



## 7mm SOL VNA Calibration Kit Operating from DC to 18 GHz, Including Short Circuit, Open Circuit, and Load

### TECHNICAL DATA SHEET

PE5CK1023

Pasternack's 7mm 18 GHz Vector Network Analyzer (VNA) calibration kit is used to calibrate VNA and associated test setup, thus allowing Vector Error Correction to compensate for systematic errors inherent in the measurement of the device under test (DUT) allowing for precise and accurate characterization of the DUT's performance. The PE5CK1023 SOL cal kit includes a precisely defined coaxial Short Circuit, Open Circuit, and Fixed Load for use during a standard multi-port calibration process. In addition to the calibration standards a fixed torque break-over style torque wrench is included to be used during the mating and de-mating of calibration components. The electrical behavior of the calibration standards is defined in the cal kit definition files for Keysight, Rohde & Schwarz, and Anritsu instruments, and are also provided in this manual. These files may be obtained by contacting Tech Support or downloaded from the PE5CK1023 product page on Pasternack's web site. It is necessary to follow the VNA manufacturer's instructions to import the cal kit definitions into the instrument.

A properly performed n-port SOL calibration characterizes the performance of the VNA hardware and any other cables or components out to the plane of the calibration. These affects are then removed from subsequent measurements. Calibrations performed using high quality VNA test cables effectively extends the VNA test ports to the end of the Test cables and this allows for greater flexibility when characterizing a product under test. High quality VNA test port cables are designed to optimize the stability of their phase and magnitude response – this allows the calibration to remain valid over flexure, time, and temperature, and over many mate/de-mate cycles.

Available in Stock, ship same day!

#### Features

- Cal kit definition files for Keysight, Rohde & Schwarz, and Anritsu VNAs
- Works with all major VNAs
- Protective wooden case for safe storage of components
- Torque wrench included

#### Applications

- Calibration of Vector Network Analyzers
- Research and development
- Aerospace and defense
- Production test environments

#### Configuration

Connector	7mm
Frequency Range	DC to 18 GHz

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [7mm SOL VNA Calibration Kit Operating from DC to 18 GHz, Including Short Circuit, Open Circuit, and Load PE5CK1023](#)



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Electrical Specifications for PE5CK1023 7mm Devices

Item	Part Number	Specifications	Frequency (GHz)
7mm Termination	PE5TR1014	1.005 Max VSWR 1.01 Max VSWR 1.03 Max VSWR 1.06 Max VSWR	DC to 1 1 to 2 2 to 8 8 to 18
7mm Short	PE5SC3018	$\pm 0.3^\circ$ deviation from nominal	DC to 18
7mm Open	PE5SC3033	$\pm 0.3^\circ$ deviation from nominal	DC to 18
Torque Wrench	PE5019-4	14 in-lb Torque Setting	

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PE5SC3018 7mm Short Specifications



ELECTRICAL			UNIT
Frequency Range	DC to 18		GHz
Phase	DC to 18GHz	±0.3°	Max
Offset Impedance	50		Ω
Offset Loss	0		GΩ/s
Electrical Delay	0		nS
Inductance	L0 x 10 <sup>-12</sup> = 0.0		H
	L1 x 10 <sup>-24</sup> = 0.0		H/Hz
	L2 x 10 <sup>-33</sup> = 0.0		H/Hz <sup>2</sup>
	L3 x 10 <sup>-42</sup> = 0.0		H/Hz <sup>3</sup>

MECHANICAL	
Housing	Beryllium Copper/Stainless Steel
Connector	7mm
Screw Thread	11/16-24 UNEF-25
Dimensions	0.87 [22.1]Ø, 1.25 [31.8] Length
Pin Depth	N/A

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PE5SC3033 7mm Open Specifications



ELECTRICAL		UNIT
Frequency Range	DC to 18	GHz
Phase	DC to 18GHz   $\pm 0.3^\circ$	Max
Offset Impedance	50	$\Omega$
Offset Loss	0	G $\Omega$ /s
Electrical Delay	0	pS
Capacitance	$C0 \times 10^{-15} = 92.9$	F
	$C1 \times 10^{-27} = 0.0$	F/Hz
	$C2 \times 10^{-36} = 7.2$	F/Hz <sup>2</sup>
	$L3 \times 10^{-45} = 4.3$	F/Hz <sup>3</sup>

MECHANICAL	
Housing	Beryllium Copper/Stainless Steel
Connector	7mm
Screw Thread	11/16-24 UNEF-2B
Dimensions	0.87 [22.1] $\phi$ , 1.25 [31.8] Length
Pin Depth	0 - 0.0002

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PE5TR1014 7MM Termination Specifications



ELETRICAL			UNIT
Frequency Range	DC to 18		GHz
VSWR at Frequency Range	DC to 1 GHz	1.005	Max
	1 to 2 GHz	1.01	Max
	2 to 8 GHz	1.03	Max
	8 to 18 GHz	1.06	Max
Impedance	50		Ω
Power Rating	1 watt CW		
	1kW Peak		
MECHANICAL			
Housing	Aluminum/Copper		
Connector	7mm		
Screw Thread	11/16-24 UNEF-2B		
Dimensions	0.87 [22.1]∅, 1.42 [36.07] Length		
Pin Depth	0 - 0.0015		

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## General Instructions and Usage Notes

#	Notes
1	Keep provided protective blue caps installed when not in use.
2	Store in climate controlled environment.
3	Always keep connectors clean.
4	Avoid touching the connector interface.
5	Use caution when handling.
6	For female components, do not insert male pin greater than 0.037" [.94 mm]. <b>Failure to comply will result in damage to the female connector.</b>
7	When mating, always ensure that the components to be interconnected remain in a fixed position while rotating <b>only the coupling nut</b> slowly to mate the connectors.
8	When de-mating, always ensure that the interconnected components remain in a fixed position while rotating <b>only the coupling nut</b> slowly to de-mate the connectors.
9	Visually inspect the connector threads prior to use. If needed, clean the center conductor pin and outer conductor with alcohol to remove any debris that may be present. <b>Be sure to apply the alcohol in a circular motion with a lint-free cloth or applicator.</b>
10	Use at room temperature.

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**Compliance Certifications** (see [product page](#) for current document)

#### Plotted and Other Data

Notes:

- Values at +25 °C, sea level

7mm SOL VNA Calibration Kit Operating from DC to 18 GHz, Including Short Circuit, Open Circuit, and Load from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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URL: <https://www.pasternack.com/7mm-short-open-load-sol-vna-calibration-kit-18ghz-pe5ck1023-p.aspx>

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