

KEYSIGHT TECHNOLOGIES (AGILENT HP)

V11644A

The Keysight V11644A is a high-precision WR-15 waveguide calibration kit designed for vector network analyzers (VNAs) operating in the V-band (50 GHz to 75 GHz). It supports advanced calibration techniques such as TRL (Thru-Reflect-Line) and Offset Short, providing the essential standards—including precision fixed loads, a short, a shim, and a 50 mm straight section—needed to establish a highly accurate measurement reference plane.

SPECIFICATIONS

General

Interfaces	None (Mechanical Waveguide Standards)
Calibration Kit Type	Mechanical

Physical

Power Supply	None (Passive Mechanical Devices)
Operating Temperature	20 °C to 26 °C °C

General Specifications

Waveguide Size	WR-15
Frequency Range	50 GHz to 75 GHz (V-band)
Flange Interface	Precision UG-385/U
Nominal Impedance	Waveguide (characteristic impedance is frequency-dependent)
IEC Waveguide Size Equivalent	R620
UK Waveguide Size Equivalent	WG25
Material & Plating	Gold-plated copper alloy / brass
Calibration Methods Supported	TRL (Thru-Reflect-Line), LRL, Offset Short
Compatible Vector Network Analyzers	Keysight / Agilent PNA and PNA-X Series (with V-band millimeter-wave test set controllers/frequency extenders)

Kit Contents

Precision Waveguide Straight Section	1 included (50 mm nominal length)
Precision Waveguide Straight Length	50 mm
Fixed Short Standard	1 included
Precision Waveguide Shim	1 included (1/4 wavelength nominal offset)
Precision Fixed Terminations	2 included
Alignment Dowel Pins	4 included
Flange Coupling Screws	Included (hex socket head cap screws)
Hex Ball Driver	Included
Calibration Definition Data Media	Included (USB drive / floppy disk depending on vintage)
Protective Storage Case	Included (foam-lined wooden or plastic case)
Fixed Terminations Quantity	2
Short Circuits Quantity	1
Waveguide Straight Sections Quantity	1
Waveguide Shims Quantity	1

Environmental & Calibration Traceability

Calibration Reference Temperature Range	23 °C ± 3 °C
Recommended Calibration Interval	12 months

Electrical Specifications

Termination Maximum VSWR	1.06
Short Circuit Reflection Coefficient	≥ 0.99
Precision Waveguide Straight Return Loss	≥ 46 dB
Fixed Termination Return Loss	≥ 30 dB

Environmental

Storage Temperature Range	-40 °C to +75 °C
Storage Humidity Range	Up to 95% RH (non-condensing)

Mechanical

Waveguide Inner Width	3.759 mm (0.148 in)
Waveguide Inner Height	1.880 mm (0.074 in)
Flange Screw Thread	4-40 UNC
Hex Ball Driver Size	3/32 in

TECHNOLOGY

Waveguide

APPLICATIONS

Vector Network Analyzer (VNA) Calibration

