

# PRECISION CALIBRATION KIT

## 7/8 EIA Connector Vector Network Analyzers (VNA)

### Description

The Maury series 2050 calibration kits are designed for converting and calibrating Agilent vector network analyzers for measurements utilizing 7/8 EIA connectors. Refer to [Frequency Range and Inner Conductor Connectors](#) section for frequency range considerations.

These kits are provided with all necessary calibration hardware required as listed in the chart below supplied in an attractive foam lined wooden instrument case with operating instructions.

One important feature of these kits is that they are supplied with an improved shielded open circuit for greater measurement accuracy.



Model 2050C25

| Kit Model No. | Used on Agilent ANA | Equipment Provided  |
|---------------|---------------------|---|
| 2050C         | 8542B               | See <a href="#">Components Provided in the Model 2050C Calibration Kit</a> (7 components) |
| 2050D         | 8409B               | See <a href="#">Components Provided in the Model 2050D Calibration Kit</a> (5 components) |

Please refer to [Components Provided in the Model 2050D Calibration Kit](#) section for options and [Accessories and Complimentary Equipment Available \(Not Provided\)](#) section for sliding load and other available accessories.

### Components Provided in the Model 2050C Calibration Kit

- 2 each — Adapter, 7mm to 7/8 EIA, Maury model 2617.
- 2 each — Fixed termination, 7/8 EIA, Maury model 2020A.
- 1 each — Fixed short, 7/8 EIA, Maury model 2029B.

- 1 each — Open circuit, 7/8 EIA, Maury model 2027B.
- 1 each — Offset short, 2.0 - 4.0 GHz, Maury model 2028A.
- 2 each — Bullet assembly (center conductor connector), Maury model 2002A.
- 2 each — Extracting pins (P/N 2002-3).
- 1 each — Instrument case (P/N 2050-2).
- 1 each — Operating instructions.

### Components Provided in the Model 2050D Calibration Kit

- 2 each — Adapter, 7mm to 7/8 EIA, Maury model 2617.
- 1 each — Fixed termination, 7/8 EIA, Maury model 2020A.
- 1 each — Fixed short, 7/8 EIA, Maury model 2029B.
- 1 each — Open circuit, 7/8 EIA, Maury model 2027B.



## Components Provided in the Model 2050D Calibration Kit (Continued)

- 2 each — Bullet assembly (center conductor connector), Maury model 2002A.
- 2 each — Extracting pins (P/N 2002-3).
- 1 each — Instrument case (P/N 2050-2).
- 1 each — Operating instructions.

## Accessories and Complimentary Equipment Available (Not Provided)

### Precision Sliding Termination, Maury Model 2023B:

0.9 to 6.0 GHz air line type supplied with 2002A inner conductor connector in a separate instrument case. (See Maury data sheet 2D-009.)

**Connector Gage, Maury Model A017:** (See Maury data sheet 2Y-007.)

### Precision Air Coupling Kit, Maury Model 2009A:

(See Maury data sheet 2X-050.) Refer to **Frequency Range and Inner Conductor Connectors** section for additional information.

## Frequency Range and Inner Conductor Connectors

The upper frequency range of 7/8 EIA components is generally defined by the type of inner conductor connector (bullet) utilized as follows:

**a. Model 2002A:** Teflon dielectric supported bullet assembly, supplied with 2050 kits. Due to the teflon dielectric support, the upper frequency of use is 4.0 GHz. (Refer to Maury data sheet 2X-051.)

**b. Model 2009A:** Bullet kit — This is available as an optional accessory (see **Accessories and Complimentary Equipment Available (Not Provided)** section). This is a bullet without a dielectric support with a compensating outer conductor ring. Since the line is now in air, the upper frequency of use is 6.0 GHz. (Refer to Maury data sheet 2X-050.)

## Specifications

### Fixed Termination: Model 2020A

|                       |   |
|-----------------------|---|
| Frequency Range ..... | DC to 2.5 GHz                                       |
| VSWR .....            | 1.025 maximum, DC to 1.0 GHz<br>( $<1.015$ typical) |
|                       | 1.05 maximum, 1.0 to 2.5 GHz<br>( $<1.03$ typical)  |
| Impedance .....       | 50 ohms nominal                                     |
| Power Handling .....  | 1 watt cw   |

### Adapter: Model 2617

|                       |   |
|-----------------------|---|
| Frequency Range ..... | DC to 4.0 GHz   |
| VSWR .....            | 1.02 maximum, DC to 1.0 GHz<br>1.05 maximum, 1.0 to 2.5 GHz<br>1.10 maximum, 2.5 to 3.5 GHz<br>1.15 maximum, 3.5 to 4.0 GHz |
| Impedance .....       | 50 ohms nominal   |

### Fixed Short: Model 2029B

|                             |                            |
|-----------------------------|----------------------------|
| Frequency Range .....       | DC to 6.0 GHz <sup>1</sup> |
| Reflection Coefficient..... | 0.98 minimum               |
| Impedance .....             | 50 ohms nominal            |

### Open Circuit: Model 2027B

|                             |   |
|-----------------------------|---|
| Frequency Range .....       | 0.1 to 2.0 GHz or 0.1 to 6.0 GHz <sup>1</sup> |
| Reflection Coefficient..... | 0.98 minimum                                  |
| Impedance .....             | 50 ohms nominal                               |

### Offset Short: Model 2028A

|                              |                      |
|------------------------------|----------------------|
| Frequency Range .....        | 2.0 to 4.0 GHz       |
| Reflection Coefficient.....  | 0.98 minimum         |
| Offset Length .....          | 2.498cm <sup>2</sup> |
| Offset Length Accuracy ..... | $\pm 0.01$ cm        |
| Impedance .....              | 50.0 $\pm 0.5$ ohms  |

<sup>1</sup> Based on frequency range of usage in calibrating the ANA and is limited by the bullet utilized (see **Frequency Range and Inner Conductor Connectors** section).

<sup>2</sup> Offset length is taken from the short plane of the fixed short, Maury model 2029B.