

S E R V I C E N O T E

SUPERSEDES: None

**8753ES Option 011 Vector Network Analyzer**

**Serial Numbers:** US00000000/US99999999

**Re-written Performance Test for External Source Mode Frequency Range**

**Situation:**

The procedure and test record for Performance Test No. 4 (External Source Mode Frequency Range) 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 HP 8753E Option 011, part number 08753-90485.

**Solution / Action:**

The procedure and test record have been re-written and are included below. This information should be used for any 8753ES Option 011 network analyzer. Additionally, these changes will be reflected in an updated printing of the 8753ES Option 011 Service Guide, part number 08753-90485. The print date is February 2000.

DATE: February 2000

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:		
<b>INFORMATION ONLY</b>		
AUTHOR:	ENTITY:	ADDITIONAL INFORMATION:
FD	5310	



8753ES Option 011

**4. External Source Mode Frequency Range**

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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**

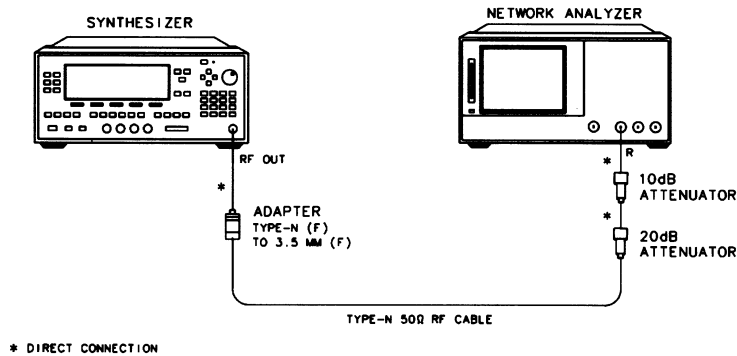
1. Connect the equipment as shown in Figure 2-1.

*Continued*

8753ES Option 011

4. External Source Mode Frequency Range

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]** **[Sweep Setup]** **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 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 set CW signal.
  - If the analyzer does not display any phase lock error-messages, write "LOCK" in the performance test record for the set CW signal.
7. On the external source, set the CW frequency to 20 MHz.
8. On the network analyzer, press **[Sweep Setup]** **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**.
5. If the test still fails, suspect the A11 phase lock board assembly.

*Continued*

8753ES Option 011

**4. External Source Mode Frequency Range**

<b>Agilent Technologies Company</b>		<b>Report Number</b>
<b>Model 8753ES Option 011</b>		
<b>Serial Number</b>		
<b>Option(s)</b>	<b>Date</b>	
<b>4. External Source Mode Frequency Range</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.