

Operating and Service Manual

85130E NMD 2.4 mm to 7 mm Adapter Kit



Agilent Technologies

Part Number 85130-90028

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85130-90028

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Hewlett-Packard to Agilent Technologies Transition

This documentation supports a product that previously shipped under the Hewlett-Packard company brand name. The brand name has now been changed to Agilent Technologies. The two products are functionally identical, only our name has changed. The document still includes references to Hewlett-Packard products, some of which have been transitioned to Agilent Technologies.

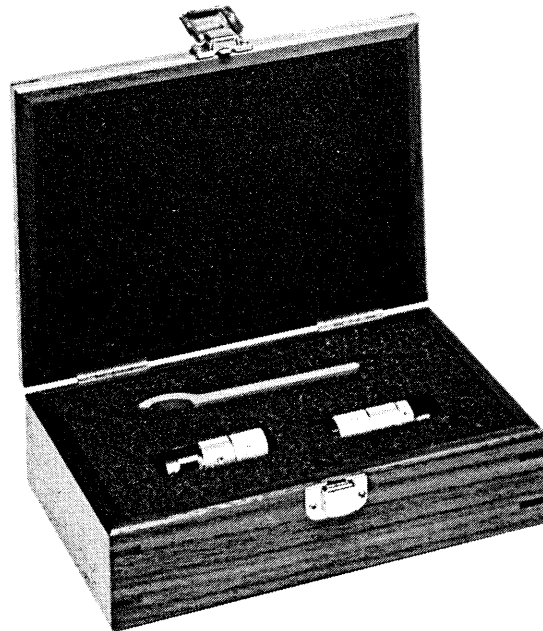
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HP 85130E NMD 2.4 mm to 7 mm ADAPTER KIT



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HP 85130E Adapter Kit

GENERAL INFORMATION

To obtain optimum performance from this adapter kit, observe these simple precautions:

- 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 compressed air first. Do not use abrasives. With a clean foam swab, apply **only** Freon TF as a solvent.
- For more information, refer to the Microwave Connector Care manual.

DESCRIPTION

The HP 85130E adapter kit consists of two NMD-2.4 mm to 7 mm adapters and a spanner wrench. The test set end of the adapters has a NMD-2.4 mm connector while the Device Under Test (DUT) end has a precision 7 mm connector.

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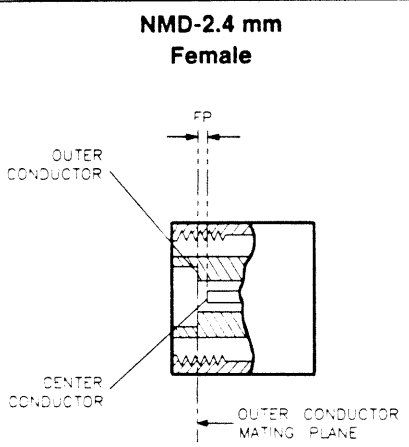
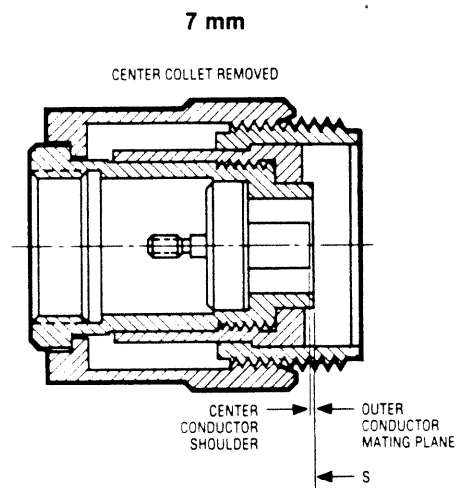
The HP 85130E kit contains the following:

Description	Quantity	Replacement Part Number
Test port adapters NMD-2.4 mm to 7 mm	2	85130-60014
Storage box, foam lined	1	85130-60012
Operating and Service Manual	1	85130-90028
Spanner wrench	1	08513-20014

SPECIFICATIONS

Hewlett-Packard guarantees that your adapters will equal or exceed the following specifications:

Table 1. HP 85130E Specifications

CENTER CONDUCTOR PROTRUSION		
No center conductor shoulder (male pin end of female center pin) protrusion is allowable on any connector, except where noted.		
CENTER CONDUCTOR RECESSION		
<p>NMD-2.4 mm Female</p> 	<p>7 mm</p> <p>CENTER COLLET REMOVED</p> 	
<p>FP =recession of the end of female center pin behind the outer conductor mating plane. S =recession of end of female center pin behind outer conductor mating plane.</p>		
Connector	Allowable Recession	
	mm	in
NMD-2.4 mm female	0.000 to +0.056	0.000 to +0.0022
7 mm with collet	-0.051* to -0.254*	-0.002* to -0.010*
7 mm with collet removed	+0.0051 to +0.02	+0.0002 to +0.0008
* Signifies protrusion		
ELECTRICAL		
Adapter	Frequency Range	Return Loss
NMD-2.4 mm to 7 mm	DC to 8 GHz	≥ 32 dB
	8 GHz to 18 GHz	≥ 26 dB

PERFORMANCE TESTS

Using an HP 8510 Network Analyzer perform the following test on your adapters as soon as you receive them, and periodically repeat the test to determine if their performance meets the electrical specifications stated above or if they need to be replaced. An initial period of one year between performance tests is recommended.

Required Equipment	HP Model/Part Number
HP 8510B Network Analyzer	HP 8510 Option 010
with time domain option and B.04.0X firmware or higher	
HP 8516A S-parameter Test Set	
HP 834XX Synthesized Sweeper	
NOTE: Refer to the HP 8516A Operating and Service Manual for information on instrument compatibility.	
7 mm loads	
(part of the HP 85050B calibration kit)	
load	85050-60006
7 mm 50Ω airline, 10 cm	85051-60007
(part of the HP 85051B verification kit)	

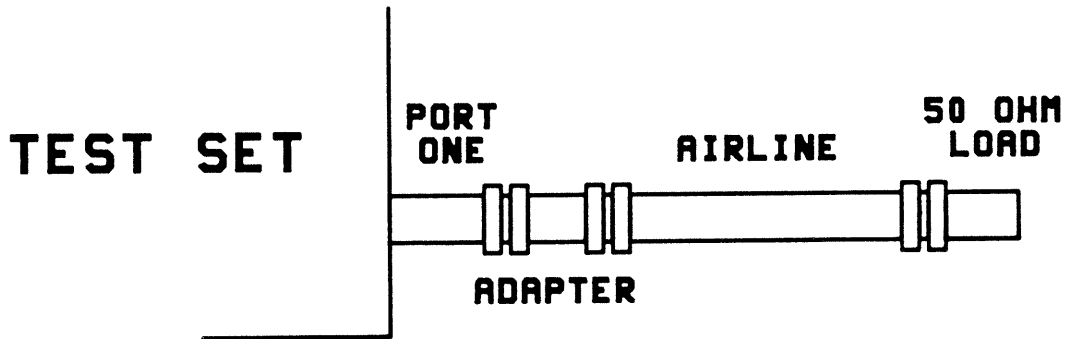


Figure 1. Return Loss Set-up

Return loss is measured by connecting a 50-ohm fixed load termination through a 10 cm airline to the adapter, then attaching the adapter to port one of the test set (see Figure 1).

The effects of an imperfect load may be gated out using the HP 8510 time domain option as follows:

1. Press **[PRESET]**. The HP 8510 will be set to a predetermined state.
2. Under STIMULUS, press **[START] [4] [5] [M/μ]**. This sets the start frequency to 45 MHz.
3. Under STIMULUS, press **[STOP] [1] [8] [G/n]**. This sets the stop frequency to 18 GHz.
4. Perform a 2.4 mm one port sliding load S11 calibration with 32 averaging at port one of your test set, as described in the HP 8510 Operating and Programming manual. Save the calibration. Set up as shown in Figure 1.

Performance Test Record

ELECTRICAL SPECIFICATIONS			Tested by: _____
			Date: _____
Adapter	Frequency Range	Return Loss	Measured
NMD-2.4 mm to 7 mm	DC to 8 GHz	≥ 32 dB	
	8 GHz to 18 GHz	≥ 26 dB	

PROPER USE

Attach the adapters to the test ports and tighten them finger tight. Use the spanner wrench to hold the test set end of the adapter and torque the test set connector with a 20 mm torque wrench set to 96 N-cm (8 in-lb). Attach a non-rotating clamp to each test port.

REPLACEABLE PARTS

The following are the only replaceable parts in the HP 85130E adapter kit.

HP Part Number	Check Digit	Qty	Description	Mfr Code	Mrf Part Number
85050-20001	7	2	6-slot collet	28480	85050-20001

EQUIPMENT AND SUPPLIES

The following equipment and supplies are required for the maintenance and use of, but are not supplied with, your HP 85130E adapter kit.

- 7 mm gage kit 85050-80010
(part of the HP 85050A/B calibration kits)
- 2.4 mm Female Gage 85056-60015
Female Gage Block 85056-60016
(part of the HP 85056A calibration kit)
- 2.4 mm Male Gage 85056-60012
Male Gage Block 85056-60013
(part of the HP 85056A calibration kit)
- Torque wrench, 20 mm, 96 N-cm (8 in-lb) 8710-1764
- Torque wrench, 3/4 inch, 136 N-cm (12 in-lb) 8710-1766
(part of the HP 85050A/B calibration kits)
- Microwave Connector Care Manual 08510-90064
- Connector cleaning kit 92193Z
- Non-rotating Clamp 08515-60003
(two included with the HP 8516A test set)

Customer Order Number

For Agilent Internal Reference Only
Manufacturing Part Number



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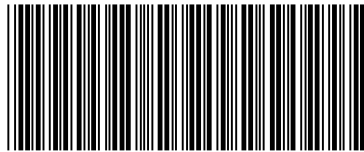
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