

Technical Data Sheet		Rosenberger
RPC-1.85	Calibration Kit Jack	08K30R-MSOTS3

Technical drawing dimensions: 48.6, 49.5, across flats 9, Ø10, serial ident. no.

Thru can rotate 90°

Calibration card text: Handling precautions, Calibration SN XXXXX, Keep connectors clean, Connect calibration standards only to test and other devices that have been checked for gauge, of the contact.

Device labels: LOAD, Rosenberger, RPC 1.85, DC to 70 GHz, No. XXXXX, SHORT, THRU, OPEN.

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

Interface
According to
Mechanically compatible with

IEC 61169-32
RPC-2.40

Contents and Documentation
This kit is delivered with

- **Standard Definitions Card**
Printed Standard Definitions that can be used on nearly all Vector Network Analyzers
- **Certificate of Testing**
- **Hard Shell Case**
- **Protection Caps**
- **User Manual**

Material and plating
Connector parts
Center conductor
Outer conductor
Body
Dielectric
Substrate

Material
CuBe
Stainless steel
Aluminum
PS
Al₂O₃

Plating
Gold, min. 1.27 µm, over nickel
Passivated
black anodized

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Electrical data

Frequency range DC to 70.0 GHz

Thru

Return loss
 ≥ 28 dB, DC to 4 GHz
 ≥ 21 dB, 4 GHz to 26.5 GHz
 ≥ 20 dB, 26.5 GHz to 50 GHz
 ≥ 17 dB, 50 GHz to 70 GHz

Open

Error from nominal phase¹
 $\leq 2.0^\circ$, DC to 4 GHz
 $\leq 5.0^\circ$, 4 GHz to 26.5 GHz
 $\leq 7.0^\circ$, 26.5 GHz to 50 GHz
 $\leq 10.0^\circ$, 50 GHz to 70 GHz

Short

Error from nominal phase²
 $\leq 2.0^\circ$, DC to 4 GHz
 $\leq 5.0^\circ$, 4 GHz to 26.5 GHz
 $\leq 7.0^\circ$, 26.5 GHz to 50 GHz
 $\leq 10.0^\circ$, 50 GHz to 70 GHz

Load

Return loss
 ≥ 35.0 dB, DC to 4 GHz
 ≥ 25.0 dB, 4 GHz to 26.5 GHz
 ≥ 22.0 dB, 26.5 GHz to 50 GHz
 ≥ 20.0 dB, 50 GHz to 70 GHz

DC Resistance

$50 \Omega \pm 0.5 \Omega$

Power handling (at 25 °C, sea level)

≤ 0.5 W, derate by 0.005 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 1.65 Nm
 Recommended torque 0.90 Nm
 Gauge 0.00 mm to 0.05 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_0 / Impedance / Z_0 50 Ω
 Offset Delay 84.492 ps
 Length (electrical) / Offset Length 25.33 mm
 Offset Loss 4.00 G Ω /s
 Loss 0.0294 dB/ $\sqrt{\text{GHz}}$
 Line Loss @ 1GHz 0.0012 dB/mm

Load

Offset Z_0 / Impedance / Z_0 50 Ω
 Offset Delay 0.0000 ps
 Length (electrical) / Offset Length 0.000 mm
 Offset Loss 0.00 G Ω /s
 Loss 0.0000 dB/ $\sqrt{\text{GHz}}$

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Open Offset Z_o / Impedance / Z_o50 Ω Offset Delay16.678 ps Length (electrical) / Offset Length5.00 mm Offset Loss3.75 GΩ/s Loss0.0109 dB/ √GHz Fringing CapacitancesC₀ = 1.70000 x 10⁻¹⁵ F / 1.70000 fF C₁ = 170.000 x 10⁻²⁷ F/Hz / 0.17000 fF /GHz C₂ = -6.30000 x 10⁻³⁶ F/Hz² / -0.00630 fF /GHz² C₃ = 0.04000 x 10⁻⁴⁵ F/Hz³ / 0.00004 fF /GHz³ Short Offset Z_o / Impedance / Z_o50 Ω Offset Delay16.678 ps Length (electrical) / Offset Length5.00 mm Offset Loss4.17 GΩ/s Loss0.0121 dB/ √GHz Short InductanceL₀ = -21.0000 x 10⁻¹² H / -21.000 pH L₁ = 700.000 x 10⁻²⁴ H/Hz / 0.70000 pH/GHz L₂ = -15.0000 x 10⁻³³ H/Hz² / -0.01500 pH/GHz² L₃ = 0.10000 x 10⁻⁴² H/Hz³ / 0.00010 pH/GHz³							
Environmental data Operating temperature range³+ 20 °C to +26 °C Rated temperature range of use⁴0 °C to +50 °C Storage temperature range- 40 °C to +85 °C RoHScompliant ³ Temperature range over which these specifications are valid. ⁴ This range is underneath and above the operating temperature range, within the calibration kit is fully functional and could be used without damage							
Declaration of documentation Standard delivery for this kit includes Test Results. The documentation issued reports which quantities were tested individually, traceable to national / international standards. Model based standard definitions of the calibration standards are reported in Agilent / Keysight, Rohde & Schwarz and Anritsu compatible VNA format.							
Inspection interval Recommendation12 months							
Packing Weight34 g/pce							
While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary. For the installation of the electrotechnical equipment, particular electrotechnical expertise is required. 							
Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
Marcel Panicke	31.01.17	Lars Ramtke	30.05.23	d00	23-0004	Marion Striegler	23.05.23
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