

1.85mm VNA Calibration Kits

7850A Standard Kits

Features

- ▶ 1.85mm Connectors
- ▶ DC to 67 GHz (Operates DC to 70 GHz)
- ▶ High Performance
- ▶ Broad VNA Coverage
- ▶ Fixed Offset Short Calibration

Description

These precision 1.85mm connector calibration kits are designed for use with a broad range of vector network analyzers (VNA). With these kits, you can make error-corrected measurements of devices equipped with 1.85mm connectors from DC to 67 GHz.

Each kit includes a full complement of calibration standards (multiple offset shorts, opens, and fixed loads) and can be configured for use with any combination of VNA or test set/cable connectors. User-specified VNA software and a set of adapters are included. All kit components come housed in an attractive, foam-lined, wood instrument case.

Connector Description

The precision 1.85mm connectors on the components in this kit are miniature, instrument grade, air-interface connectors that operate mode free up to 67 GHz, and comply with IEEE standard 287 general precision connector, instrument grade GPC1.85. For interface specifications please refer to Maury data sheet 5E-059.

Recommended Accessories

- A048A Digital connector gage kit (thread-on type)
See page 92.



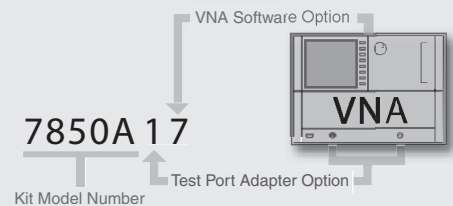
Components Included in 7850A Kits

QUANTITY	DESCRIPTION	MODEL
1	1.85mm female fixed offset short (0.5cm)	7846A
1	1.85mm female fixed offset short (0.606cm)	7846B
1	1.85mm female fixed offset short (0.683cm)	7846C
1	1.85mm female fixed offset short (0.794cm)	7846D
1	1.85mm male fixed offset short (0.5cm)	7847A
1	1.85mm male fixed offset short (0.606cm)	7847B
1	1.85mm male fixed offset short (0.683cm)	7847C
1	1.85mm male fixed offset short (0.794cm)	7847D
1	1.85mm female open	7848A
1	1.85mm male open	7848B
1	1.85mm female low band fixed termination	7831A1
1	1.85mm male low band fixed termination	7831B1
1	Torque wrench (8 in. lbs)	8799A1
1	5/16-inch double end wrench	—
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 page 7 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 7850A kit configured with the adapters and software for use with an Agilent PNA that has 1.85mm or 2.4mm test ports.



Option Finder

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

¹ 1.85mm and 2.4mm connectors are fully mateable, as are 2.92mm (K) and 3.5mm connectors. Resulting junctions are calibrated out and are not critical.

Key Literature: Maury data sheets 2Z-054 and 2Z-056.

1.85mm VNA Calibration Kits

7850B/F/M Fixed Termination Kits

Features

- ▶ 1.85mm Connectors
- ▶ DC to 67 GHz (Operates DC to 70 GHz)
- ▶ High Performance
- ▶ Broad VNA Coverage
- ▶ Fixed Load Calibration

Description

These precision 1.85mm connector calibration kits are designed for use with a broad range of vector network analyzers (VNA). With these kits, you can make error-corrected measurements of devices equipped with 1.85mm connectors from DC to 67 GHz.

Each kit includes a full complement of calibration standards (shorts, opens, and fixed loads) and can be configured for use with any combination of VNA or test set/cable connectors. User-specified VNA software and a set of adapters are included. All kit components come housed in an attractive, foam-lined, wood instrument case.

Connector Description

The precision 1.85mm connectors on the components in this kit are miniature, instrument grade, air-interface connectors that operate mode free up to 67 GHz, and comply with IEEE standard 287 general precision connector, instrument grade GPC1.85. For interface specifications please refer to Maury data sheet 5E-059.

Recommended Accessories

A048A Digital connector gage kit (thread-on type)
See page 92.



7850B

Components Included in 7850B Kits

QUANTITY	DESCRIPTION	MODEL
1	1.85mm female fixed offset short (0.5cm)	7846A*
1	1.85mm male fixed offset short (0.5cm)	7847A**
1	1.85mm female open	7848A*
1	1.85mm male open	7848B**
1	1.85mm female low band fixed termination	7831A1*
1	1.85mm male low band fixed termination	7831B1**
1	1.85mm female high band fixed termination	7832A*
1	1.85mm male high band fixed termination	7832B**
1	Torque wrench (8 in. lbs)	8799A1
1	5/16-inch double end wrench	—
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 page 7 for details.)

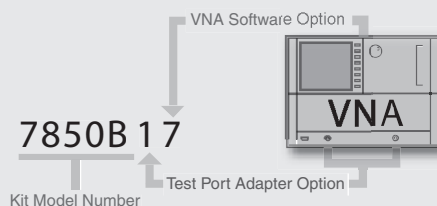
*Included in 7850F single sex kits but not in 7850M single sex kits.
**Included in 7850M single sex kits but not in 7850F single sex kits.

Components Included in 7850F/M Kits

7850F and 7850M are single sex kits which include only the female (7850F) or male (7850M) components listed above.

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 7850B kit configured with the adapters and software for use with an Agilent PNA that has 1.85mm or 2.4mm test ports.



Option Finder

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

¹ 1.85mm and 2.4mm connectors are fully mateable, as are 2.92mm (K) and 3.5mm connectors. Resulting junctions are calibrated out and are not critical.

Key Literature: Maury data sheets 2Z-055 and 2Z-056.

1.85mm TRL/LRL VNA Calibration Kits

7860A Series

Features

- ▶ 1.85mm Connectors
- ▶ TRL/LRL Calibrations
- ▶ DC to 67 GHz (Operates DC to 70 GHz)
- ▶ Agilent VNAs

Description

These precision 1.85mm calibration kits are designed for use with a broad range of vector network analyzers (VNAs). The components in the kits are configured for use in making error-corrected TRM/TRL/LRL measurements of devices supplied with 1.85mm connectors, from DC to 67 GHz.

Each kit includes a full complement of calibration standards (shorts, air lines, and fixed loads) and can be configured for use with any combination of VNA or test set/cable connectors. User-specified VNA software and a set of adapters are included. All kit components come housed in an attractive, foam-lined, wood instrument case.

TRM/TRL/LRL Calibration

The 7860A series kits are configured for three calibration methods (TRM/TRL/LRL). Source match can also be measured using the 3.00cm air line with the short. The table below shows the frequency ranges, calibration methods, and the standards used to perform a complete 2-port calibration to 67 GHz.

FREQUENCY RANGE	CALIBRATION METHOD	CALIBRATION STANDARDS
DC – 800 MHz	TRM	Fixed Termination
800 MHz – 4.0 GHz	TRL	3.00cm air line
4.0 GHz – 13.0 GHz	TRL	0.96cm air line
13.0 GHz – 67.0 GHz	LRL	0.96cm & 1.15cm air lines



7860A

Components Included in 7860A Kits

QUANTITY	DESCRIPTION	MODEL
1	1.85mm female to male air line (0.96cm)	7843S0.96
1	1.85mm female to male air line (1.15cm)	7843S1.15
1	1.85mm female to male air line (3.00cm)	7843S3.00
1	1.85mm female fixed offset short	7846A
1	1.85mm male fixed offset short	7847A
1	1.85mm female fixed termination	7831A1
1	1.85mm male fixed termination	7831B1
1	Torque wrench (8 in. lbs)	8799A1
1	5/16-inch double end wrench	—
1	3/16-inch double end wrench	—
1	VNA software disk	—
1	Operating Instructions (manual)	—
1	Instrument case	—

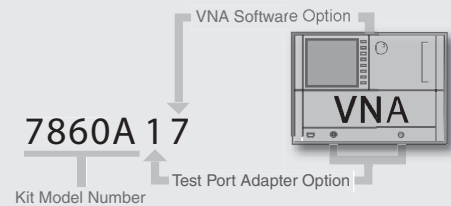
Note: Each kit also includes a set of adapters that is user specified per the Option Finder below. (See page 7 for details.)

Recommended Accessories

A048A Digital connector gage kit (thread-on type) See page 92.

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 7860A kit configured with the adapters and software for use with an Agilent PNA that has 1.85mm or 2.4mm test ports.



Option Finder

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

¹ 1.85mm and 2.4mm connectors are fully mateable, as are 2.92mm (K) and 3.5mm connectors. Resulting junctions are calibrated out and are not critical.

Key Literature: Maury data sheet 2Z-053.

1.85mm VNA Calibration Kit Adapter Options

7850Z1, 7850Z2, & 7850Z3 Sets

Features

- ▶ NMD1.85mm to 1.85mm, 1.85mm In-Series and 1.85mm to 2.92mm Adapters
- ▶ DC to 67 GHz (Operates DC to 70 GHz)
- ▶ High Performance
- ▶ Phase Matched Within Model Series

Description

The NMD1.85mm test port adapters in these sets are specifically designed to mate with the special ruggedized connectors used on commercial VNA test sets. The precision 1.85mm adapters are of minimum length and feature low VSWR with low insertion loss. The sets described on this page are configured to provide users with the ability to tailor their Maury calibration kit for use with specific VNAs. These adapters may be ordered in separately boxed sets, as options shipped with their corresponding VNA calibration kits, or as individual adapters (by model number) to serve as replacement parts or spares.

Adapters Included in 7850Z1 Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
1	1	NMD1.85mm female to 1.85mm female	7809A1
	1	NMD1.85mm female to 1.85mm male	7809A2
	1	1.85mm female to 1.85mm female	7821A
	1	1.85mm male to 1.85mm male	7821B
	1	1.85mm female to 1.85mm male	7821C

Adapters Included in 7850Z2 Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
2	1	1.85mm female to 1.85mm female	7821A
	1	1.85mm male to 1.85mm male	7821B
	1	1.85mm female to 1.85mm male	7821C

Adapters Included in 7850Z3 Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
3	1	1.85mm female to 2.92mm female	7826A
	1	1.85mm female to 2.92mm male	7826B
	1	1.85mm male to 2.92mm female	7826C
	1	1.85mm male to 2.92mm male	7826D

Note: Adapter options for single sex kits (7850F and 7850M) contain only the appropriate female or male adapters.

Adapter Specifications

The Maury precision 1.85mm in-series adapters and the NMD1.85mm test port adapters included in these sets have the following specifications:

Ruggedized Test Port Adapters

Models 7809A1 and 7809A2 (for more detail see page 98)

Frequency Range DC to 67.0 GHz

Maximum VSWR:

DC to 26.5 GHz 1.10

26.5 to 40.0 GHz 1.15

40.0 to 67.0 GHz 1.20

Nominal Impedance 50 ohm

Precision 1.85mm Adapters

Models 7821A/B/C (for more detail see page 99)

Frequency Range DC to 67.0 GHz

Maximum VSWR:

DC to 4.0 GHz 1.06

4.0 to 40.0 GHz 1.10

40.0 to 67.0 GHz 1.15

Nominal Impedance 50 ohm

Models 7826A/B/C/D (for more detail see page 99)

Frequency Range DC to 40.0 GHz

Maximum VSWR:

DC to 4.0 GHz 1.05

4.0 to 20.0 GHz 1.08

20.0 to 40.0 GHz 1.12

Nominal Impedance 50 ohm