

Installation Note

**Agilent Technologies 8719ES / 8720ES and
8719D / 8720D Network Analyzers
Buffer Amplifier Service Kit**



Agilent Technologies

Agilent Part Number 08720-90447

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Buffer Amplifier Service Kit

Products Affected:	8719D and 8720D 8719ES and 8720ES
Serial Numbers:	All
To Be Performed By:	(X) Agilent Service Center (X) Agilent Personnel on Site (X) Customer

Introduction

This service kit is used to replace a defective buffer amplifier and attenuator with a new buffer amplifier that contains the attenuator as part of its internal design.

Installation Kit Parts List

Table 1-1 Service Kit 08720-60312 Contents

Item	Quantity	Description	Part Number
1	1	Installation Note	08720-90447
2	1	Buffer amplifier	5087-7115
3	1	Cable	08720-20311
4	1	Cable	08720-20312
5	1	Cable	08720-20313
6	1	Cable	08720-20314
7	1	Cable	08720-20315
8	1	Cable	08720-20316
9	1	Cable	08720-20317
10	1	Cable	08720-20279

Table 1-2 Required Equipment and Tools

Quantity	Description	Part Number
1	T-10 TORX screwdriver	N/A
1	T-15 TORX screwdriver	N/A
1	5/16 TORX screwdriver	N/A
1	Antistatic wrist strap	9300-1367
1	Antistatic wrist strap cord	9300-0980
1	Static control table mat and earth ground	9300-0797

Safety Considerations

WARNING	Before you disassemble the instrument, turn the power switch off and unplug the instrument. Failure to unplug the instrument may result in personal injury.
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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.
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Removal Procedure

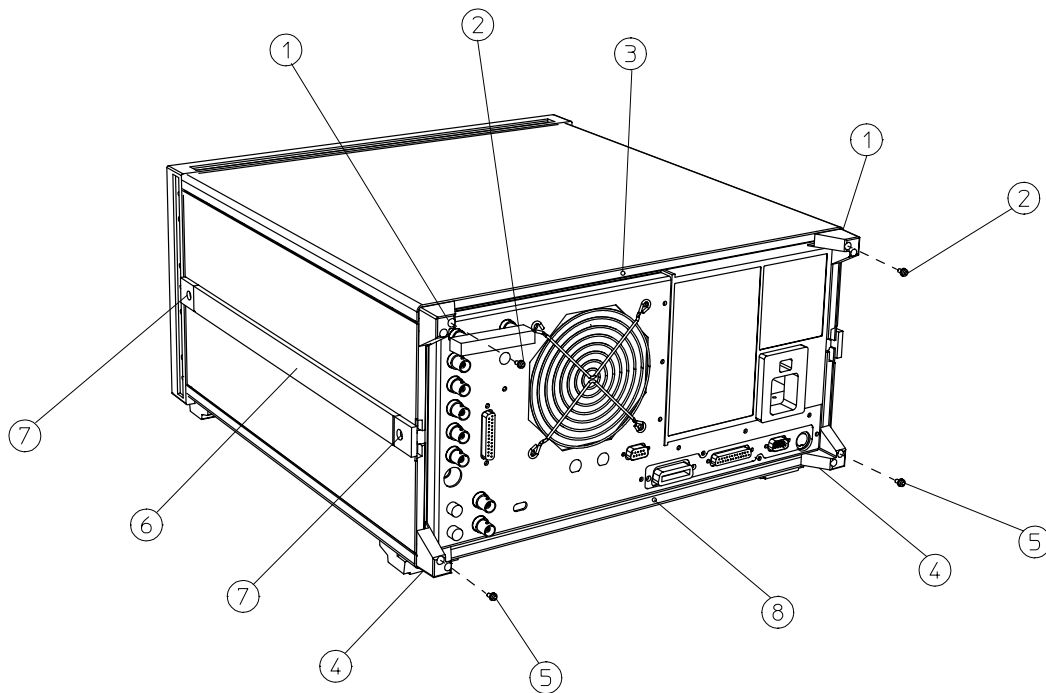
Step 1. Remove the top cover.

1. Remove both upper rear feet (item 1) by loosening the attaching screws (item 2).
2. Loosen the top cover screw (item 3).
3. Slide the cover off.

Step 2. Remove the bottom cover.

1. Remove both lower rear feet (item 4) by loosening the attaching screws (item 5).
2. Loosen the bottom cover screw (item 8).
3. Slide the cover off.

Figure 1-1 Top and Bottom Cover Removal



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Step 3. Remove the front panel assembly.

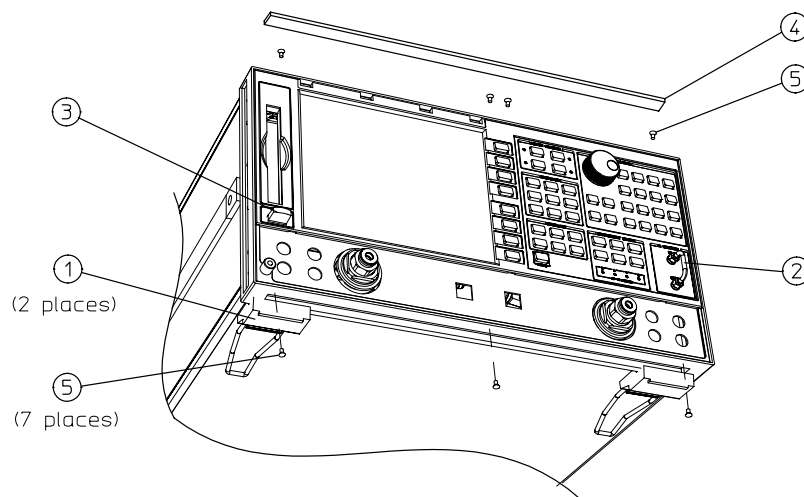
1. Disconnect the power cord.
2. Remove the front bottom feet (item 1).
3. Remove any RF cables that are attached to the front panel (item 2).

NOTE	Options may differ from the figure and have more than one RF cable on the front panel.
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4. Remove the line button (item 3).
5. Remove the trim strips (item 4) from the top edge of the front frame by prying under the strip with a small slot screwdriver.
6. Remove the 4 flathead screws (item 5) from the top and the 3 flathead screws (item 5) from the bottom.

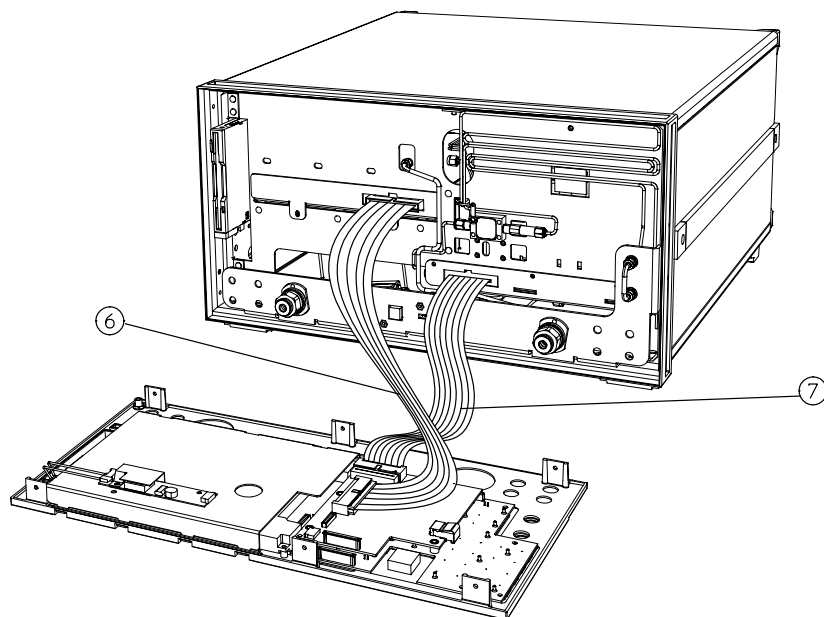
NOTE	The 3 bottom screws are on both ends and in the middle. They look like the screws from the top. Do not remove the other 6 screws from the bottom.
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Figure 1-2 Front Panel Assembly Removal



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7. Slide the front panel over the test port connectors.
8. Disconnect the ribbon cables (items 6 and 7). The front panel is now free from the instrument.



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Step 4. Remove the buffer amplifier and attenuator.

1. From the top, disconnect the bias cable from the PC board and the buffer amplifier pins.
2. Disconnect the semi-rigid cables from the buffer amplifier (A72 or A73) and the attenuator (A75) using a 5/16 inch open-end wrench.
3. Remove the four screws holding the buffer amplifier to the frame and retain the hardware.
4. Remove the bias cable and set it aside for re-use.
5. Remove the buffer amplifier.

NOTE

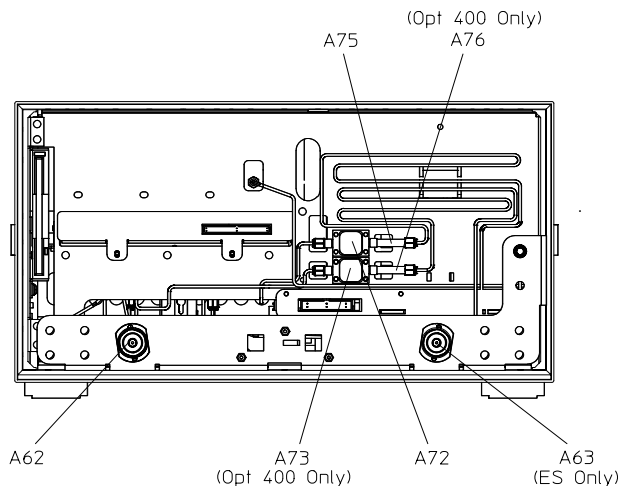
If you have an analyzer with Options 400 + 089 or Options 400 + 089 + 012, the attenuator is located between the A23 and A24 switches. The attenuator (A75) and the cable (W57) between the A23 and A24 switches, must be removed and replaced with the new cable (W51), part number 08720-20279.

Step 5. Remove the cables.

1. Remove the screw securing the cable bracket to the chassis.
2. Remove the bracket and set it aside for re-use.
3. Remove the cables that attach to either side of the buffer amplifier and attenuator combination.

Step 6. Clip the bias cable.

1. Clip the purple wire on the bias cable (that was removed in Step 4) flush with both connectors. Remove and discard the wire.



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Replacement Procedure

Step 1. Install the new cables.

1. Install the new semi-rigid cables according to the following chart. All entries apply to all the network analyzers.

Option Configuration	Buffer Amp Reference Designator	Attenuator Reference Designator	Cable Reference Designator	Cable Part Number
Standard, 007, 012, 007 + 012, 400, 400 + 012	A72	A75	W33	08720-20311
			W36	08720-20312
085, 089, 085 + 089, 089 + 012, 089 + 007, 089 + 007 + 012	A72	A75	W38	08720-20313
			W50	08720-20314
400, 400 + 012, 400 + 089, 400 + 012 + 089	A73	A76	W41	08720-20316
			W77	08720-20315
400 + 089, 400 + 089 + 012 ^a	A72	A75	W56	08720-20317
			W50	08720-20314

- a. On analyzers with Options 400 + 089 or Options 400 + 089 + 012, the attenuator is located between the A23 and A24 switches. The attenuator (A75) and the cable (W57) between the A23 and A24 switches must be removed and replaced with the new cable (W51), part number 08720-20279.

Step 2. Install and test the new buffer amplifier.

1. Reinstall the new buffer amplifier by reversing the removal procedure in Steps 4 and 5.
2. Reassemble the front panel and top and bottom covers by reversing the removal procedure in Step 1 through Step 3.
3. Verify operation by powering up the analyzer and observing phase lock across the band. No adjustments or performance tests are necessary.