

7mm VNA Calibration Kits

2650 Expanded Kits & Fixed Termination Kits

Features

- ▶ Sliding Termination (in Expanded Kits)
- ▶ Broad VNA Coverage
- ▶ DC to 18 GHz

Description

These calibration kits are designed for use with vector network analyzers equipped with 7mm, 3.5mm or 2.92mm test set connectors and cables. With these kits, you can make error-corrected measurements of devices supplied with 7mm connectors from DC to 18 GHz.

Each kit includes the full complement of calibration standards needed to support sliding load and/or fixed load calibrations, and can be configured for any combination of supported VNA or test set/cable connectors. All calibration standards, adapters and optional accessories (if ordered), plus the operating Instructions, are shipped in an attractive, foam-lined, wood instrument case. All 2650 series kits include VNA software constants on a 3.5-inch disk.

Connector Description

7mm connectors are precision air interface hermaphroditic connectors that are rated from DC to 18 GHz. They have an air line size of 0.1197 inner conductor diameter and a 0.2756 outer conductor diameter. There are basically two configurations; 1) GPC7 (commonly referred to as APC7) which incorporates a bead support and, 2) LPC7A which is a beadless connector. They comply with IEEE standard 287 for instrument grade general precision connectors (GPC7). See Maury data sheet 5E-060 for interface dimensions.

Available Kits

VNA MODEL	MAURY CAL KIT (EXPANDED) *	MAURY CAL KIT (FIXED TERMINATION) **
Rohde & Schwarz ZV Series	2650R	2650P11
Agilent ENA Series	—	2650P12
Agilent 8510C	2650J	2650P14
Agilent 8719/20/22	2650M	2650P15
Agilent PNA series	2650J07	2650P17
Anritsu 37000	2650X	2650P19

* Expanded kits are configured with adapters for 3.5mm or 2.92mm (K) test ports.

** Fixed termination kits **DO NOT** include adapters. Adapters must be ordered separately.

Options

These kits may be expanded by adding option numbers, from the list below, to the end of the kit model number:

Option 01: adds air line 2653S30 to the 2650J, M, R and X kits.

Option 17: adds air line 2653S30 to the 2650J07 kit. (To order a 7mm PNA kit with air line, ask for model 2650J17.)

 Key Literature: Maury data sheet 2Z-022H.



2650M01

Components Included in 2650 Kits

QUANTITY	DESCRIPTION	MODEL
1	7mm reference fixed flush short	2615D3
1	7mm open	2616D3
1	7mm sliding termination	2517H†
2	7mm fixed terminations	2610F
2	NMD3.5mm female to 7mm adapters	2633C†
1	3.5mm female to 7mm test port adapter	8022A2†
1	3.5mm male to 7mm test port adapter	8022B2†
1	7mm connector gage (push-on type)	A028†
1	7mm master gage (push-on type)	A028D2†
1	3/4-inch hex torque wrench (12 in. lbs)	2698C2†
1	Collet extractor	2697S5†
1	7mm six-slot collets (spare parts)	2680S2†
1	VNA software disk	—
1	Operating Instructions (manual)	—
1	Instrument case	—

† Included in all 2650 standard kits, and excluded from 2650P fixed termination kits. All adapters shown here (except 2633C) are a phase matched set.

Recommended Accessories

Offset Shorts – 2649 Series (See page 69)

Precision Mismatches – 2611 Series in values up to 2:1 VSWR (See page 87)

Precision Two-Port Standards Set – Model 2654A and 2654B (See page 91)

Precision Test Port Cable and Adapter Kit – 8948 series (See page 134)

Adapters Specifications

Models 2633C Ruggedized Test Port Adapters (See page 108)

Frequency Range DC to 18.0 GHz
 Maximum VSWR 1.08 + 0.003f (GHz)
 Nominal Impedance 50 ohm

Models 8022A2/B2 (See page 111)

Frequency Range DC to 34.0 GHz
 Maximum VSWR:
 DC to 4.0 GHz 1.04
 4.0 to 18.0 GHz 1.08
 Nominal Impedance 50 ohm

7mm TRL VNA Calibration Kits

2660B Tri-Kits

Features

- ▶ TRL Calibrations
- ▶ SOLT (Short-Open-Load-Thru)
- ▶ Gated Air Line
- ▶ DC to 18 GHz

Description

This Maury tri-kit is capable of performing three types of calibrations: 1) TRL/TRM 2-port from DC to 18 GHz; 2) SOLT (short-open-load-thru) 1-port or 2-port; and 3) Short-open-(air line + load) 1-port calibration for gated measurements.

TRL Calibration

Maury TRL calibration kits contain the components needed to perform TRL calibrations. Source match can also be measured using the 15cm air line and provided short.

Test Port Adapter Options

OPTION	DESCRIPTION	QUANTITY	MODEL*
0	No Adapters		—
1	NMD3.5mm female to 7mm	2	2633C
2	3.5mm female to 7mm	1	8022A2
	3.5mm male to 7mm	1	8022B2
3	NMD2.4mm female to 7mm	2	7909C
	2.4mm female to 7mm	1	7922A
4	2.4mm male to 7mm	1	7922B

* Specification for 7909C are on page 102; 7922A/B on page 104; for all others see page 20.



2660B24

Components Included in 2660B Kits

QUANTITY	DESCRIPTION	MODEL
1	7mm air line (3.12cm)	2653S3.12
1	7mm air line (0.6cm)	2653L
1	7mm air line (15cm)	2653S15
1	7mm reference fixed flush short	2615B3
1	7mm open	2616D3
1	7mm fixed termination	2610F
1	VNA software disk	—
1	Operating Instructions (manual)	—
1	Instrument case	—

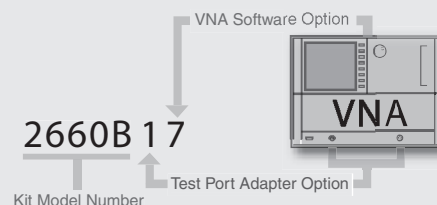
Note: Each kit also includes a set of adapters that is user specified per the Option Finder below. (See **Test Port Adapter Options** for details.)

Recommended Accessories

- A028 Connector gage kit (push-on type). See page 92.
- A028D Connector gage kit (thread-on type). See page 92.
- 8799A1 Torque wrench, 5/16-inch (8 in. lbs). See page 94.
- 2698C2 Torque wrench, 3/4-inch (12 in. lbs). See page 94.

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 2660B kit configured with the adapters and software for use with an Agilent PNA that has NMD3.5mm test ports.



Option Finder

VNA TEST PORT TYPE	TEST PORT ADAPTER OPTIONS (see above)	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
7mm	0	—	01	04	05	07	09
3.5mm or 2.92mm (K) ¹	1	10	11	14	15	17	19
	2	20	21	24	25	27	29
2.4mm or 1.85mm ¹	3	30	31	34	35	37	39
	4	40	41	44	45	47	49

¹ 1.85mm and 2.4mm connectors are fully mateable, as are 2.92mm (K) and 3.5mm connectors. The resulting junction is calibrated out and is not critical.

📄 Key Literature: Maury data sheet 2Z-042.