

PRECISION CALIBRATION KITS

WR62 WAVEGUIDE, 12.4 — 18 GHz

For Calibrating

- Agilent 8510C, 8719/20/22 & PNA Series
- Anritsu 37000
- Rohde & Schwarz ZVA/B Series
- 7mm, 3.5mm and 2.92mm
Connector Test Ports/Cables

Description

The P7005E calibration kits are designed to provide accurate calibration of the most common Agilent, Rohde & Schwarz, and Anritsu vector network analyzers (VNAs). These kits are available for use with VNA test sets and test cables utilizing 7mm, 3.5mm, and 2.92mm (K) connectors. The chart on page 2 shows the adapter options available.

Kit Composition

The P7005E calibration kits include all the necessary devices for accurately calibrating Agilent, Rohde & Schwarz, and Anritsu VNAs in WR62 waveguide from 12.4 to 18 GHz. A precision sliding load provides an impedance standard with a typical return loss greater than 55 dB. All component flanges have precision indexing holes, greatly improving measurement repeatability (indexing pins are included with each kit).

Specifications

General:

Frequency Range 12.4 to 18 GHz
Waveguide Size WR62 (0.622 x 0.311 I.D.)
Cutoff Frequency 9.486 GHz
Flange MPF62 (with precision
indexing holes) mates with UG-419/U ³

¹ Consists of four (4) each long and short indexing pins and eight (8) each 6-32 screws and nuts.

² Each kit includes calibration constants software. Adapter set and software options for specific VNA makes/models are listed in the table on page 2.



Model P7005E14

Quantity	Description
3	Adapters (see chart on page 2)
1	Sliding termination, high precision, model P314
1	Precision fixed termination
1	Straight section
1	Offset short, 1/8λ
1	Offset short, 3/8λ
1	Fixed (reference plane) short
1	Flange hardware including indexing pins (set) ¹
1	Data medium containing the calibration constants ²
1	Instrument case
1	Operating instructions

Sliding Termination: Model P314

Housing VSWR 1.006 maximum
Element VSWR 1.01 maximum
Element Travel Greater than 1/2 waveguide
wavelength at lowest frequency

³ This flange is described in detail on Maury data sheet 5E-008.



Specifications Continued

Fixed Termination: Model P301A

VSWR 1.02 maximum (<1.01 typical)
Power Rating 1.0 W average, 1.0 kW peak

Offset Shorts:

Frequency Range (GHz) 12.4 to 18.0
Electrical Length See table below
Reflection Coefficient >0.998
Quarterwave 0.277 nominal (0.703 cm)
Offset Length Accuracy ± 0.0006 inches

Model	Offset Length		Wavelength
	Inches	(cm)	
P340A1	0.1385	0.352	1/8
P340A2	0.4155	1.055	3/8

Fixed Short: Model P344A

Reflection Coefficient >0.999

Precision Straight Section: Model P103A5

VSWR 1.015 maximum (<1.010 typical)
Length 5.000 inches

Adapters:

Three waveguide to coaxial adapters are included with each kit. The standard adapter set options and adapter specifications are listed below. Other adapter options are available on special order.

Adapter Sets and VNA Software Options

Insert the appropriate single-digit numbers from the chart below to designate the adapter set and VNA options needed.

EXAMPLE: to order a P7005E kit for the Agilent 8510C with adapter set option 1, the correct model number is P7005E14.

Adapter Set Option $\swarrow \nearrow$ VNA Code

Adapter Set Option	Description	SW Code ²	VNA Make/Model
1	2 each WR62 to 7mm right angle launch; 1 each WR62 to 7mm end launch	1	Rohde & Schwarz ZVA/B
2	1 each WR62 to 7mm right angle launch; 2 each WR62 to 7mm end launch	4	Agilent 8510C
3	1 each WR62 to 3.5mm (female) right angle launch	5	Agilent 8719/20/22
	1 each WR62 to 3.5mm (male) right angle launch	7	Agilent PNA Series
	1 each WR62 to NMD3.5mm (female) end launch	9	Anritsu 37000

NOTE: NMD adapters mate with the ruggedized test ports on most popular VNAs.

Adapter Specifications

Model	Description	Maximum VSWR
P209D2	7mm right angle launch to WR62 waveguide	1.05
P229A2	7mm end launch to WR62 waveguide	1.05
P200A2	3.5mm (female) right angle launch to WR62 waveguide	1.05
P200B2	3.5mm (male) right angle launch to WR62 waveguide	1.05
P230K1	NMD3.5mm end launch to WR62 waveguide	1.10