

3.5mm VNA Calibration Kits

8050A Standard Kits & 8050Y Expanded Kits

Features

- ▶ Broad VNA Coverage
- ▶ Improved Opens
- ▶ Sliding Load Calibration
- ▶ In-Series Phase Matched Adapters are Available

Description

The 8050A standard and the 8050Y expanded kits are 3.5mm calibration kits designed for use with vector network analyzers (VNAs) equipped with 3.5mm, 2.92mm (K), 2.4mm, or 1.85mm test set connectors and cables. With these kits, you can make error-corrected measurements of devices supplied with either 3.5mm or SMA connectors from DC to 34.0 GHz.

Each kit includes a full complement of calibration standards (shorts, opens, sliding and fixed loads). All required calibration standards, adapters and accessories; the VNA software and operating instructions, come housed in an attractive foam-lined wood instrument case. The expanded kits also include female and male connector gages and standards for checking contact pin location prior to connecting these instruments, and a torque wrench for accurate tightening of connector junctions.

Connector Description

3.5mm connectors are air interface connectors that are fully compliant with IEEE 257 (GPC 3.5) specifications, and are mating compatible with SMA and 2.92mm (K) connectors. They have an air line size of 0.0598 (inner conductor diameter) and 0.1378 (outer conductor diameter). For interface specifications see Maury data sheet 5E-062.



Components Included in 8050A & Y Kits

QUANTITY	DESCRIPTION	MODEL
1	3.5mm female fixed offset short	8046F
1	3.5mm male fixed offset short	8047F
1	3.5mm female open	8048A1
1	3.5mm male open	8048B1
1	3.5mm female fixed termination	8031A4
1	3.5mm male fixed termination	8031B4
1	3.5mm female sliding termination	8037A
1	3.5mm male sliding termination	8037B
1	5/16-inch torque wrench (8 in. lbs)	8799A1*
1	2.92mm/3.5mm female connector gage	A050A1*
1	2.92mm/3.5mm male connector gage	A050A2*
1	2.92mm/3.5mm female master gage	A050A3*
1	2.92mm/3.5mm male master gage	A050A4*
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 19 for details.)

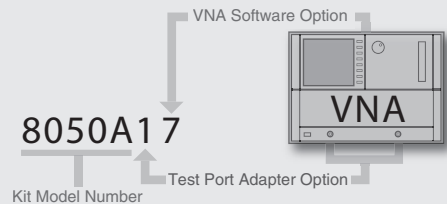
- * Included in 8050Y expanded kits. Not included in 8050A standard kits.
- ** Two (2) double-end wrenches are included in 8050A standard kits.

Recommended Accessories (for 8050A)

- 8799A1 5/16-inch torque wrench (8 in. lbs) See page 94.
- A050A 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 8050A kit configured with the adapters and software for use with an Agilent PNA that has 3.5mm or 2.92mm (K) test ports.



Option Finder

VNA TEST PORT TYPE	TEST PORT ADAPTER OPTIONS (see page 19)	VNA SOFTWARE OPTIONS						
		KITS W/O SOFTWARE OPTION 0	ROHDE & SCHWARZ ZV SERIES OPTION 1	AGILENT ENA OPTION 2	AGILENT 8510C OPTION 4	AGILENT 8719/20/22 OPTION 5	AGILENT PNA SERIES OPTION 7	ANRITSU 37000 OPTION 9
3.5mm	0	—	01	02	04	05	07	09
3.5mm or 2.92mm (K) ¹	1	10	11	12	14	15	17	19
1.85mm or 2.4mm ¹	2	20	21	22	24	25	27	29
Type N	3	30	32	32	34	35	37	39

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-059.

3.5mm VNA Calibration Kits

8050B Fixed Termination Kits

Features

- ▶ 3.5mm Connectors
- ▶ DC to 26.5 GHz
- ▶ Broad VNA Coverage
- ▶ In-Series Phase Matched Adapters are Available
- ▶ Fixed Load Calibration



8050B07

Description

These 3.5mm calibration kits are designed for use with a range of vector network analyzers (VNA). With these kits, you can make error-corrected measurements of devices equipped with 3.5mm connectors from DC to 26.5 GHz.

Each kit includes a full complement of fixed load calibration standards (shorts, opens and fixed loads) and can be configured for a number of VNA or test set/cable connector combinations. All kit components, including the VNA software and operating instructions, are housed in an attractive foam-lined wood instrument case.

Connector Description

3.5mm connectors are air interface connectors that are fully compliant with IEEE 257 (GPC 3.5) specifications, and are mating compatible with SMA and 2.92mm (K) connectors. They have an air line size of 0.0598 (inner conductor diameter) and 0.1378 (outer conductor diameter). For interface specifications see Maury data sheet 5E-062.

Components Included in 8050B Kits

QUANTITY	DESCRIPTION	MODEL
1	3.5mm female fixed offset short	8046F
1	3.5mm male fixed offset short	8047F
1	3.5mm female open	8048A1
1	3.5mm male open	8048B1
1	3.5mm female fixed termination	8031A4
1	3.5mm male fixed termination	8031B4
1	VNA software disk	—
1	Operating Instructions (manual)	—
1	Instrument case	—

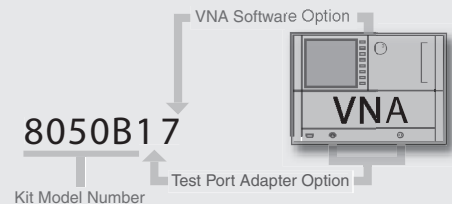
Note: Each kit also includes a set of adapters that is user specified per the Option Finder below. (See page 19 for details.)

Recommended Accessories

- A050A Digital connector gage kit (thread-on type). See page 92.
- 8799A1 Torque wrench, 5/16-inch (8 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 8050B kit configured with the adapters and software for use with an Agilent PNA that has 3.5mm or 2.92mm (K) test ports.



Option Finder

VNA TEST PORT TYPE	TEST PORT ADAPTER OPTIONS (see page 19)	VNA SOFTWARE OPTIONS						
		KITS W/O SOFTWARE OPTION 0	ROHDE & SCHWARZ ZV SERIES OPTION 1	AGILENT ENA OPTION 2	AGILENT 8510C OPTION 4	AGILENT 8719/20/22 OPTION 5	AGILENT PNA SERIES OPTION 7	ANRITSU 37000 OPTION 9
3.5mm	0	—	01	02	04	05	07	09
3.5mm or 2.92mm (K) ¹	1	10	11	12	14	15	17	19
1.85mm or 2.4mm ¹	2	20	21	22	24	25	27	29

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-059.

3.5mm TRL/LRL VNA Calibration Kits

8060A Tri-Kits

Features

- ▶ TRL/LRL Calibrations
- ▶ SOLT (Short-Open-Load-Thru)
- ▶ Gated Air Line
- ▶ DC to 34 GHz



8060A

Description

These 3.5mm Vector Network Analyzer (VNA) calibration kits are designed for use with a range of Agilent VNAs. The components in the kits are configured for use in making error-corrected TRL/LRL measurements of devices supplied with 3.5mm connectors, from DC to 34 GHz.

TRM/TRL/LRL Calibration

Maury TRL/LRL calibration kits are tri-kits that contain 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 15cm air line and provided short. The following table shows the frequency ranges, calibration methods, and the standards used to perform a complete 2-port calibration to 34 GHz.

FREQUENCY RANGE	CALIBRATION METHOD	CALIBRATION STANDARDS
DC – 800 MHz	TRM	Fixed Termination
160 – 800 MHz	TRL	15cm air line
800 MHz – 2.5 GHz	TRL	5cm air line
2.5 GHz – 12.5 GHz	TRL	5cm & 6cm air lines
12.5 GHz – 34 GHz	LRL	5cm & 5.3cm air lines

Components Included in 8060A Kits

QUANTITY	DESCRIPTION	MODEL
1	3.5mm female to male air line (15cm)	8043S15
1	3.5mm female to male air line (5cm)	8043S5
1	3.5mm female to male air line (6cm)	8043S6
1	3.5mm female to male air line (5.3cm)	8043S5.3
1	3.5mm female fixed offset short	8046F
1	3.5mm male fixed offset short	8047F
1	3.5mm female open	8048A1
1	3.5mm male open	8048B1
1	3.5mm female fixed termination	8031A5
1	3.5mm male fixed termination	8031B5
2	5/16-inch double end wrenches	—
1	VNA software disk	—
1	Operating Instructions (manual)	—
1	Instrument case	—

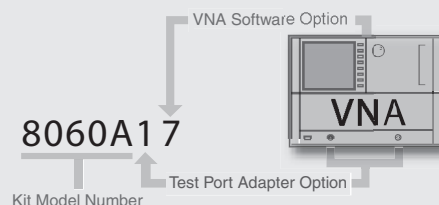
Note: Each kit also includes a set of adapters that is user specified per the Option Finder below. (See page 19 for details.)

Recommended Accessories

- A050A Digital connector gage kit (thread-on type). See page 92.
- 8799A1 Torque wrench, 5/16-inch (8 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 8060A kit configured with the adapters and software for use with an Agilent PNA that has 3.5mm or 2.92mm (K) test ports.



Option Finder

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

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-045.

3.5mm VNA Calibration Kit Adapter Options

8050Z1, & 8050Z2 Sets

Features

- ▶ 3.5mm In-Series Adapters and 2.4mm to 3.5mm Between Series Adapters
- ▶ DC to 34 GHz
- ▶ High Performance
- ▶ Phase Matched Within Model Series

Description

The precision 3.5mm adapters in these sets feature low VSWR and low insertion loss and are of minimum length. 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 8050Z1 Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
1	1	3.5mm female to 3.5mm female	8021A2
	1	3.5mm male to 3.5mm male	8021B2
	1	3.5mm female to 3.5mm male	8021C2

Adapters Included in 8050Z2 Sets

TEST PORT ADAPTER OPTION	QUANTITY	DESCRIPTION	MODEL
1	1	2.4mm female to 3.5mm female	7927A
	1	2.4mm female to 3.5mm male	7927B
2	1	2.4mm male to 3.5mm female	7927C
	1	2.4mm male to 3.5mm male	7927D

Adapter Specifications

The Maury precision 3.5mm in-series adapters and 2.4mm to 3.5mm adapters included in these sets have the following specifications:

Precision 3.5mm In-Series Adapters

Models 8021A2/B2/C2 (for more detail see page 109)

Frequency Range	DC to 34.0 GHz
Maximum VSWR:	
DC to 18.0 GHz	1.05
18.0 to 26.5 GHz	1.08
26.5 to 34.0 GHz	1.12
Nominal Impedance	50 ohm

Precision 2.4mm to 3mm Adapters

Models 7927A/B/C/D (for more detail see page 104)

Frequency Range	DC to 34.0 GHz
Maximum VSWR:	
DC to 18.0 GHz	1.06
18.0 to 26.5 GHz	1.08
26.5 to 34.0 GHz	1.12
Nominal Impedance	50 ohm