7-16 VNA Calibration Kits

2750B Fixed Termination Kits

Features

- *Precision 7-16 Connectors*
- *Rated DC to 7.5 GHz; Usable to 8 GHz*
- *Fixed Load Calibration*
- *Low Torque Coupling*

2750B10

Description

The 2750 series calibration kits operate up to 7.5 GHz for making error-corrected measurements of devices with 7-16 connectors. The 2750B kits consist of the male and female 7-16 fixed load calibration standards needed to calibrate supported vector network analyzers (VNAs), and the VNA software on 3-1/2" data disk, supplied with the operating instructions (manual) in a foam-lined wood instrument case.

Connector Description

The 7-16 connectors found on the components in these kits are rugged, calibration grade connectors that exceed the requirements for IEC169-4 reference grade and BSEN122190 grade 0 specifications. They feature a thicker dielectric bead to eliminate deflection, retracted threads on the female connector to eliminate the need to apply excessive torque during calibration and test, and tighter tolerance control than called for in the IEC and BSEN specifications to reduce uncertainties. For interface specifications on these connectors, please refer to Maury data sheet 5E-066.

Supported VNAs

Maury's 2750B calibration kits are ideal for use in calibrating many popular VNAs (ie., Agilent 8510C, 8719/20/22 and PNA series; Anritsu 37000; and Rohde & Schwarz ZV series).

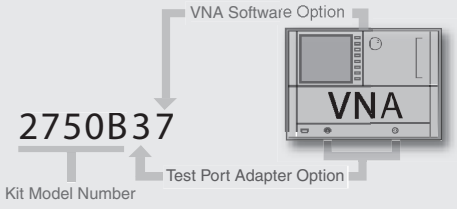
Components Included in 2750B Kits

QUANTITY	DESCRIPTION	MODEL
1	7-16 female fixed offset short	2714A
1	7-16 male fixed offset short	2714B
1	7-16 female open	2716A
1	7-16 male open	2716B
1	7-16 female fixed termination	2710A
1	7-16 male fixed termination	2710B
1	1-1/16 inch torque wrench (20 in. lbs)	2698K1
1	15/16 inch open-end wrench	2750Z3
1	Operating Instructions (manual)	—
1	Instrument case	—

Note: Each kit also includes a set of adapters that is user specified per the Option Finder below. (See page 43 for details.)

Ordering Options

To specify the test port adapter and VNA software options you need, simply add two digits to the end of the kit model number (as shown in the diagram at right). The first digit is the test port adapter option number, and the second is the VNA software option number (as found in the ***Option Finder*** below). The example in the diagram shows the combination of digits needed to order a 2750B kit configured with the adapters and software for use with an Agilent PNA that has type N test ports.



Option Finder

VNA TEST PORT TYPE	TEST PORT ADAPTER OPTIONS (see page 43)	VNA SOFTWARE OPTIONS						
		KITS W/O SOFTWARE OPTION 0	ROHDE & SCHWARZ ZV SERIES OPTION 1	AGILENT ENA SERIES OPTION 2	AGILENT 8510C OPTION 4	AGILENT 8719/20/22 OPTION 5	AGILENT PNA SERIES OPTION 7	ANRITSU 37000 OPTION 9
7-16	0	—	01	02	04	05	07	09
7mm	1	10	11	12	14	15	17	19
Type N	2	20	21	22	24	25	27	29

Key Literature: Maury data sheet 2Z-041.

7-16 VNA Calibration Kits

2750F/M Single-Sex Fixed Termination Kits

2750F30

Features

- *Precision 7-16 Connectors*
- *Rated DC to 7.5 GHz; Usable to 8 GHz*
- *Fixed Load Calibration*
- *Low Torque Coupling*

Description

The 2750F/M calibration kits are an economical alternative to the 2750B fixed termination kit, designed for the user who only needs calibration standards in one sex. The kits consist of the female (2750F) or male (2750M) 7-16 fixed load calibration standards needed to calibrate supported vector network analyzers (VNAs) for making error-corrected measurement of devices with 7-16 connectors. The VNA software is supplied on a 3-1/2" data disk. All of the components including software disk and operating instructions (manual) are provided in a foam-lined wood instrument case.

Connector Description

See the Connector Description for these connectors on page 40.

Supported VNAs

Maury's 2750F/M calibration kits are ideal for use in calibrating many popular VNAs (ie., Agilent 8510C, 8719/20/22, and PNA series; Anritsu 37000; and Rohde & Schwarz ZV series).

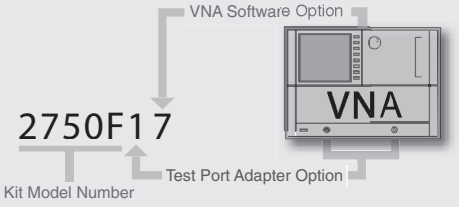
Components Included in 2750F/M Kits

QUANTITY	DESCRIPTION	MODEL
1	7-16 female fixed offset short	2714A*
1	7-16 male fixed offset short	2714B**
1	7-16 female open	2716A*
1	7-16 male open	2716B**
1	7-16 female fixed termination	2710A*
1	7-16 male fixed termination	2710B**
1	Operating Instructions (manual)	—
1	Instrument case	—

Note: Each kit also includes a set of adapters that is user specified per the Option Finder below. (See page 43 for details.)

Ordering Options

To specify the test port adapter and VNA software options you need, simply add two digits to the end of the kit model number (as shown in the diagram at right). The first digit is the test port adapter option number, and the second is the VNA software option number (as found in the ***Option Finder*** below). The example in the diagram shows the combination of digits needed to order a 2750F kit configured with the adapters and software for use with an Agilent PNA that has type N female test ports.



Option Finder

VNA TEST PORT TYPE	TEST PORT ADAPTER OPTIONS (see page 43)	VNA SOFTWARE OPTIONS						
		KITS W/O SOFTWARE OPTION 0	ROHDE & SCHWARZ ZV SERIES OPTION 1	AGILENT ENA SERIES OPTION 2	AGILENT 8510C OPTION 4	AGILENT 8719/20/22 OPTION 5	AGILENT PNA SERIES OPTION 7	ANRITSU 37000 OPTION 9
7-16	0	—	01	02	04	05	07	09
Type N Female	1	10	11	12	14	15	17	19
Type N Male	2	20	21	22	24	25	27	29
7mm	3	30	31	32	34	35	37	39
Type N Female	4	40	41	42	44	45	47	49
Type N Male	5	50	51	52	54	55	57	59
7mm	6	60	61	62	64	65	67	69

Key Literature: Maury data sheet 2Z-041.

7-16 TRL/LRL VNA Calibration Kits

2760B Tri-Kits

Features

- *SOLT (Short-Open-Load-Thru)*
- *Rated to 7.5 GHz, Usable to 8 GHz*
- *Gated Air Line*
- *TRL/LRL Calibrations*
- *Low Torque Coupling*

Description

These kits feature both female and male standards, a torque wrench and an open-end wrench for precise, repeatable connections, and adapter sets and VNA software on computer media. The each kit contains the components listed at the right, shipped together in a foam-lined wood instrument case. See page 85 for air line specifications.

Connector Description

The 7-16 connectors found on the components in these kits are rugged, calibration grade connectors that exceed the requirements for IEC169-4 reference grade and BSEN122190 grade 0 specifications. They feature a thicker dielectric bead to eliminate deflection, retracted threads on the female connector to eliminate the need to apply excessive torque during calibration and test, and tighter tolerance control than called for in the IEC and BSEN specifications to reduce uncertainties. For interface specifications on these connectors, please refer to Maury data sheet 5E-066.

Components Included in 2760B Kits

QUANTITY	DESCRIPTION	MODEL
1	7-16 female to male air line (6cm)	2735A6
1	7-16 female to male air line (7.5cm)	2735A7.5
1	7-16 female to male air line (30cm)	2735A30
1	7-16 female fixed offset short	2714A
1	7-16 male fixed offset short	2714B
1	7-16 female open	2716A
1	7-16 male open	2716B
1	7-16 female fixed termination	2710A
1	7-16 male fixed termination	2710B
1	1-1/16-inch torque wrench (12 in. lbs)	2698K1
1	15/15-inch open end wrench	—
1	Operating Instructions (manual)	—
1	Instrument case	—

Note: Each kit also includes a set of adapters that is user specified per the Option Finder below. (See page 43 for details.)

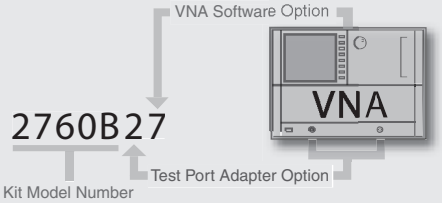
TRM/TRL/LRL Calibration

Maury TRL/LRL calibration kits are tri-kits containing the components needed to perform three types of calibrations (TRM/TRL/LRL, SOLT, and short-open-(air line + load). Source match can also be measured using the 6cm air line and provided short.

The reference air lines listed above are also sold as the model 2735K 7-16 air line kit (see page 85), which includes all three air lines housed in a foam-lined wood instrument case. This kit adds full 2-port TRL/LRL (Through-Reflect-Line, Line-Reference-Line) calibration capability to the 2750B standard kits.

Ordering Options

To specify the test port adapter and VNA software options you need, simply add two digits to the end of the kit model number (as shown in the diagram at right). The first digit is the test port adapter option number, and the second is the VNA software option number (as found in the ***Option Finder*** below). The example in the diagram shows the combination of digits needed to order a 2760B kit configured with the adapters and software for use with an Agilent PNA that has type N test ports.



Option Finder

VNA TEST PORT TYPE	TEST PORT ADAPTER OPTIONS (see page 43)	VNA SOFTWARE OPTIONS					
		KITS W/O SOFTWARE OPTION 0	ROHDE & SCHWARZ ZV SERIES OPTION 1	AGILENT 8510C OPTION 4	AGILENT 8719/20/22 OPTION 5	AGILENT PNA SERIES OPTION 7	ANRITSU 37000 OPTION 9
7-16	0	—	01	04	05	07	09
7mm	1	10	11	14	15	17	19
Type N	2	20	21	24	25	27	29

Key Literature: Maury data sheet 2Z-044, and 2Z-041A.

7-16 VNA Calibration Kit Adapter Options

7-16 In-Series and 3.5mm, 7mm, and Type N Between-Series Sets

Features

- *7mm to 7-16, and Type N to 7-16 Between-Series Adapters*
- *7-16 to 7-16 In-Series Adapters*
- *Phase Matched within Each Series*
- *DC to 7.5 GHz (Usable to 8 GHz)*

Description

The precision 7-16 adapters in these sets feature low VSWR, low insertion loss and are of minimum length. Test port adapters are specifically designed to mate with the special ruggedized connectors used on commercial VNA test sets. All of these adapters may be ordered in separately boxed sets (as described below), as options shipped with Maury VNA calibration kits, or as individual adapters (by model number).

Recommended Accessories for 7-16 Kits

Connector Gage Kits See page 92.

A041A 7-16 Connector gage kit (push-on type)

Torque Wrench See page 94.

2698K1 7-16, 1-1/16 inch (20 in. lbs)

Adapter Specifications

The precision in-series and between-series adapters in these sets have a 50 ohm nominal impedance and a frequency range of DC to 7.5 GHz. Within each series they are phase matched (have the same electrical length), making them interchangeable for measurement of non-insertable devices. VSWR for each model is as follows:

Precision 7-16 In-Series Adapters

Models 2712A/B/C *(for more detail see page 121)*

Maximum VSWR 1.025

Precision 7-16 Adapters

Models 2706A/B/C/D *(for more detail see page 121)*

Maximum VSWR 1.03

Models 2707A/B *(for more detail see page 121)*

Maximum VSWR 1.03

Special Short-Faced Test Port Adapters[1]

Models 2706E/F & Models 2707C *(for more detail see page 121)*

Maximum VSWR 1.03

3.5mm to 7-16 Adapters (sold separately)

Models 2705A/B/C/D *(for more detail see page 121)*

Maximum VSWR 1.04

Adapter Options for 2750B Cal Kits

Adapters Included in 2750Z4 (7mm) Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
1	2	7mm to 7-16 female	2707A
	2	7mm to 7-16 male	2707B

Adapters Included in 2750Z5 (Type N) Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
2	1	Type N female to 7-16 female	2706A
	1	Type N male to 7-16 female	2706B
	1	Type N female to 7-16 male	2706C
	1	Type N male to 7-16 male	2706D

Adapter Options for 2760B Cal Kits

Adapters Included in 7mm Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
1	2	7mm to 7-16 female test port adapters	2707A
	2	7mm to 7-16 male test port adapters	2707C[1]

Adapters Included in Type N Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
2	1	Type N female to 7-16 female	2706A
	1	Type N male to 7-16 female	2706B
	1	Type N fem to 7-16 male test port adapter	2706E[1]
	1	Type N male to 7-16 male test port adapter	2706F[1]

Adapter Options for 2750F and 2750M Single-Sex Cal Kits

Adapters Included in 2750F Options 1 – 6

OPTION	QUANTITY	DESCRIPTION	MODEL
1	2	Type N male to 7-16 male	2706D
	1	Type N male to 7-16 female	2706B
2	2	Type N female to 7-16 male	2706C
	1	Type N female to 7-16 female	2706A
3	2	7mm to 7-16 male	2707B
	1	7mm to 7-16 female	2707A
4	1	Type N male to 7-16 male	2706D
5	1	Type N female to 7-16 male	2706C
6	1	7mm to 7-16 male	2707B

Adapters Included in 2750M Options 1 – 6

OPTION	QUANTITY	DESCRIPTION	MODEL
1	2	Type N male to 7-16 female	2706B
	1	Type N male to 7-16 male	2706D
2	2	Type N female to 7-16 female	2706A
	1	Type N female to 7-16 male	2706C
3	2	7mm to 7-16 female	2707A
	1	7mm to 7-16 male	2707B
4	1	Type N male to 7-16 female	2706B
5	1	Type N female to 7-16 female	2706A
6	1	7mm to 7-16 female	2707A

[1] These special short-faced test port adapters are required when using precision beadless air lines.