

2.92mm TRL/LRL CALIBRATION KITS

(Tri-Kit)

- TRL/LRL Calibrations
- SOLT (Short-Open-Load-Thru)
- Gated Air Line
- DC to 40 GHz
- Agilent VNAs



Description

This Maury tri-kit is capable of performing three types of calibrations.

- 1) Using a combination of TRM, TRL, and LRL, a full 2-port calibration can be performed from 0 to 40 GHz. The TRL/LRL air line lengths meet NIST and Agilent's recommendation of 30 degrees phase margin.
- 2) SOLT (short-open-load-thru) 1-port or 2-port calibration can be performed using the provided fixed precision terminations, opens and shorts.
- 3) Short-open-(air line + load) 1-port calibration for gated measurements can be performed using the 15cm air line. This provides a very accurate impedance standard for measurements below the TRL range.

Source match can also be measured using the 15cm air line and provided short circuit.

Recommended Accessories

- A034B Connector gage (push on)
 A034E Connector gage (thread on)
 8799A1 Torque wrench 8 in/lbs

8760A 2.92mm Calibration Kit Contents

Model	Description	Quantity
8774C15	2.92mm female to male air line	1
8774C5	2.92mm female to male air line	1
8774C6	2.92mm female to male air line	1
8774C5.25	2.92mm female to male air line	1
8771F1	2.92mm female fixed short	1
8772F1	2.92mm male fixed short	1
8773A1	2.92mm female open circuit	1
8773B1	2.92mm male open circuit	1
8775A2	2.92mm female fixed termination	1
8775B2	2.92mm male fixed termination	1
—	5/16" double end wrench	1
—	Calibration constants media	1
—	Instrument case	1
—	Operating instructions	1

See page 2 for available adapter options.



Model Number Example:

Kit with adapter option 1 (2.92mm adapters) and VNA option 7 (Agilent PNA)
Agilent 8760A17

VNA option

Adapter option

TRM/TRL/LRL Calibration

The following table shows the frequency ranges, calibration methods, and the standards used to perform a complete 2-port calibration to 40 GHz.

Frequency Range	Type of Calibration	Calibration Standards
DC — 800 MHz	TRM	Fixed Termination
160 MHz — 800 MHz	TRL	15cm air line
800 MHz — 2.5 GHz	TRL	5cm air line
2.5 GHz — 12.5 GHz	LRL	5cm & 6cm air lines
12.5 GHz — 40 GHz	LRL	5cm & 5.25cm air lines

Network Analyzer Options

Option No.	Analyzer
3	Agilent 8510A/B
4	Agilent 8510C
5	Agilent 8719/20/22
7	Agilent PNA Series
9	Anritsu 37000 Series

2.92mm TRL Adapter Options

Options	Quantity	Description	Model
Test Port Adapter Option 1	1	NMD2.92mm female to 2.92mm (K) female	8719A
	1	NMD2.92mm female to 2.92mm (K) male	8719B
	1	2.92mm (K) female to 2.92mm (K) female	8714A2
	1	2.92mm (K) male to 2.92mm (K) male	8714B2
	1	2.92mm (K) female to 2.92mm (K) male	8714C2
Test Port Adapter Option 2	2	2.92mm (K) female to 7mm	8725A
	2	2.92mm (K) male to 7mm	8725B
Test Port Adapter Option 3	1	NMD2.4mm female to 2.92mm (K) female	7909F1
	1	NMD2.4mm female to 2.92mm (K) male	7909F2
	1	2.4mm female to 2.92mm (K) female	7926A
	1	2.4mm male to 2.92mm (K) male	7926B
	1	2.4mm male to 2.92mm (K) female	7926C
	1	2.4mm male to 2.92mm (K) male	7926D



Specifications

Air Lines

	Electrical Length (cm)
8774C15 Air line	Electrical length 15cm
8774C5 Air line	Electrical length 5cm
8774C6 Air line	Electrical length 6cm
8774C5.25 Air line	Electrical length 5.25cm
Frequency	DC — 40 GHz
Impedance	50 ohms (nominal)
Return Loss	48 dB minimum
Accuracy of Electrical Length	0.0025cm

Short Circuits:

8771F1 and 8772F1	
Frequency Range	DC — 40 GHz
Reflection Coefficient	0.99 minimum
Impedance	50 ohms (nominal)

Open Circuits:

8773A1 and 8773B1	
Frequency Range	DC — 40 GHz
Reflection Coefficient	0.99 minimum
Phase Accuracy	1.5 degrees
Impedance	50 ohms (nominal)

Fixed Terminations:

8775A2 and 8775B2	
VSWR	1.016:1, DC — 4.0 GHz
	1.12:1, 4.0 — 40.0 GHz
Impedance	50 ohms (nominal)
Power Handling	0.5 watt CW 0.25 kW peak

Adapters:

8714A2 — 2.92mm female to female	
8714B2 — 2.92mm male to male	
8714C2 — 2.92mm female to male	
VSWR	DC — 18 GHz, 1.05
	18 — 20 GHz, 1.08
	20 — 40 GHz, 1.12

Adapters:

7926A — 2.4mm female to 2.92mm female	
7926B — 2.4mm female to 2.92mm male	
7926C — 2.4mm male to 2.92mm female	
7926D — 2.4mm male to 2.92mm male	
VSWR	DC — 4 GHz, 1.06
	4 — 26.5 GHz, 1.08
	26.5 — 40 GHz, 1.12

Adapters:

8725A — 2.92mm female to 7mm	
8725B — 2.92mm male to 7mm	
VSWR	DC — 4 GHz, 1.05
	4 — 12 GHz, 1.07
	12 — 18 GHz, 1.10

Adapters:

8719A — NMD2.92mm female to 2.92mm female	
8719B — NMD2.92mm female to 2.92mm male	
VSWR	DC — 4 GHz, 1.05
	4 — 20 GHz, 1.08
	20 — 40 GHz, 1.12