HP 85132C/D Return Cables

GENERAL INFORMATION

To obtain optimum performance from this cable set, observe these simple precautions:

- Flex and straighten the cables as little and as seldom as possible.
- Make connections carefully to avoid misalignment and connector damage, which will result in inaccurate measurements.
- Keep the connectors free of dirt and any particles.
- When you clean the connectors, try clean compressed air first. Do not use abrasives.
- For more information, refer to the Microwave Connector Care manual.

DESCRIPTION

The HP 85132C and HP 85132D differ from one another only in length and insertion loss specifications. Both are test port return cables designed specifically for use with 7 mm calibration and verification kits and test sets with 3.5 mm ports of the HP 8510 network analyzer system. The HP 85132C consists of a single, 81cm long cable with a 7 mm connector on the DUT end and a NMD-3.5 mm connector on the test set end. The HP 85132C is used primarily with Reflection/Transmission test sets. The HP 85132D consists of two identical cables that are each 53cm long and is used primarily with full S-parameter test sets. The cables in the HP 85132D cable set are also available individually as HP part number 85132-60003. Any individual cable can be used with another to make a set.

SPECIFICATIONS

Hewlett-Packard guarantees that the performance of your cables will equal or exceed the following specifications, at frequencies ≤18 GHz:

SWR	≤1.3 (17.7 dB return loss)	
Insertion Loss$_{(\text{in dB})}$	$\leq 0.35\sqrt{f} + 0.3$, HP 85132C	where f is in GHz
	$\leq 0.25\sqrt{f} + 0.2$, HP 85132D	

Recession of center conductor shoulder behind outer conductor mating plane.

NMD-3.5 mm (f) connector	0.005 to 0.056 mm (0.0002 to 0.0022 inch)
7 mm connector with collet removed	0.005 to 0.021 mm (0.0002 to 0.0008 inch)
Protrusion of 7 mm center pin with collet in place	0.05 to 0.25 mm (0.002 to 0.010 inch)

SUPPLEMENTAL PERFORMANCE DATA

The following data gives further information about the typical performance of HP 85132C/D cables.

Magnitude and Phase stability with a 90 degree 4 inch bend radius	≤0.06 dB change ≤0.16 (f) +0.5 degrees	where f is in GHz
Magnitude and Phase stability after three bending straightening cycles, with each bend measuring 90 degrees at a 4 inch bend radius	≤0.03 dB change ≤0.13 (f) +0.3 degrees	

Electrical length of the HP 85132C cable is approximately 1.150m and it is approximately 0.74m for the HP 85132D.

PERFORMANCE TESTS

Using an HP 8510 Network Analyzer, perform the following tests upon your cables as soon as you receive them, and periodically repeat the tests to determine if their performance is still satisfactory or if the cables need to be replaced.

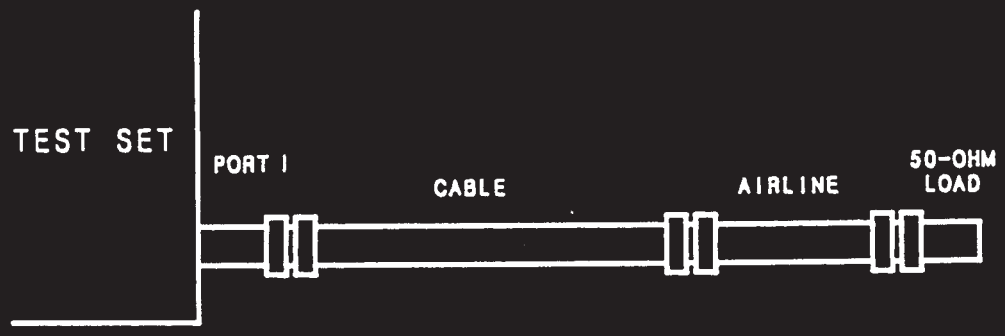

Figure 1. Return Loss Set-up

Return Loss. Figure 1 shows the test setup to measure return loss. One end of the cable under test is attached to port 1 of the test set. The other end of the cable is connected to a 10 cm airline, which is terminated with a 50-ohm fixed load.

Do not connect the cable/airline/load until step 6 below.

1. Press **[INSTR PRESET]**, to set the HP 8510 to a predetermined state.
2. Under STIMULUS, press **[START]** and then entry keys **[4] [5] [M/μ]** to set the start frequency to 45 MHz.
3. Under STIMULUS, press **[STOP]** and then entry keys **[1] [8] [G/n]** to set the stop frequency to 18 GHz.
4. Under STIMULUS, press **[MENU]** and softkey **[STEP]** to set the sweep to step mode.