

PRECISION CALIBRATION KITS

COAXIAL — PRECISION 2.4mm CONNECTORS

VECTOR NETWORK ANALYZERS

Features

- 2.4mm Connector
- 0.04 to 50 GHz
- High Performance
- Broad VNA Coverage



Model 7950A

Description

Maury Microwave's 2.4mm connector calibration kits described in this data sheet are designed for use with a broad range of vector network analyzers (VNAs). With these kits, you can make error-corrected measurements of devices supplied with 2.4mm connectors from 40 MHz to 50 GHz.

These kits are supplied with a full complement of calibration standards; shorts, opens, sliding and fixed loads and can be configured for any combination of VNA or test set/cable connectors being utilized. By selecting the appropriate option number, you can

incorporate the desired adapter set and software medium to be included in the kit. All required calibration standards, adapters (as applicable) and accessories, along with the software medium (cartridge or 3-1/2" disk as applicable) containing the calibration constants and operating instructions, are supplied in an attractive foam lined wood instrument case.

The following table shows the basic calibration kits that are available.

Calibration Kit Model	Network Analyzer	Software Provided	
		Medium	Medium Model Number
7950A(*)	Agilent 8510A/B	Cartridge	7950S13
	Agilent 8510C	3-1/2" Disk	7950S14
	Agilent 8719A/C	3-1/2" Disk	7950S15
	Agilent 8720A/B/C		
	Agilent 8722A		
	Anritsu 360	3-1/2" Disk	7950S18
	Anritsu 37000 Series	3-1/2" Disk	7950S19

(*) Insert desired option number to complete the model number per option charts on pages 2 and 3. Additional accessories are available from Maury to allow you to further complement these kits for your specific measurement needs.



2.4mm Calibration Kits

Option Charts:

Select the appropriate kit model number from the charts below.

Kit Models 7950A(*); Full kit, male and female calibration standards with sliding loads. *Select option from **Table 1** below. Each kit includes the components shown directly below in addition to the software and adapters selected from **Table 1**.

- 1 each model 7946A Short, 2.4mm-female
- 1 each model 7946B Short, 2.4mm-male
- 1 each model 7948A Open, 2.4mm-female
- 1 each model 7948B Open, 2.4mm-male
- 1 each model 7931A1
Fixed termination, 2.4mm-female
- 1 each model 7931B1
Fixed termination, 2.4mm-male
- 1 each model 7935A
Sliding termination, 2.4mm-female
- 1 each model 7935B
Sliding termination, 2.4mm-male
- 1 each model 8799A1 Torque wrench
- 1 each model 8770Z6
5/16 Open end wrench
- 1 each model 8770Z7
7/16 Open end wrench
- 1 each model 7950Z1 Operating instructions
- 1 each model 7950Z2 Instrument case

Adapter Sets: When the applicable option number is specified, one of the following adapter sets is provided, or the adapters may be ordered individually. The adapters within each model series are phase matched so they can be readily interchanged.

Model 7950Z3:

- 1 each model 7909A1
NMD 2.4mm-female to 2.4mm-female
- 1 each model 7909A2
NMD 2.4mm-female to 2.4mm-male
- 1 each model 7921A
2.4mm-female to 2.4mm-female
- 1 each model 7921B
2.4mm-male to 2.4mm-male
- 1 each model 7921C
2.4mm-female to 2.4mm-male

Model 7950Z4:

- 1 each model 7921A
2.4mm-female to 2.4mm-female
- 1 each model 7921B
2.4mm-male to 2.4mm-male
- 1 each model 7921C
2.4mm-female to 2.4mm-male

Test Set or Cable Connectors	Software Provided for VNA Model:						Adapters Provided
	Agilent 8510A/B	Agilent 8510C	Agilent 8719/20/22	Anritsu 360	Anritsu 3700 Series	No Software Provided	
—	03	04	05	08	09	—	None
2.4mm	13	14	15	18	19	10	7950Z3
2.92mm	23	24	25	28	29	20	7950Z4

Table 1



Kit Models 7950B(*); fixed termination kits, male and female calibration standards. *Select option from **Table 1**. 7950B kits include the same components as the 7950A kits except that they do not include sliding terminations.

Economy Kits

Kit Model 7950F(*); female standards only, fixed termination. Each model 7950F() kit includes the components shown directly below in addition to the software and adapters selected from **Table 2**.

- 1 each model 7946A Short, 2.4mm-female
- 1 each model 7948A Open, 2.4mm-female
- 1 each model 7931A1
Fixed termination, 2.4mm-female
- 1 each model 7950Z1 Operating instructions
- 1 each model 7950Z6 Instrument case

Kit Model 7950M(*); male standards only, fixed termination. Each model 7950M() kit includes the components shown directly below in addition to the software and adapters selected from **Table 2**.

- 1 each model 7946B Short, 2.4mm-male
- 1 each model 7948B Open, 2.4mm-male
- 1 each model 7931B1
Fixed termination, 2.4mm-male
- 1 each model 7950Z1 Operating instructions
- 1 each model 7950Z6 Instrument case

Adapter Sets: When the applicable option number is specified, one of the following adapter sets is provided, or the adapter model series may be ordered individually. The adapters within each set are phase matched so they can be readily interchanged.

Model 7950Z7:

- 1 each model 7921A
2.4mm-female to 2.4mm-female
- 1 each model 7921B
2.4mm-male to 2.4mm-male
- 1 each model 7921C
2.4mm-female to 2.4mm-male

Model 7950Z8:

- 1 each model 7926A
2.4mm-female to 2.92mm-female
- 1 each model 7926B
2.4mm-female to 2.92mm-male
- 1 each model 7926C
2.4mm-male to 2.92mm-female
- 1 each model 7926D
2.4mm-male to 2.92mm-male

Specifications

Fixed Shorts: Model 7946A, female
Model 7946B, male

Frequency Range DC — 50 GHz
Reflection Coefficient 0.99 minimum
Impedance 50 ohms nominal

Test Set or Cable Connectors	Software Provided for VNA Model:						Adapters Provided
	Agilent 8510A/B	Agilent 8510C	Agilent 8719/20/22	Anritsu 360	Anritsu 3700 Series	No Software Provided	
—	03	04	05	08	09	—	None
2.4mm	13	14	15	18	19	10	7950Z7
2.92mm	23	24	25	28	29	20	7950Z8

Table 2



Open Circuits:

Model 7948A, female

Model 7948B, male

Frequency Range DC — 50 GHz

Reflection Coefficient 0.99 minimum

Reflection Phase ± 2 degrees

Impedance 50 ohms nominal

Fixed Terminations:

Model 7931A1, female

Model 7931B1, male

Frequency Range DC — 50 GHz

VSWR 1.016 maximum, DC — 4 GHz
(42 dB minimum R. L.)

1.15 maximum, 4 — 50 GHz

Impedance 50 ohms nominal

Power Handling 1 watt CW

Sliding Terminations:

Model 7935A, female

Model 7935B, male

Frequency Range 4 — 50 GHz

Airline

Accuracy 42 dB minimum, 4 — 20 GHz
40 dB minimum, 20 — 50 GHz

VSWR

Terminating

Element 1.08 maximum, 4 — 8 GHz
1.04 maximum, 8 — 50 GHz

Impedance 50 ohms nominal

Power Handling 0.5 watts CW, 0.5 kW peak

Travel Greater than 1/2 wavelength at 4 GHz

Test Port Adapters:

Model 7909A1, NMD2.4mm-female to
2.4mm-female

Model 7909A2, NMD2.4mm-female to
2.4mm-male

Frequency Range DC — 50 GHz

VSWR 1.05 maximum, DC — 4 GHz

1.08 maximum, 4 — 20 GHz

1.12 maximum, 20 — 50 GHz

Impedance 50 ohms nominal

In Series Adapters:

Model 7921A, 2.4mm female to 2.4mm female

Model 7921B, 2.4mm male to 2.4mm male

Model 7921C, 2.4mm female to 2.4mm male

Frequency Range DC — 50 GHz

VSWR 1.06 maximum, DC — 26.5 GHz

1.10 maximum, 26.5 — 40 GHz

1.15 maximum, 40 — 50 GHz

Impedance 50 ohms nominal