

PRECISION CALIBRATION KITS

WR42 WAVEGUIDE, 18.0 TO 26.5 GHz

For Calibrating

- Agilent 8510A/B/C
- Agilent 8719/20/22
- Agilent PNA Series
- Anritsu 360/37000
- 3.5mm, 2.92mm and 2.4mm Connector Test Ports/Cables



Model K7005E34

Description

The K7005E calibration kits are designed to provide accurate calibration of the above mentioned Agilent and Anritsu Vector Network Analyzers (VNAs). These kits are available for use with VNA test sets and test cables utilizing 3.5mm, 2.92mm (K connector) and 2.4mm. The chart on page 2 shows the adapter options available.

Kit Composition

The K7005E calibration kits include all the necessary devices for accurately calibrating Agilent and Anritsu VNAs in WR42 waveguide from 18.0 to 26.5 GHz. A precision sliding load provides an impedance standard with a typical return loss greater than 50 dB. All component flanges have precision indexing holes, greatly improving measurement repeatability (indexing pins are included with each kit).

Quantity	Description
3	Adapters (see chart on page 2)
1	Sliding termination, high precision, model 314
1	Precision fixed termination
1	Straight section
1	Offset short, $1/8\lambda$
1	Offset short, $3/8\lambda$
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

Specifications

General:

Frequency Range 18.0 to 26.5 GHz
 Waveguide Size WR42 (0.420 x 0.170 I.D.)
 Cutoff Frequency 14.051 GHz
 Flange MPF42 (with precision indexing holes) mates with UG595U³

Sliding Termination: Model K314

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

¹ Consists of four (4) each long and short indexing pins, and eight (8) each 4-40 screws and nuts.

² Calibration constants software is included with each kit. See adapter set and VNA options table on page 2 to select the software corresponding to your network analyzer (VNA code).



Specifications Continued

Fixed Termination: Model K301

VSWR 1.025 maximum (<1.01 typical)
Power Rating 0.5 W average, 0.2 kW peak

Offset Shorts:

Electrical Length See table below
Reflection Coefficient..... >0.998
Quarterwave..... 0.1974 nominal (0.501cm)
Offset Length Accuracy..... ±0.0006 inches

Fixed Short: Model K344A

Reflection Coefficient..... >0.999

Precision Straight Section: Model K103A4

VSWR 1.02 maximum (<1.015 typical)
Length 4.00 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.

Model	Offset Length		Wavelength
	Inches	(cm)	
K340A1	0.0987	0.2507	1/8
K340A2	0.2961	0.7521	3/8

Adapter Set and VNA Options

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

EXAMPLE: to order a K7005E kit for the Agilent PNA with adapter set option 5, the correct model number is K7005E57.

Adapter Set Option \uparrow \uparrow VNA Code

Adapter Set Option	Description	VNA Code
3	1 each 3.5mm (f) RAL; 1 each 3.5mm (m) RAL; 1 each 3.5mm (f) EL (NMD)	3 — Agilent 8510A/B
4	1 each 2.92mm (f) RAL; 1 each 2.92mm (m) RAL; 1 each 2.92mm (f) EL	4 — Agilent 8510C
5	1 each 2.4mm (f) RAL; 1 each 2.4mm (m) RAL; 1 each 2.4mm (f) EL	5 — Agilent 8719/20/22
		7 — Agilent PNA
		8 — Anritsu 360
		9 — Anritsu 37000

NMD mates with the ruggedized test ports on most popular VNAs. 2.92mm is also known as the "K" connector.

Adapter Specifications

Model	Description	Maximum VSWR
K200A2	3.5mm (female) right angle launch to WR42 waveguide	1.05
K200B2	3.5mm (male) right angle launch to WR42 waveguide	1.05
K230K6	3.5mm (female) end launch (NMD) to WR42 waveguide	1.15
K210C1	2.92mm (female) right angle launch to WR42 waveguide	1.10
K211C1	2.92mm (male) right angle launch to WR42 waveguide	1.10
K233A8	2.92mm (female) end launch to WR42 waveguide	1.07
K236A1	2.4mm (female) right angle launch to WR42 waveguide	1.10
K236B1	2.4mm (male) right angle launch to WR42 waveguide	1.10
K237A1	2.4mm (female) end launch to WR42 waveguide	1.10

³ This flange is described in Maury data sheet 5E-009.