminated on the A5, SW Driver board assembly (part number 85105-60003). Refer to [Figure 5](#).

**Figure 5 Normal Operation**



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8. Turn off the 85105A power switch and unplug the power cord.
9. Reinstall the top cover and retighten the screw on the top rear of the instrument.
10. Return unit to service in system and verify system if needed.

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