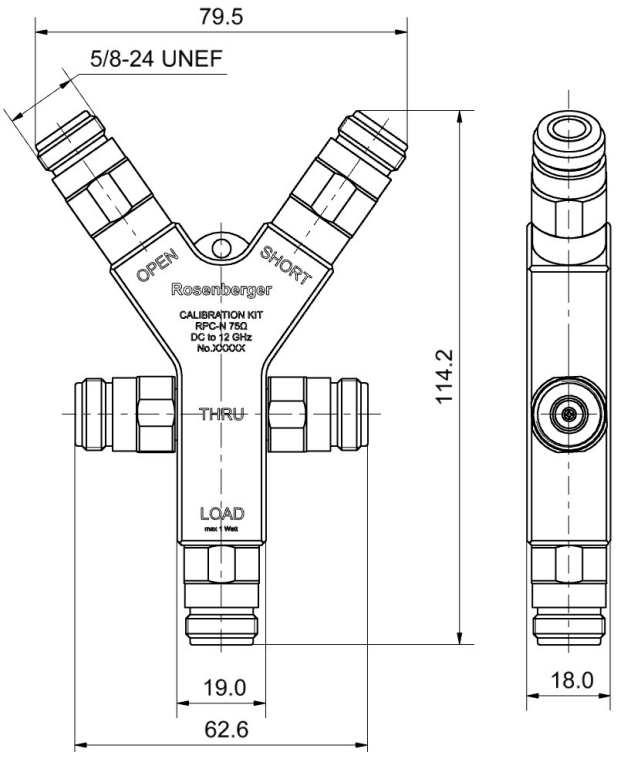
Technical Data Sheet

Rosenberger

RPC-N 75 Ω	Calibration Kit Jack	P5K30R-MSOTS3



All dimensions are in mm; tolerances according to ISO 2768 m-H

Interface

According to IEC 61169-16

Contents and Documentation

This kit is delivered with

- **Standard Definitions Card**
  Printed Standard Definitions that can be used on nearly all Vector Network Analyzers
- **Test Results Documentation**
- **Lanyard**
- **Hard Shell Case**
- **Protection Caps**

Material and plating

Connector parts	**Material**	**Plating**
Center conductor	CuBe	Gold, min. 1.27 µm, over nickel
Outer conductor	Stainless steel	Passivated
Body	Aluminum	black anodized
Dielectric	PS	
Substrate	Al_2O_3	

Rosenberger Hochfrequenztechnik GmbH & Co. KG
P.O.Box 1260 D-84526 Tittmoning Germany
www.rosenberger.de

Tel. : +49 8684 18-0
Email : info@rosenberger.de

Electrical data

Frequency range	DC to 12 GHz

Thru

Return loss	≥ 36 dB, DC to 4 GHz ≥ 27 dB, 4 GHz to 8 GHz ≥ 25 dB, 8 GHz to 12 GHz

Open

Error from nominal phase[1]	≤ 3.0°, DC to 4 GHz ≤ 5.0°, 4 GHz to 8 GHz ≤ 6.0°, 8 GHz to 12 GHz

Short

Error from nominal phase[2]	≤ 2.5°, DC to 4 GHz ≤ 4.0°, 4 GHz to 8 GHz ≤ 5.0°, 8 GHz to 12 GHz

Load

Return loss	≥ 38 dB, DC to 4 GHz ≥ 32 dB, 4 GHz to 8 GHz ≥ 30 dB, 8 GHz to 12 GHz
DC-Resistance	75 Ω ± 0.75 Ω
Power handling (at 25 °C, sea level)	≤ 1.0 W, derate by 0.01 W/K

[1] The nominal phase is defined by the Offset Delay, the Offset Loss and the Fringing Capacitances

[2] The nominal phase is defined by the Offset Delay, the Offset Loss and the Short Inductance

Mechanical data

Mating cycles	≥ 500
Maximum torque	1.70 Nm
Recommended torque	1.10 Nm
Gauge	5.18 mm to 5.26 mm

General standard definitions

For proper operation the vector network analyzer (VNA) needs a model describing the electrical behaviour of this calibration standard. The different models, units, and terms used will depend on the VNA type and they will have to be entered into the VNA. All values are based on typical geometry and plating.

Thru

Offset Z_o / Impedance / Z_o	75 Ω
Offset Delay	153.106 ps
Length (electrical) / Offset Length	45.90 mm
Offset Loss	1.20 GΩ/s
Loss	0.0106 dB/$\sqrt{\text{GHz}}$
Line Loss @ 1GHz	0.0002 dB/mm

Open

Offset Z_o / Impedance / Z_o	75 Ω
Offset Delay	41.095 ps
Length (electrical) / Offset Length	12.32 mm
Offset Loss	1.20 GΩ/s
Loss	0.0057 dB/$\sqrt{\text{GHz}}$
Fringing Capacitances	C_0 = 8.50000 x 10^{-15} F / 8.50000 fF
	C_1 = 9950.00 x 10^{-27} F/Hz / 9.95000 fF /GHz
	C_2 = -2190.00 x 10^{-36} F/Hz^2 / -2.19000 fF /GHz^2
	C_3 = 107.000 x 10^{-45} F/Hz^3 / 0.10700 fF /GHz^3

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