

## S E R V I C E N O T E

SUPERSEDES: None

**8753E Option 011 Vector Network Analyzer**

**Serial Numbers:** US00000000/US99999999  
 JP00000000/JP99999999

**Re-written Performance Test for Receiver Minimum R Channel Level for External Source Mode****Situation:**

The procedure and test record for Performance Test No. 4 (Receiver Minimum R Channel Level for External Source Mode) lead to failures at test frequencies of 5 GHz and 6 GHz when the network analyzer has firmware version 7.48 or higher. The Performance Test is found in the service guide for the 8753E Option 011, part number 08753-90404.

**Solution / Action:**

The procedure and test record have been re-written and are included below. This information should be used for any 8753E Option 011 network analyzer with firmware version 7.48 or higher. Instruments with a 3 Ghz source should be tested using the same procedure and test record but only for frequencies up to 3 GHz.

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DATE: February 2000

## ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:

**INFORMATION ONLY**

AUTHOR:	ENTITY:	ADDITIONAL INFORMATION:
FD	5310	



8753E Option 011

**4. Receiver Minimum R Channel for External Source Mode**

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**4. Receiver Minimum R Channel for External Source Mode**

Perform this test to verify proper phase lock for selected test frequencies in the external source mode, at the specified minimum R input level of  $-25$  dBm.

*Analyzer warmup time: 30 minutes*

**Specifications**

Frequency Range <sup>a</sup>
300 kHz–3 GHz
3 GHz–6 GHz <sup>b</sup>

- a. At  $-25$  dBm R input level.
- b. Only for analyzers with Option 006.

**Required Equipment**

Description	HP/Agilent Part or Model Number
External source	83620A
Attenuator, 10 dB	8491A Option 010
Attenuator, 20 dB	8491A Option 020
Cable, 50 $\Omega$ type-N	11851B
Adapter, APC-3.5 (f) to type-N (f)	1820-1745

**Procedure**

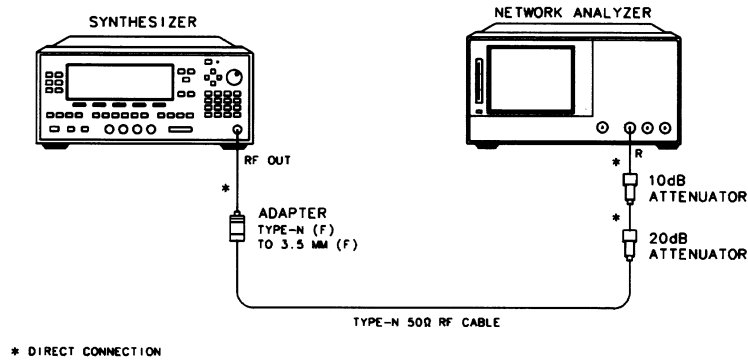
1. Connect the equipment as shown in Figure 2-1.

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Figure 2-1 External Source Mode Frequency Range Test Setup



2. Preset the external source, and set the power level to 4 dBm, and the CW frequency to 10 MHz.
3. On the network analyzer, press **[Preset]** **[Menu]** **CW FREQ** **[10]** **[M/μ]** **[System]** **INSTRUMENT MODE EXT SOURCE AUTO** to set up the analyzer for an external source input to the receiver R.
4. Press **[Meas]** **R** .
5. Press **[Marker Fctn]** **MKR SEARCH TRACKING ON SEARCH:MAX** to observe the maximum value of the receiver R input signal. The analyzer marker 1 reading should be  $\leq -25$  dbm. If this is not the case, adjust the output power of the external source to achieve this condition.
6. Check to see if the analyzer is phase-locking to the external CW signal.
  - If the analyzer displays any phase lock error-messages, write "UNLOCK" in the performance test record for the corresponding CW signal.
  - If the analyzer does not display any phase lock error-messages, write "LOCK" in the performance test record for the corresponding CW signal.
7. On the external source, set the CW frequency to 20 MHz.
8. On the network analyzer, press **[Menu]** **CW FREQ** **[20]** **[M/μ]** .
9. Repeat steps 7 and 8 for the CW frequencies listed on the performance test record.

**In Case of Difficulty**

1. Check the R sampler assembly by substituting it with the A sampler assembly.
2. Move the flexible RF cable (currently connected to the R sampler assembly) to the A sampler assembly.
3. Use a 10 dB attenuator between the RF OUT and the analyzer receiver input A.
4. Repeat the test. In step 4, press **[Meas]** **A** .

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5. If the test still fails, suspect the A11 phase lock board assembly.

**Performance Test Record**

<b>Agilent Technologies Company</b>		<b>Report Number</b>
<b>Model 8753E Option 011</b>		
<b>Serial Number</b>		
<b>Option(s)</b>		<b>Date</b>
<b>4. Receiver Minimum R Channel Level for External Source Mode</b>		
Note: If your analyzer does not have Option 006, write "N/A" in all entries above 3 GHz.		
CW Frequency (MHz)	Results	
10		
20		
100		
1 000		
2 900		
4 000 <sup>a</sup>		
5 000 <sup>a</sup>		
6 000 <sup>a</sup>		

a. Option 006 only.