SERIALS PREFIX

This manual applies directly to HP Model 8743B
Reflection-Transmission Test Units having serial
prefix number 2047A.

SERIAL PREFIXES NOT LISTED

For serial prefixes above 2047A, a “Manual
Changes” sheet is included with this manual.

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8743B

REFLECTION-TRANSMISSION TEST UNIT
SAFETY CONSIDERATIONS

SAFETY EARTH GROUND

This is a Safety Class I product (provided with a protective earthing terminal). An un-interruptible power supply must be provided from the main power source to the product input wiring terminals. The product must be connected to the ground (earth) terminal. If the product is energized via an auto-transformer, make sure the common terminal is connected to the neutral (grounded) side of mains supply.

BEFORE APPLYING POWER

Verify that the product is configured to match the available power source per the input power configuration instructions provided in this manual.

If this product is to be operated using a power cord, make sure the common terminal is connected to the neutral (grounded) side of mains supply.

SAFETY SYMBOLS

⚠️ Indicates earth (ground) terminal.

⚠️ Warning symbol: the product must be marked with this symbol when it is necessary for the user to refer to the instruction manual (refer to Table of Contents).

غاز Indicates hazardous voltages.

GENERAL

This product and related documentation must be reviewed for familiarity with safety markings and instructions before operation. This product has been designed and tested in accordance with international standards.

WARNING

Any servicing, adjustment, maintenance, or repair of this product must be performed only by qualified personnel.

Adjustments described in this manual may be performed with power supplied to the product while power supply covers or panels are removed. Energy available at many points may, if contacted, result in personal injury.

Capacitors inside this product may still be charged even when disconnected from the power source.

To avoid a fire hazard, only fuses within the specified type (normal blow, time delay, etc.) are to be used for replacement.

CAUTION

The WARNING sign denotes a hazard. It calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a CAUTION sign until the indicated conditions are fully understood and met.

The CAUTION sign denotes a hazard. It calls attention to an operating procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a CAUTION sign until the indicated conditions are fully understood and met.
1-7. A 20-dBm coaxial attenuator is required for transmitter measurements. An
attenuator connected across the output of the
transmitter will result in the output of the
transmitter becoming a milliwatt power level.

1-8. An external reference line (HP part number 08735-90094) is used to obtain a reference line level of 100 mW. This level is used to calibrate the reference
attenuator and to set the output power level of the
transmitter. This reference power level is
obtained by connecting the transmitter output to
a 10-dBm attenuator and then connecting the
output of the 10-dBm attenuator to the reference
line. This level is then used to calibrate the
reference attenuator.

1-9. The reference line level is
obtained by connecting the reference line to
the transmitter output and adjusting the
transmitter output to achieve a level of 100 mW.

1-10. The reference line level is then used to
set the output power level of the transmitter.

1-11. A GPS disciplined reference
(OPTION 1847) is used to provide a reference
to the internal reference of the 11610B.

1-12. The model 11610B is a two-port
equipment.

1-13. The model 11610B is a two-port
equipment.

1-14. A rack mounting kit is available to install
the instrument in a 19-inch rack.

1-15. The 11610B is connected to the
instrument's back panel REMOTE INPUT connector and the
remote panel REMOTE INPUT connector using the
11610B's RS-232 interface. This interface provides
a means to connect the instrument to a computer or
display system.

1-16. The 8140B, SAW, HP Model 8140B,
and SAW, HP Model 8140B, are available in
a 19-inch rack.

1-17. The SAW, HP Model 8140B, and
SAW, HP Model 8140B, are available in
a 19-inch rack.

1-18. The SAW, HP Model 8140B, and
SAW, HP Model 8140B, are available in
a 19-inch rack.

1-19. The SAW, HP Model 8140B, and
SAW, HP Model 8140B, are available in
a 19-inch rack.

1-20. The SAW, HP Model 8140B, and
SAW, HP Model 8140B, are available in
a 19-inch rack.

1-21. The SAW, HP Model 8140B, and
SAW, HP Model 8140B, are available in
a 19-inch rack.

1-22. The SAW, HP Model 8140B, and
SAW, HP Model 8140B, are available in
a 19-inch rack.

1-23. Signal Source

1-24. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-25. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-26. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-27. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-28. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-29. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-30. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-31. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-32. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-33. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-34. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-35. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-36. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-37. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.

1-38. The 8620C/8920D, 8620A/8392A
are available in a 19-inch rack.
For each instrument, form the sequential number that is unique
digits from the sequential number that is unique

1.2. GENERAL INFORMATION

MANUAL

1.25. INSTRUMENTS COVERED BY

Model 8743B
2-3. 115/230 VAC Operation

Before connecting the power cable:

- Turn off the instrument and pull the plug.

To avoid damage to the instrument, set the 115-230 volt switch to the 115 volt position when using the model 8743B for operation.

2-16. To prepare the Model 8743B for operation:

- Set the plug adapter to the fuse. The plug adapter is used to supply approximately 150 milliamp;relectricity. Install a fuse line of the type which the plug adapter is marked on the plug adapter. Set the fuse to 115 or 230 volts ±10%.

- Set the Model 8743B’s output power source on the rear panel to 115 or 230 volts ±10%.

2-17. Power Requirements

Prepare for Use

Use by model number and full scale number:

- In any correspondence, refer to the instrument model number and full scale number. Also, mark the container and all standard materials with a power source label on which all specifications and materials are included in the container and all standard materials used in the container.

2-4. Repackaging for Shipment

2-3. Repackaging for Shipment

Sales Office, located at the back of this manual, contains the nearest Heat-Packeted Sales and Service Office, where you can purchase supplies and accessories for Heat-Packeted Spares and Service Office, and your nearest Heat-Packeted Spares and Service Office. If the instrument is damaged in any way, return it to the nearest Heat-Packeted Spares and Service Office. If the instrument is damaged in any way, return it to the nearest Heat-Packeted Spares and Service Office. For broken or damaged materials, use new ones that have been included.

2-2. Reinspect the instrument for shipping damage as soon as it is unpacked. Check that all pieces are intact.

2-1. Incoming Inspection

Installation

Section II

Installation

Model 8743B
2-22. Rack Mounting

modular instruments

Tracker on other Hewlett-Packard full rack-width
model 8743B self-aligning when

d horrible. Provide clearance for all circuits

enough to make the panel features easier to see.

operation. The stand includes the instrument

programs. Install horizontal panels and

all Electrical Manufacturers Association (NEMA)

2-21. On project operating personnel the Nation-

2-17. To project operating personnel the Nation-

2-16. Power Cable

Installation

Panel connectors labeled "REFERENCE LINE."
PROCEDURES FOR MEASUREMENT PROCEDURES

3-11. MEASUREMENT PROCEDURES

3.11.1. POWER

In the HP 8410B module, the power level is set by pressing a switch labeled "Power" on the rear panel. The power level can be adjusted with this switch. To set the power level to the desired value, press the switch to the desired position, and then release it. The power level is displayed on the meter. The measurement plane is not to be used with the HP 8410B module. A switch labeled "Power" on the rear panel allows the desired power level to be set to zero or to any desired reference. For the measurement plane to be set to zero or to any desired reference, press the switch labeled "Power" on the rear panel.

3-12. PROCEDURES FOR TRANSMISSION MEASUREMENTS

In the HP 8410B module, the transmission measurement is set by pressing a switch labeled "Transmission" on the rear panel. The transmission measurement is displayed on the meter. The measurement plane is not to be used with the HP 8410B module. A switch labeled "Transmission" on the rear panel allows the desired transmission level to be set to zero or to any desired reference. For the measurement plane to be set to zero or to any desired reference, press the switch labeled "Transmission" on the rear panel.

SECTION III

INTRODUCTION

OPERATION
Figure 3-2  Rear Panel Features

1. Reference and Test Output Ports
2. Reference Line May Be Replaced with a Longer Section of Teflon Cable to Extend the Range of the Reference Signal for HP 8410B Network Analyzer.
3. RF Input. Impedance under test frequency applied to the device under test (DUT) is 50 ohms.
4. Remote Input. Accepts control signals from 8743B when the contact is open. Nominal voltage function to be measured. Normal voltage is 12 VDC. Maximum current from the 8743B is 2 mA when the contact is short circuit to 12 VDC.
5. Power Cable Connector. NEMA type with 0.027 max. 0.016 min. 0.053 max.
7. Line Voltage Selector. Permits operation from 115 to 230 VAC on adjacent plate.
8. Screwed number plate. The number plate should be included when the bent edge is in front of the 8743B.
9. Fuse Holder: Rect Line Fuse rating is on plate adjacent to fuse. Selected operating voltage of cor.
10. Reference for 115 and 230 VAC on adjacent plate.
11. 400 Hz, approximately 15 watts. Reference for connected to 8743B power output plug.
12. Harmonic Frequency Converter of HP 8414A. Harmonic frequencies are converted to required frequencies.
Reflection Measurements
B. Hold thumbscrew to return indication and readjust REFERENCE PLANE EXTENSION until counter reads all zeros.

A. Adjust REFERENCE PLANE EXTENSION control to position 8412A on the center.

6. Adjust the 8410B PHASE VERNIER for a horizontal line on the 8412A CRT.

REFERENCE PLANE EXTENSION for a horizontal line on the 8412A CRT.

a. Hold thumbscrew to return indication and readjust REFERENCE PLANE EXTENSION control until counter reads all zeros.

b. Hold thumbscrew to return indication and readjust REFERENCE PLANE EXTENSION control until counter reads all zeros.

C. Set the sweep oscillator to automatic sweep. Adjust the sweep oscillator and network analyzer controls to produce a network analyzer over the frequency band of interest.

2. Connect a coaxial short such as the HP 1156A to the 8743B UNKOWN port and Phase.

1. Connect equipment as shown in the test setup.

Calibration for Reflection Phase

Procedure for Swept Measurement

8412A display.

Greater resolution in swept mode is desired, an 8720A Switch/Selector/Normalizer may be added to the Calibration consists of adjusting the 8412B REFERENCE PLANE EXTENSION.

Because of system frequency response, the most accurate system calibration and phase indication using a coaxial short to produce a reflection coefficient indication of I at 180
1. Connect the device under test to the 8743B UNKNOWN port.

2. At the 8412A, set the MODE switch to PHASE.

3. Select a point on the CRT phase trace to measure, move that spot as close to the center as possible.

4. On the 8412A, set the TEST GAIN switch to center the trace on the CRT screen.

5. If the trace is below the center, adjust the GAIN control until the trace is centered.

6. Adjust the AMP/DB switch to 0, the 8410B AMP DIVIDER switch to 0.10, the 8410B/8412A/8413B is now calibrated.

7. Adjust the AMP/DB switch to 0.25 and the magnitude trace at the center of the trace.

8. Adjust the 8410B AMP/DB switch to 1.0, the 8410B/8412A/8413B is now calibrated.

9. Test the magnitude calibration by measuring the magnitude of the reflection.

10. Adjust the TEST GAIN switch to center the trace on the CRT screen.

11. Adjust the AMP/DB switch to 0, the 8410B AMP DIVIDER switch to 0.10, the 8410B/8412A/8413B is now calibrated.

12. Adjust the AMP/DB switch to 0.25 and the magnitude trace at the center of the trace.

13. Adjust the 8410B AMP/DB switch to 1.0, the 8410B/8412A/8413B is now calibrated.

14. Adjust the TEST GAIN switch to center the trace on the CRT screen.

15. Adjust the AMP/DB switch to 0, the 8410B AMP DIVIDER switch to 0.10, the 8410B/8412A/8413B is now calibrated.

16. Adjust the AMP/DB switch to 0.25 and the magnitude trace at the center of the trace.

17. Adjust the 8410B AMP/DB switch to 1.0, the 8410B/8412A/8413B is now calibrated.

18. Adjust the TEST GAIN switch to center the trace on the CRT screen.

19. Adjust the AMP/DB switch to 0, the 8410B AMP DIVIDER switch to 0.10, the 8410B/8412A/8413B is now calibrated.

20. Adjust the AMP/DB switch to 0.25 and the magnitude trace at the center of the trace.

21. Adjust the 8410B AMP/DB switch to 1.0, the 8410B/8412A/8413B is now calibrated.

22. Adjust the TEST GAIN switch to center the trace on the CRT screen.

23. Adjust the AMP/DB switch to 0, the 8410B AMP DIVIDER switch to 0.10, the 8410B/8412A/8413B is now calibrated.

24. Adjust the AMP/DB switch to 0.25 and the magnitude trace at the center of the trace.

25. Adjust the 8410B AMP/DB switch to 1.0, the 8410B/8412A/8413B is now calibrated.

26. Adjust the TEST GAIN switch to center the trace on the CRT screen.

27. Adjust the AMP/DB switch to 0, the 8410B AMP DIVIDER switch to 0.10, the 8410B/8412A/8413B is now calibrated.

28. Adjust the AMP/DB switch to 0.25 and the magnitude trace at the center of the trace.

29. Adjust the 8410B AMP/DB switch to 1.0, the 8410B/8412A/8413B is now calibrated.
**Performance Tests**

**Figure 4-1, Performance Test (4 of 6)**

1. At the 6743B, press TRANSMISSION RETURN port.
2. Connect TEST port of the Dual-Directional Coupler to the TRANSMISSION RETURN port.
3. Connect HP 909A Fixed Coupler Lead to the 8743B.
4. Connect Dual-Diagonal Coupler and the 8410B/441A Network analyzer under the same conditions as those used for the Dual-Diagonal Coupler in 5.1 and 5.2. The reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
5. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
6. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
7. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
8. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
9. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
10. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
11. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
12. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
13. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
14. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
15. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
16. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
17. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
18. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
19. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
20. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
21. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
22. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
23. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
24. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
25. Connect the analyzer to the end port of the network analyzer, and the reflected coefficient of the end port is measured by connecting the analyzer to the end port of the network analyzer, and the reflected coefficient of the other port is measured by connecting the analyzer to the other port of the network analyzer.
Figure 4.1, Performance Test (2 of 6)

Procedure, Using the 8414A Display Unit

1. Connect equipment as shown in setup above.
2. Connect the coaxial short to the 874B Unknown port and depress the REF1 pushbutton.
3. Set the Sweep Oscillator to automatic sweep. Adjust the Sweep Oscillator and Network Analyzer controls to phase lock the Network Analyzer over the segment of the 874B frequency range covered by the Sweep Oscillator. If necessary, adjust 8410B CHANNEL GAIN to place trace on CRT.
4. Push and hold the 8414A BEAM CTR pushbutton and adjust the centering controls to place the dot in the center of the polar display.
5. At the 874B, adjust the REFERENCE PLANE EXTENSION to displace the trace to a dot or smallest cluster on the 8414A.
6. Adjust the 8410 TEST CHANNEL GAIN and AMPLITUDE VERNIER controls to place the dot at the center of the cluster at the outer circle of the graphicle.
7. Remove the coaxial short and replace with the sliding load.
8. Increase the 8410B TEST CHANNEL GAIN by 30 dB, phase the sliding load, noting the CRT display. At the point where the trace crosses nearest to the outer circle of the graphicle, the trace must be inside the outer circle.
9. If the sweep-display cannot be resolved satisfactorily, make single-frequency measurements as follows:
   a. Set the Sweep Oscillator to single-frequency operation. Select the frequency which corresponds to the point of greatest reflection on the 8414A display.
   b. Adjust the 8414A centering controls, while phasing the load until the dot is centered about the center of the CRT. (See Figure 3-4.)
   c. Depress the 8414A beam center pushbutton. The dot must be inside the outer circle of the grahicle.
10. Repeat steps 2 through 9 for other frequency segments as necessary to cover the range of 2 to 18 GHz (or 20 to 12.4 GHz for Op. 08).
Figure 4-1. Performance Test (1 of 6)

1. Connect the coaxial shunt to the 8410 unknown.
2. Connect the coaxial shunt to the 8410 unknown.
3. Set the sweep oscillation to automatic sweep. Adjust the sweep duration to provide a 0.1% sweep.
4. Set the 8110 test channel gain to 20 dB.
5. Remove the coaxial shunt and replace with the sliding.
6. Load the network analyzer over the segment.
7. Repeat steps 2 through 6 for other frequency settings.
9. Place the sliding load on the display.
10. Increase the 8110 test channel gain by 30.
11. Connect the coaxial shunt to the 8410 display unit.
12. Using the 8410 display unit.

Procedure:

1. Place the sliding load on the display.
2. Load the network analyzer over the segment.
3. Set the 8110 test channel gain to 20 dB.
4. Remove the coaxial shunt and replace with the sliding.
5. Connect the coaxial shunt to the 8410 unknown.
6. Adjust the sweep duration to provide a 0.1% sweep.
7. Set the sweep oscillation to automatic sweep. Adjust the sweep duration to provide a 0.1% sweep.
8. Connect the coaxial shunt to the 8410 display unit.
9. Using the 8410 display unit.

Test Description:

Directivity Test

Performance Test
<table>
<thead>
<tr>
<th>Recommended HP Model</th>
<th>Critical Specifications</th>
<th>Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>9090</td>
<td>50-ohm APC-7 connector</td>
<td>50-ohm Fixed Load</td>
</tr>
<tr>
<td>11626A</td>
<td>50-ohm adapter</td>
<td>(3) Required (Adapter APC-7 to N)</td>
</tr>
<tr>
<td>11692D</td>
<td>724 DB</td>
<td>Dual-Directional</td>
</tr>
<tr>
<td>909A</td>
<td>SWR: 5:1, 6:1 to 18 GHz</td>
<td>50-ohm coaxial, shield termination with 50-ohm coaxial shield</td>
</tr>
<tr>
<td>11562A</td>
<td>60-ohm Short (APC-7 connection)</td>
<td>50-ohm coaxial shield</td>
</tr>
<tr>
<td>8720A and 8814A, 8410B/8411A OPL 018/8412A</td>
<td>No substitute may be used</td>
<td>No substitute may be used</td>
</tr>
<tr>
<td>8353A/83532A, 8620C/86290B</td>
<td>VSWR &lt;= 3:1</td>
<td>Network Analyzer</td>
</tr>
<tr>
<td></td>
<td>Power Variations ±7 dB</td>
<td>Sweep Oscillator</td>
</tr>
<tr>
<td></td>
<td>Initial Power 1 MW minimum into 50 ohm</td>
<td>Frequency Range: 20 to 121.4 GHz (2.0 to 15</td>
</tr>
</tbody>
</table>

Table 4-1. Recommended Test Equipment for Performance Test Procedure

4.2. Performance Test Procedures

Performance Tests

Section IV
Figure 3-12. Pushbutton Selector Bulb Replacement

The pushbutton is the same as previously shown. If the pushbutton breaks, the front panel and guard will fall off. It is necessary to replace the pushbutton. Remove lens from the pushbutton. Be sure the pushbutton is clean. If the pushbutton has been removed, follow the bulb replacement procedure.

NOTE

1. Remove the pushbutton lens from the hollow end of the pushbutton and insert the pushbutton tool over the end of the pushbutton.
2. Place the end of the pushbutton tool over the center of the pushbutton switch. With the bulb extractor tool, push the tool up until the lower end of the pushbutton lens pops out. As shown in B.
3. Remove the old bulb from the hollow end of the extractor and insert the new bulb into the hollow end of the extractor. Push the bulb back as shown in C. 
4. Replace the pushbutton lens by first positioning the lens at the top of the lens into the top of the pushbutton.
5. Gently pull until lens slips off the bulb.
6. The extractor tool holds the new bulb, insert the new bulb into the socket. To separate bulb and extractor.

Operation

Model 8743B
GLOW LAMP PART NUMBER IS HP 2140-0244. TORNAD: lamp replacement and remove the lamp replacement the retaining ring near the front panel. Position the switch on the Model 743B housed in the PowerPorn. Turn the lamp that indicates the power is ON. 3-20. The lamp that indicates the power is ON.

TON Switches is shown in Figure 3-12.

3-29. Switch Lamp Replacement

3-30. Do not apply more than slight inward press-

a. Do not disassemble the connector.

b. Do not replace the connector.

c. The replacement of inner conductor should be

3-31. The Important Precautions that apply to

3-32. Contact Replacement

3-33. Contact Replacement

3-34. Contact Replacement

3-35. Contact Replacement

TRANSMISSION RETURN connectors, only the astounding theory of the UNKNOW

3-36. Important precautions about the

3-37. No tool is required for installing a replace-

3-38. No tool is required for installing a replace-

3-39. No tool is required for installing a replace-

3-40. No tool is required for installing a replace-

where the inner conductor of the UNKNOW

3-41. Care of APC-7 Connectors

3-42. Care of APC-7 Connectors

3-43. Care of APC-7 Connectors

3-44. Care of APC-7 Connectors

3-45. Care of APC-7 Connectors

3-46. Important precautions about the

3-47. No tool is required for installing a replace-

3-48. No tool is required for installing a replace-

3-49. No tool is required for installing a replace-

3-50. No tool is required for installing a replace-

3-51. No tool is required for installing a replace-

3-52. No tool is required for installing a replace-

where the inner conductor of the UNKNOW

3-53. Care of APC-7 Connectors

3-54. Care of APC-7 Connectors

3-55. Care of APC-7 Connectors

3-56. Care of APC-7 Connectors

3-57. Care of APC-7 Connectors

3-58. Care of APC-7 Connectors

3-59. Care of APC-7 Connectors

3-60. Care of APC-7 Connectors

3-61. Care of APC-7 Connectors

3-62. Care of APC-7 Connectors

3-63. Care of APC-7 Connectors

3-64. Care of APC-7 Connectors

3-65. Care of APC-7 Connectors

3-66. Care of APC-7 Connectors

3-67. Care of APC-7 Connectors

3-68. Care of APC-7 Connectors

3-69. Care of APC-7 Connectors

3-70. Care of APC-7 Connectors

3-71. Care of APC-7 Connectors

3-72. Care of APC-7 Connectors

3-73. Care of APC-7 Connectors

3-74. Care of APC-7 Connectors

3-75. Care of APC-7 Connectors

3-76. Care of APC-7 Connectors

3-77. Care of APC-7 Connectors

3-78. Care of APC-7 Connectors

3-79. Care of APC-7 Connectors

3-80. Care of APC-7 Connectors

3-81. Care of APC-7 Connectors

3-82. Care of APC-7 Connectors

3-83. Care of APC-7 Connectors

3-84. Care of APC-7 Connectors

3-85. Care of APC-7 Connectors

3-86. Care of APC-7 Connectors

3-87. Care of APC-7 Connectors

3-88. Care of APC-7 Connectors

3-89. Care of APC-7 Connectors

3-90. Care of APC-7 Connectors

3-91. Care of APC-7 Connectors

3-92. Care of APC-7 Connectors

3-93. Care of APC-7 Connectors

3-94. Care of APC-7 Connectors

3-95. Care of APC-7 Connectors

3-96. Care of APC-7 Connectors

3-97. Care of APC-7 Connectors

3-98. Care of APC-7 Connectors

3-99. Care of APC-7 Connectors

4. Where the inner conductor of the UNKNOW

b. Do not disassemble the connector.

c. The replacement of inner conductor should be

a. Do not apply more than slight inward press-

b. Do not disassemble the connector.

c. The replacement of inner conductor should be

d. Do not attempt to repair contacts.

e. Do not re-use contacts.

4. Where the inner conductor of the UNKNOW

b. Do not disassemble the connector.

c. The replacement of inner conductor should be

a. Do not apply more than slight inward press-

b. Do not disassemble the connector.

c. The replacement of inner conductor should be

d. Do not attempt to repair contacts.

e. Do not re-use contacts.

4. Where the inner conductor of the UNKNOW

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b. Do not disassemble the connector.

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b. Do not disassemble the connector.

c. The replacement of inner conductor should be

a. Do not apply more than slight inward press-

b. Do not disassemble the connector.

c. The replacement of inner conductor should be

d. Do not attempt to repair contacts.

e. Do not re-use contacts.
Table 3-2. Signal Requirements for Remote Operation

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<tr>
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<td>Pin 17</td>
<td>Pin 18 or 36 VO</td>
</tr>
<tr>
<td>Transmission</td>
<td>Pin 17</td>
<td>Pin 18 or 36 VO</td>
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<tr>
<td>Measurement</td>
<td>Pin 17</td>
<td>Pin 18 or 36 VO</td>
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Figure 3-10. Typical Remote Circuit

Table 3-3. Contact Crosses for Remote Operation

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<td>19</td>
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<td>Remote TRANS-REP Select</td>
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<tr>
<td>Remote Control Comm.</td>
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<td>19</td>
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<td>No Contact</td>
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</table>
transmission measurements by reducing mismatch amplitude.

3-16. Increased Accuracy for Trans.

Reflection measurement at this frequency.

Reflection coefficient of the device under test.

Increase accuracy for reflection.

Figure 3-9. Locus of Measured Reflection with Load Is Moved.

Figure 3-8. Locus of Measured Reflection when Load Is Moved.

Errors.
CALIBRATION DESCRIPTION

Calibration consists of adjusting the 8743B REFERENCE PLANE EXTENSION to obtain
equal reference and test channel electrical lengths and obtaining reference, magnitude and
phase indications using a "Thru.".

CALIBRATION PROCEDURE

1. Connect equipment as shown in set up. Connect a 10-dB attenuator, such as the HP 8492A
 Option 010, to the 1610B semi-rigid cable (see Paragraph 3-17) and connect the
 attenuator to the 8743B UNKOWN port forming a "Thru."

2. Depress the 8743B TRANS pushbutton.

3. Set the Sweep Oscillator to automatic sweep. Adjust the Sweep Oscillator and Network
 Analyzer controls to phase lock the Network Analyzer over the frequency band of interest,
 and obtain a trace on the 8414A.

4. Momentarily push and hold the 8414A beam center pushbutton and adjust the centering
 controls to place the dot in the center of the polar display.

5. Obtain equal reference and test channel electrical lengths by adjusting the REFERENCE
 PLANE EXTENSION to collapse the trace to a dot or smallest cluster. The digital counter
 should be set to zero. A convenient way to do this is as follows:

a. Adjust REFERENCE PLANE EXTENSION crank until counter reads all zeros.

b. Hold thumbwheel to retain zero indication and readjust REFERENCE PLANE
 EXTENSION to collapse the trace to a dot or smallest cluster.

6. Adjust the 8410B phase and amplitude controls to place the dot or cluster for a reference
 indication of $\theta = 120^\circ$.

The 8410B/8414A/8743B system is now calibrated for phase and magnitude. Do not adjust the
 controls used in the preceding steps or the calibration will be invalid.

MEASUREMENT

1. Insert the device to be tested between the UNKNOWN port and the 10-dB attenuator.

2. Note the 8410B TEST CHANNEL GAIN setting. This is the calibrated gain setting. Adjust
 the TEST CHANNEL GAIN to locate the CRT display on the outside ring. The difference
 in TEST CHANNEL GAIN settings is the magnitude of the transmission gain or loss of the
device under test.
Figure 3-6: Transmission Measurements Using Network Analyzer with 8414A Power Display (1 of 2)

TRANSMISSION MEASUREMENTS
From 1.0 to 0.1 at the outer edge.

**CHANGING GCN** By 20 dB changes the full scale reflection-coefficient calibration.

*A percentage change in the TEST CHANNEL GAII, or, for example, increasing the TEST CHANNEL GAII, with a new amount of the same magnitude change, may result in the TEST CHANNEL GAII being considerably different from the actual tested value.*

To correct, repeat the calibration procedure to produce a reflection coefficient calibration of 1 at 180 degrees.

---

**NOTE**

1. Remove the coaxial short and connect the device to be tested to the 8743B UNKNOWN.

2. Read the reflection coefficient, magnitude and phase, or importance using a Smith Chart.

3. Adjust the 8414A PHASE VERIFIER TEST CHANNEL GAII, and AMP VERIFIER.

**MEASUREMENT**

Calibration for greater accuracy is discussed in Paragraphs 3.14 and 3.15.

---

**NOTE**

A convenient way to do this is as follows:

1. Momentarily push and hold the 8414A BEAM CONTINUOUS PULSATION button and adjust the centering.
2. Set the REFL pushbutton to the HP 1165A to the 8743B UNKNOWN port and depress.
3. Connect a coaxial short on the 8414A and obtain a trace on the 8414A.
4. Obtain equal reference and test channel electrical lengths by adjusting the REFERENCE extension plane until the trace is at the center of the trace distribution.
5. Obtain equal reference and test channel electrical lengths by adjusting the REFERENCE extension plane until the trace is at the center of the trace distribution.

---

**CALIBRATION PROCEDURE**

Connect equipment as shown in steps 1 to 4.

**CALIBRATION DESCRIPTION**

Operation
Reflection Measurements
Calibration for Transmission Magnitude

5. Adjust the 8410B PHASE VERIFIER and the 430B REFERENCE PLANE EXTENSION to the phase dot in the center reference plane. Increase the 8412A PHASE adjustment until the phase dot is at the center. Adjust the 8412A PHASE adjustment and the 8410B PHASE VERIFIER until the phase dot is at the center.

4. Set the sweep oscillator to CW operation. Adjust the Network Analyzer to obtain phase due to the center dot in 8412A CRT.

3. Adjust 8412A phase output DEGREES to zero degree offset (either polarity).

2. Connect the 10 dB attenuator to the 8743B UNKNOWN port to form a "twin", and depress the TRANS DISSIPATION. On the 8412A, set NODE switch to PHASE and PHASE DIV.

1. Connect equipment as shown in the test setup.

Procedure for CW Measurements

At the UNKNOWN port, subtract the CRT offset value. The total value is the transmission phase of the device under test.

PHASE OFFSET value, and if the selected point on the trace is below the center line, select DEGREES OFFSET setting to the value of the trace above or below the center, preferably the DEGREES PHASE.

4. Calculate the phase of the selected point by adding algebraically the DEGREES PHASE.

Operation
Transmitter Measurement
Using Network Analyzer with 8412A Display (3 of 4)

1. Connect the device under test between the 8743B UNKNOWN port and the 10 dB attenuation that connects with the 11610B cable forms the Transmission Return path.

2. At the 8412A, set the MODE switch to PHASE.

3. Select a point on the CRT phase trace to measure. Move that spot as close to the center of the phase trace as possible with the 8412A PHASE OFFSET controls. Set PHASE to a point on the CRT phase trace to measure.

4. At the 8412A, set the MODE switch to AMPL.

Transmission Magnitude Test

- **CALIBRATION SETTINGS**: Gain Setting should be noted since measurements will be made referenced to this setting. Gain setting will be noted as the 8410B TEST CHANNEL. Gain is set to 0 dB after each of the verification, do not adjust the 8410B AMP/AMPLIFIER controls. During subsequent calibration, should 8412A and TEST CHANNEL GAIN be identical. Also, the 8410B AMP/AMPLIFIER controls are now verified and amplifier 8410B AMP/AMPLIFIER controls are on.

2. At the 8412A, set the MODE switch to AMPL.

3. Alternatively increases the 8412A AMP/AMPLIFIER sensitivity until the 8412A AMP/AMPLIFIER controls on 8412A trace center.
Figure 3-2. Transmission Measurement Using Network Analyzer with 8412A Display (a) of 4.

1. At 8412A, set MODE switch to AMP and AMP/DB switch to 10.

Calibration for Transmission Magnitude

EXTENSION during subsequent tests of the phase calibration will be invalid. Do not adjust the 8412B PHASE VERIFIER on 8743B REFERENCE PLANE. If phase error is detected on the 8412A, calibration for 8412A and 8412B is now calibrated for the 8412B phase plane.

7. On 8412A, set PHASE DEG/DIV to 90, TH. 8412A/8412B 8412A or 8412B is now calibrated for 8412B.

6. Adjust the 8410B PHASE VERIFIER control to position 8412A phase plane through the center.

EXTRACTION of the horizontal trace on the 8412A CRT.

b. Hold thumbwheel to remain zero indication and readout reference plane.

Adjust reference plane extension crank until counter reads all zeros.

c. Hold thumbwheel to remain zero indication and readout reference plane.

d. Adjust reference plane extension crank until counter reads all zeros.

The display under test. A convenient way to do this is as follows:

1. Obtain equal reference and last channel electrical length by adjusting the 8412B.

The sweep phase output should be displayed on the 8412A CRT.

2. Adjust the 8412A phase switch to zero degree offset (either polarity).

a. Adjust 8412B phase offset DEGREES to zero degree offset (either polarity).

3. Adjust 8412B phase offset DEGREES to 90.

b. Depress the TRANS button on the 8412B.

4. Set the sweep oscillator to automatic sweep. Adjust the sweep oscillator and network analyzer controls to phase lock the network analyzer over the frequency band of interest.

5. Obtain equal reference and last channel electrical length by adjusting the 8412B.

The display under test. A convenient way to do this is as follows:

6. Adjust the 8410B PHASE VERIFIER control to position 8412A phase plane through the center.

The sweep phase output should be displayed on the 8412A CRT.

Calibration for Transmission Phase

PROCEDURE FOR SWEEP MEASUREMENT

8412A display.

Greater resolution in sweep mode is desired. In 8743B, STORAGE/NORM be added to the display. If measurement is done in CW mode, therefore both sweep and CW modes are detected. It is possible of system response errors, the most accurate system calibration and phase indicators using a "thin".

Calibration consists of adjusting the 8412B reference plane extension to obtain calibration.

CALIBRATION DESCRIPTION
Reflection Magnitude and Phase Tests in CW Mode

Tests in CW mode are the same as previously described in swept mode.

Phase calibration will be invalid. Phase calibration will be invalid.

1. Connect equipment as shown in the test setup.
2. Press the REF/Phasor button. On the 8412A, set MODE switch to PHASE and PHASE
3. Connect a coaxial short such as the HP 1167A to the 8743B UNKNOWN port and de-
4. Adjust 8412A phase offset DEGREES to 180 degrees offset (either polarity).
5. Adjust the 8410B PHASE VERIFIER and the 8743B REFERENCE PLANE EXTN.
6. On the 8412A, set PHASE DEG/DIV to 90. The 8410B/8412A/8743B is now calibrated.
7. On the SWEEP FREQUENCY, do not adjust the 8410B PHASE VERIFIER until the phase dot is
8. ENCE PLAN E EXTENSION, or the SWEEP FREQUENCY during subsequent tests of the the center. First, calibrate the PHASE VERIFIER until the phase dot is
9. The calibration adjustments for CW magnitude are the same as previously described for swept

Calibration for Reflection Magnitude

Calibration for Reflection Phase
Procedure

1. Connect equipment as shown in test setup.
2. Adjust 8748B CNTRLD GAIN and ASP.
3. Set the sweep (except for automatic sweep) adjacent to the SWR marker.
4. Adjust the 8748B TEST CHANCEL GAIN and ASP.
5. Increase the 8748A ANTENNA sensitivity to 1.5 V/div.
6. Remove the coaxial short from the UNKNOWN port.
7. Draw the line on the face of the CRT with a grease pencil in the center line of the CRT face.
8. Obtain a maximum amplitude CRT presentation.
9. If the sweep on the 8748A ANTENNA port is not the same, adjust the SWR marker so that the CRT face falls on the center line of the CRT face.
10. Interactive source reflection is included less than specified in model 8748A CRT from 8 to 1.5 GHz.

SOURCE REFLECTION COEFFICIENT TEST

NOTE

\( \frac{1}{2} \leq \text{SWR} \leq \frac{1}{4} \) 
\( \text{SWR} \leq 0.05 \) (peak-to-peak amplitude)

From 8 to 1.5 GHz, the SWR must not exceed 0.5. From 1.5 to 2 GHz, the SWR must not exceed 1.25. From 2 to 3 GHz, the SWR must not exceed 2.5.
2. Remove circuit board assemblies A1 and A3.

1. Remove the 8743B top and bottom covers.

**Removal:** To remove the A2, A6, and A7 assemblies.

**PERFORMANCE PROCEDURE**

**4.7. COAXIAL SWITCH REPLACEMENT**

4.7.1. Perform the troubleshooting procedure in Figure 1. After the 8743B port test, remove the coaxial switch. However, if the switch is open, the switch is not the port problem. To perform a repeatable test, use the following test.

The switch is open, the switch is not the port problem. The test is performed by shorting the port test switches across the two coaxial switches. Repeat the test until the switch is closed. The switch is closed, the switch is not the port problem. The test is performed by shorting the port test switches across the two coaxial switches. Repeat the test until the switch is closed.

**Transmission Check:** See Figure 8743B.

**NOTE**

**4.5. Repeatable performance**

Repeatable performance is a supplemental specification.

**TESTS**

**4.4. RF TROUBLESHOOTING**

4.4.1. RF TROUBLESHOOTING

**4.3.** Performance Tests

Model 8743B
Perform the insertion loss troubleshooting procedure in Figure 4-2. If sharp power variances occur during any step, vary the torque until power variation is minimum.

9. 

Perform the insertion loss troubleshooting procedure with the wires previously installed.

8. 

Mounting deck:

Remove the six coaxial switch mounting screws. Disassemble the switch to be replaced and unsolder the appropriate white and green wires. Replace the switch to be replaced and reconnect the wires so they may be soldered under the appropriate white and green wires. Protect the six coaxial switch mounting screws.

7. 

Remove the AG, A6, and AT assemblies from the instrument as one unit.

6. 

Remove the six coaxial switch mounting screws accessible from the bottom of the deck. Come through the deck (from the AG assembly) and AT assembly and AT7 assembly using a ¾-inch open-end wrench.

5. 

Loosen W6 and W9’s connectors to the AG and W7 from the AG assembly. Slide an inch of the cable as possible through the hole in the sub-deck. Disconnect W7 from the AG assembly.

4. 

Loosen W6 and W9, connectors to the AG and W7 from the AG assembly. Insert the AG, A6, and AT7 assemblies into the sub-deck. Reinstall the AG, A6, and AT7 assemblies.

3. 

Remove cable W7 as follows:

2. 

Unit: Assemble the three coaxial switches into one unit. 

1. 

Installation. To install the AG, A6, and AT7 assemblies:

Remove the large thin securing nut to the test output connector.

Install the large thin securing nut to the test output connector.

Connect cable W7 to the AG assembly and switches.

Connect cable W6 and W9 to the appropriate screws.

Insert the AG, A6, and AT7 assemblies into the sub-deck. Loosen W6 and W9’s connectors to the AG and W7 from the AG assembly.

Loosen W6 and W9, connectors to the AG and W7 from the AG assembly. Insert the AG, A6, and AT7 assemblies into the sub-deck. Reinstall the AG, A6, and AT7 assemblies.

Perform the insertion loss troubleshooting procedure in Figure 4-2. If sharp power variances occur during any step, vary the torque until power variation is minimum.
Figure 4.2 Insertion Loss Troubleshooting (1 of 4)

10 DB ATTENUATOR: HP 8492A Option 010
COAXIAL SHORT: HP 11364A
TEST PORT EXTENSION CABLE: HP 11610B
CRYSTAL DETECTOR: HP 8470A
HP 7038B
X-Y RECORDER: HP 8478B Option 011
Power Meter: HP 4324A

Sweep Oscillator: HP 8620 Series or HP 8320 Series

Model 8743B
Figure 4.2. Insertion Loss Troubleshooting (2 of 4)

Model 8743B

Performance Tests

Step 1
Connect equipment as shown in Figure 4.2. Set sweep control for frequency band of interest.

Step 2
Press TRANS pushbutton. Monitor TEST output 2, dB from maximum to minimum. (Refer to response curve A1).

Yes

Troubleshoot W2 and associated connectors. (See Note 2.)

No

Troubleshoot W3, W4, W5, and associated connectors. (See Notes 1 and 2.)

Step 3
If the maximum to minimum at any frequency is greater than 1.6 dB from 2 to 8 GHz or 2.3 dB from 8 to 24 GHz, replace DCL and its 10 dB attenuator. (See Note 5.) If the average of the two traces is greater than 2 dB, troubleshoot W6, W7, W8, and A6, and associated connectors. Note W7, W8, and A6 are common to two RF paths; therefore, perform step 3. If step 3 checks OK, the trouble is most likely the 11510B Cable, W8, or A7. (See Note 2.)

Yes

If the maximum to minimum at any frequency is greater than 2 dB from 2 to 8 GHz or 2.3 dB from 8 to 24 GHz, then perform step 2. If step 2 checks OK, trouble is most likely the UNKNOWN port and monitor output. If the response curve indicates a reactive decrease, trouble is most likely W3. If the trouble is most likely W7 or A6.

No
Below, disassemble the cable and add a washer (HP part No. 6000-8476) as shown in.

Other conductor grounding problems on instruments with serial Numbers 928-00415 and

a frequency range is most likely caused by a cable other conductor grounding problem. For

making contact or cross other conductor separation. A power change over a broader

range of a female pin not connected by poor contact of adapter center conductor ring. The figure of a female pin not

can lead to increased noise levels in the test channel. A narrow spike is most likely
due to increased noise levels in the reference channel. A reference

NOTE 1

Reference Plane EXTENSION setting. The reference may be in the line starter or

Reference Plane EXTENSION setting. If the overall power rejection is greater than 2 dB at any

response curve will be achieved. Moving frequency response at several Reference

Reference Plane EXTENSION setting. The phase relationship between the sets of frequencies and the

response curve. The result of all discontinuities. By changing the line

response curve. The result of all discontinuities on one side of the line starter will combine with

NOTE 2

See Note 3

See Note 2

See Note 3
Figure 4.2. Insertion Loss Troubleshooting (a) of 4

- Insert the round stainless steel part removed in step 1. Should go into the connector.

The mating end of the center tab hits the lower reflection and

**NOTE**

1. Install a new attenuator center tab (HP Part No. 09743-60014) with a washer on each side of the center tab.

2. Insert the new attenuator center tab. Do not remove gold plated center conductor contacts.

3. A special tool is required to install these contacts.

4. Round stainless steel part (not the part with the Raise)

Keep it from rotating. Lightly press down or padded vice grip pliers until the connector is seated.

- Light a 1/2 inch open end wrench. Hold the brass attenuator housing connector to prevent it from moving. Do not remove the brass center core or brass attenuator housing.

**CAUTION**

If the brass parts move, directly may be
damaged.

10 db attenuation. The attenuator may be replaced using the following procedure:

1. Plug the directional coupler DCT (HP Part No. 6089-0816) includes a lumen 10 db attenuator.

**NOTE**

- A discontinuity appears in the specified cable. Intermittent these cables ends require special tools. Therefore, should be able to eliminate although cable ends appear to be perfect they may still present a discontinuity. Also

2. To occur from 11 to 12 GHz (see response curve A). Center conductor and center core may exhibit in insertion loss. The increased insertion loss is most likely

**NOTE**

If a cable center conductor is not centered it may distort a switch's center conductor.
Table 5-1. Reference Descriptions and Abbreviations

Table 5-2: When ordering a replacement part listed in Table 5-3.

5.3. ORDERING INFORMATION

5.1. INTRODUCTION

REPLACEABLE PARTS

SECTION V

Model 8743B
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<td>Table 2-2</td>
<td>Replaceable Parts</td>
<td>Model 8743B</td>
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## Table 5.2. Replaceable Parts

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**Columns:**
- **Reference Designation:** Unique identifier for each part.
- **HP Part Number:** The part number as assigned by the HP company.
- **Mfr. Part Number:** The manufacturer's part number for the part.
- **Qty:** The quantity required for assembly.

---

See introduction to this section for ordering information. Indicate factory selected value.
Table 5-2. Replaceable Parts

<table>
<thead>
<tr>
<th>Mfr. Part Number</th>
<th>Mfr. Code</th>
<th>Description</th>
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<th>HP Part Number</th>
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6.1. INTRODUCTION

SECTION VI

SERVICE
Contact

6-14. Connector Center Conductor

6-15. The center conductor contacts of the UNKNOWN and TRANSMISSION RETURN APC.

For replacing the connector, the following procedures must be repeated. Procedures of the center conductor connector set described on paragraphs 3-8 of the instructions shall be repeated. If any of the fibers of the center conductor connectors are broken, the connectors can be replaced.
Figure 6-2: Schematic Diagram Notes

1. Resistance in ohms, capacitance in microfarads unless otherwise noted.
2. Voltages shown on schematic diagram taken with HP 414A AUTOLCITERMETER.
3. Input resistance 100 KΩ, accuracy ±1% of reading ±0.5% full scale.
4. Asterisk denotes a factory-selected value. Value shown is unless otherwise indicated on schematic diagram, voltages taken with negative terminal of voltmeter connected to A17P2.
5. P/O = Part Of.
6. Enclosed front panel destination.
7. Enclosed rear panel destination.
8. Other assembly portection.
9. Identification numbers are shown on the circuit assemblies.
10. Numbers in circles on circuit assemblies show locations of test points.
11. Power supply common (not chassis ground).
12. Screwdriver adjustment.
13. Panel control.
14. Heavy dashed line indicates feedback path.
15. CW

17. Identify the narrow stripe, e.g. 012, second number the widest stripe, and third number the color. Endorse with color code. Code used (MIL-STD-68) is the same.

18. Service Model 8743B
This supplement contains important information for correcting manual errors and for adapting the manual to instruments containing improvements made after the printing of the manual. To use this supplement, make all ERRATA corrections and all appropriate serial number related changes indicated in the tables below.

<table>
<thead>
<tr>
<th>SERIAL PREFIX OR NUMBER</th>
<th>MAKE MANUAL CHANGES</th>
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<td>NEW ITEM</td>
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Manual change supplements are revised as often as necessary to keep manuals as current and accurate as possible. Hewlett Packard recommends that you keep the manual identification information from your supplement, or the model number and print date from the title page of the manual.
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<th>Design</th>
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Change the item for W9 as follows:

Change the HP Part Number of DC2 to 3080-0216.
Change the HP Part Number of DC1 to 3800-0390.
Figure 6-12. Power Supply Assy Component Identification