

8560A-22

S E R V I C E N O T E

SUPERSEDES: None

HP 8560A Portable Spectrum Analyzer

Serial Numbers: 0000A00000 / 9999A99999

HP 8560A Spectrum Analyzer Installation and Verification Manual, HP P/N 08560-90066

Modified Tracking Generator Feedthrough Performance Test

To Be Performed By: HP-Qualified Personnel or Customer

Situation:

The Tracking Generator Feedthrough performance test in the installation and verification manual listed above measures the Tracking Generator feedthrough response at the frequencies of several known residual responses. Although these residual responses are within specification, they are above the Tracking Generator Feedthrough specification limit.

Solution/Action

Replace the Tracking Generator Feedthrough performance test in the installation and verification manual listed above, and any previous revisions of this manual, with the attached Tracking Generator Feedthrough test. HP 8560A Spectrum Analyzer Installation and Verification Manual, part number 08560-90078, contains the corrected performance test.

Continued

DATE: 21 August 1992

ADMINISTRATIVE INFORMATION

SERVICE NOTE CLASSIFICATION:		
INFORMATION ONLY		
AUTHOR:	ENTITY:	ADDITIONAL INFORMATION:
BDT	5300	

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Specification

Tracking Generator Feedthrough:
 300 kHz to 1 MHz: <-95 dBm
 1 MHz to 2.0 GHz: <-115 dBm
 2.0 GHz to 2.9 GHz: <-110 dBm

Related Adjustment

There is no related adjustment for this performance test.

Description

The tracking generator RF OUT 50Ω is connected to the spectrum analyzer INPUT 50Ω. Tracking is adjusted at 300 MHz for a maximum signal level. The tracking generator output is then terminated in 50Ω and set for +1 dBm output power (maximum leveled output power). The INPUT 50Ω of the spectrum analyzer is terminated as well. The analyzer's displayed average noise level is measured at several frequency ranges.

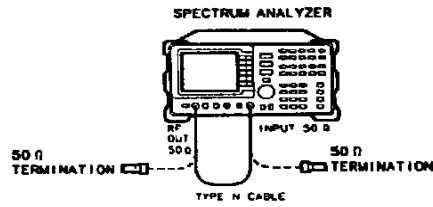


Figure 3-33. Tracking Generator Feedthrough Test Setup

Equipment

50Ω Termination HP 908A

Adapter

Type N (m) to BNC (f) 1250-1476

Cables

Type N, 62 cm (24 in.) HP 11500B/C

BNC, 23 cm (9 in.) HP 10502A

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Procedure

1. Connect the Type N cable between the spectrum analyzer's RF OUT 50Ω and INPUT 50Ω connectors. See Figure 3-33.
2. Press **[PRESET]** on the spectrum analyzer and set the controls as follows:

CENTER FREQ	.....	300 MHz
SPAN	.....	0 Hz
3. On the spectrum analyzer, press **[MKR]** **[AUX CTRL]** and **TRACKING GENERATOR**. Press **SRC PWR ON 5 (-dBm)**.
4. On the HP 8560A Spectrum Analyzer, press **MORE TOP 3, TRACKING PEAK**. Wait for the **PEAKING** message to disappear.
5. Connect the analyzer's CAL OUTPUT to the INPUT 50Ω, then set the controls as follows:

REF LVL	.....	-10 dBm
ATTEN	.....	0 dB
RES BW	.....	300 Hz
VIDEO BW	.....	1 Hz
6. Press **[MKR]** **[CAL]** **REF LVL ADJ**.
7. Use the knob or step keys to set the REF LEVEL ADJ # value to a marker amplitude reading of -10.00 dBm ±0.17 dB.
8. Connect one HP 908A 50Ω termination to the HP 8560A INPUT 50Ω connector and another to the tracking generator's RF OUT 50Ω.
9. Press **[AUX CTRL]** **TRACKING GENERATOR 1 (+dBm)**.
10. Set the spectrum analyzer controls as follows:

CENTER FREQ	.....	300 kHz
FREQ OFFSET	.....	-10 kHz
SPAN	.....	0 Hz
REF LVL	.....	-50 dBm
MARKERS	.....	OFF
RES BW	.....	300 Hz
VIDEO BW	.....	1 Hz

Note A -10 kHz offset is added to avoid known residual responses.



11. Press **[SGL SWP]** and wait for the sweep to finish. Press **[MKR]**, then record the MKR amplitude reading in Table 3-43 for the tracking generator 300 kHz output frequency.
12. Repeat step 11 for the remaining tracking generator output frequencies listed in Table 3-43.

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Table 3-43. Tracking Generator Feedthrough Amplitude

Frequency Range	Tracking Generator Output Frequency	Noise Level Amplitude (dBm)	Measurement Uncertainty (dB)
300 kHz to 1 MHz	300 kHz		+1.74/-1.98
	400 kHz		+1.74/-1.98
	500 kHz		+1.74/-1.98
	600 kHz		+1.74/-1.98
	700 kHz		+1.74/-1.98
	800 kHz		+1.74/-1.98
	900 kHz		+1.74/-1.98
	1 MHz		+1.74/-1.98
1 MHz to 2.0 GHz	1.01 MHz		+1.74/-1.98
	2 MHz		+1.74/-1.98
	5 MHz		+1.74/-1.98
	10 MHz		+1.74/-1.98
	20 MHz		+1.74/-1.98
	50 MHz		+1.74/-1.98
	100 MHz		+1.74/-1.98
	300 MHz		+1.74/-1.98
	500 MHz		+1.74/-1.98
	700 MHz		+1.74/-1.98
	900 MHz		+1.74/-1.98
	1100 MHz		+1.74/-1.98
	1300 MHz		+1.74/-1.98
	1500 MHz		+1.74/-1.98
	1700 MHz		+1.74/-1.98
1900 MHz		+1.74/-1.98	
2.0 GHz to 2.9 GHz	2001 MHz		+1.74/-1.98
	2100 MHz		+1.74/-1.98
	2300 MHz		+1.74/-1.98
	2500 MHz		+1.74/-1.98
	2700 MHz		+1.74/-1.98
	2800 MHz		+1.74/-1.98
	2900 MHz		+1.74/-1.98

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13. In Table 3-43, locate the most positive noise level amplitude for the 300 kHz to 1 MHz frequency range. Record this amplitude here:

TG Feedthrough, 300 kHz to 1 MHz: _____ dBm

14. In Table 3-43, locate the most positive noise level amplitude for the 1 MHz to 2.0 GHz frequency range. Record this amplitude here:

TG Feedthrough, 1 MHz to 2.0 GHz: _____ dBm

15. In Table 3-43, locate the most positive noise level amplitude for the 2.0 GHz to 2.9 GHz frequency range. Record this amplitude here:

TG Feedthrough, 2.0 GHz to 2.9 GHz: _____ dBm