

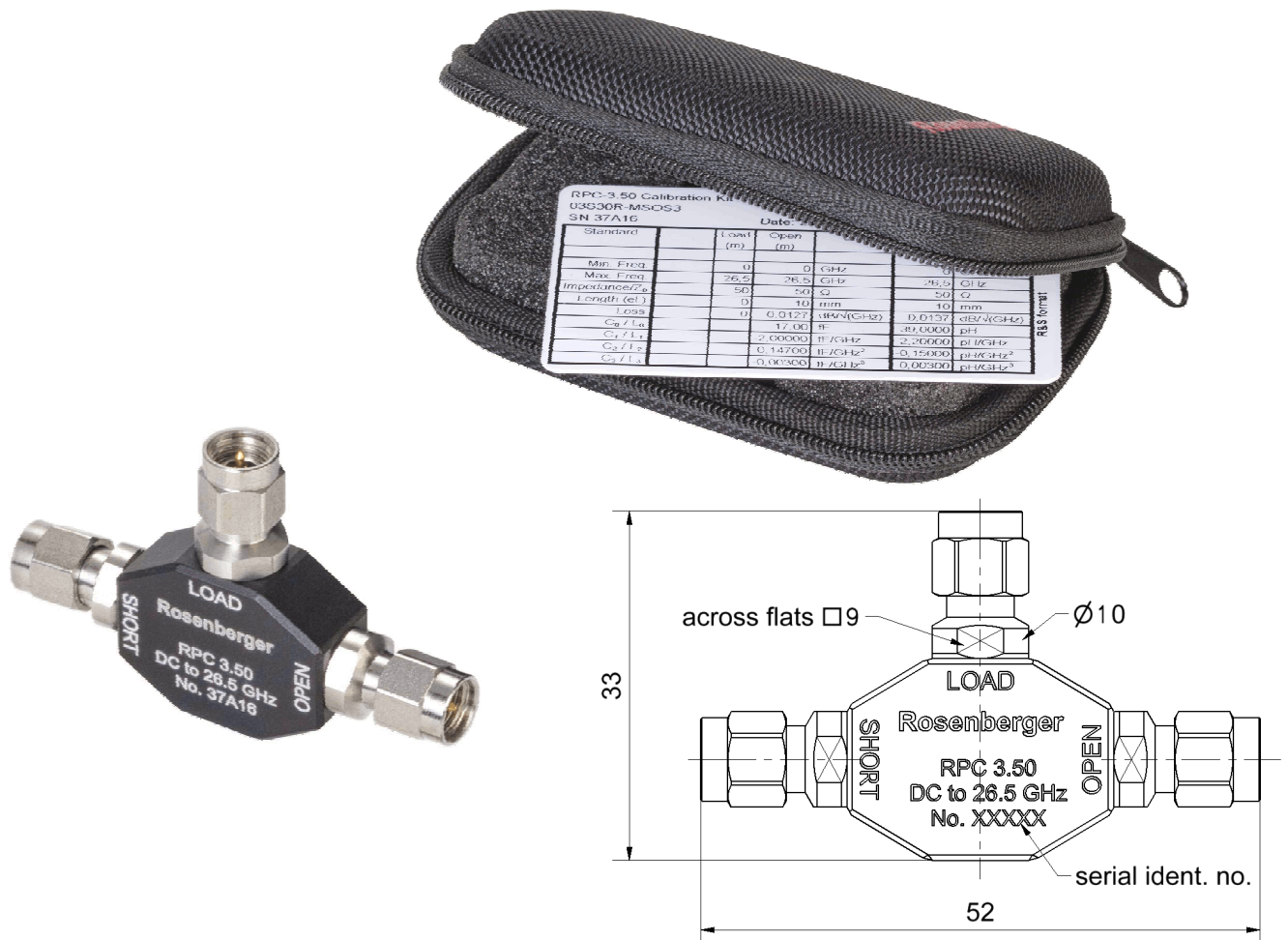
Technical Data Sheet

Rosenberger

RPC-3.50

Calibration Kit
Plug

03S30R-MSOS3



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

Interface

According to
Mechanically compatible with

IEC 61169-23
RPC-2.92 and SMA

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**
- **Hard Shell Case**

Material and plating

Connector parts

Center conductor
Outer conductor
Coupling nut
Body
Dielectric
Substrate

Material

Beryllium copper
Stainless steel
Stainless steel
Aluminum
PS
Al₂O₃

Plating

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

Electrical data

Frequency range DC to 26.5 GHz

Open

Error from nominal phase¹

$\leq 1.0^\circ$, DC to 4 GHz
$\leq 2.0^\circ$, 4 GHz to 8 GHz
$\leq 3.0^\circ$, 8 GHz to 26.5 GHz

Short

Error from nominal phase²

$\leq 1.0^\circ$, DC to 4 GHz
$\leq 2.0^\circ$, 4 GHz to 8 GHz
$\leq 3.0^\circ$, 8 GHz to 26.5 GHz

Load

Return loss

≥ 40.0 dB, DC to 4 GHz
≥ 35.0 dB, 4 GHz to 8 GHz
≥ 30.0 dB, 8 GHz to 26.5 GHz

DC Resistance $50 \Omega \pm 0.5 \Omega$

Power handling ≤ 0.5 W

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 0.90 Nm

Gauge 0.00 mm to 0.08 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.

Open

Offset Z_0 / Impedance / Z_0	50 Ω	
Offset Delay	33.356 ps	
Length (electrical) / Offset Length	10.00 mm	
Offset Loss	2.20 G Ω /s	
Loss	0.0127 dB/ $\sqrt{\text{GHz}}$	
Fringing Capacitances	$C_0 = -17.000 \times 10^{-15}$ F	/ -17.000 fF
	$C_1 = -2000.0 \times 10^{-27}$ F/Hz	/ -2.0000 fF /GHz
	$C_2 = 147.00 \times 10^{-36}$ F/Hz ²	/ 0.1470 fF /GHz ²
	$C_3 = -3.0000 \times 10^{-45}$ F/Hz ³	/ -0.0030 fF /GHz ³

Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger Hochfrequenztechnik GmbH & Co. KG
RF_35/09.14/6.2

Technical Data Sheet				Rosenberger			
RPC-3.50		Calibration Kit Plug		03S30R-MSOS3			
Short Offset Z_o / Impedance / Z_o50 Ω Offset Delay33.357 ps Length (electrical) / Offset Length10.00 mm Offset Loss2.36 GΩ/s Loss0.0127 dB/$\sqrt{\text{GHz}}$ Short Inductance $L_0 = -39.000 \times 10^{-12} \text{ H} \quad / \quad -39.000 \text{ pH}$ $L_1 = 2200.0 \times 10^{-24} \text{ H/Hz} \quad / \quad 2.2000 \text{ pH /GHz}$ $L_2 = -150.00 \times 10^{-33} \text{ H/Hz}^2 \quad / \quad -0.1500 \text{ pH /GHz}^2$ $L_3 = 3.0000 \times 10^{-42} \text{ H/Hz}^3 \quad / \quad 0.0030 \text{ pH /GHz}^3$ Load Offset Z_o / Impedance / Z_o50 Ω Offset Delay0.0000 ps Length (electrical) / Offset Length0.000 mm Offset Loss0.00 GΩ/s Loss0.0000 dB/$\sqrt{\text{GHz}}$							
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 Standard1 pce in bag Weight26.4 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.							
DraftDateApprovedDate				Rev.Engineering change numberNameDate			
Marcel Panicke07.01.16Markus Müller02.05.18				e0018-0787Marion Striegler02.05.18			
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			Page 3 / 3

Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger Hochfrequenztechnik GmbH & Co. KG
RF_35/09.14/6.2

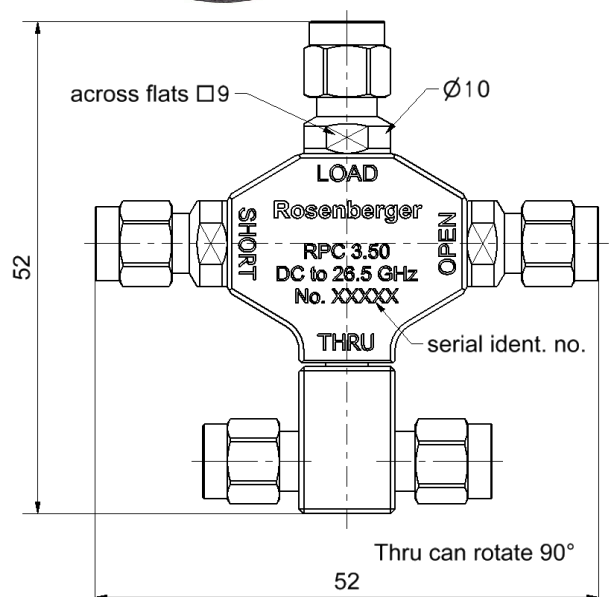
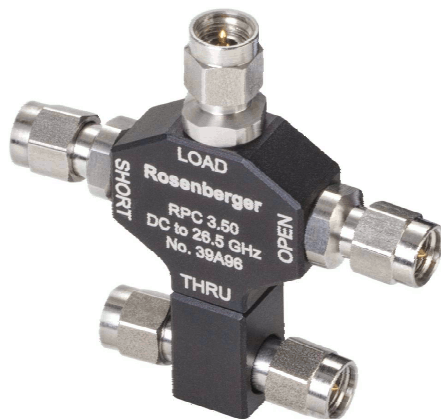
Technical Data Sheet

Rosenberger

RPC-3.50

Calibration Kit
Plug

03S30R-MSOTS3



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

Interface

According to
Mechanically compatible with

IEC 61169-23
RPC-2.92 and SMA

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**
- **Hard Shell Case**

Material and plating

Connector parts

Center conductor
Outer conductor
Coupling nut
Body
Dielectric
Substrate

Material

Beryllium copper
Stainless steel
Stainless steel
Aluminum
PS
Al₂O₃

Plating

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

Electrical data

Frequency range DC to 26.5 GHz

Thru

Return loss
 ≥ 34 dB, DC to 4 GHz
 ≥ 32 dB, 4 GHz to 8 GHz
 ≥ 30 dB, 8 GHz to 26.5 GHz

Open

Error from nominal phase¹
 $\leq 1.0^\circ$, DC to 4 GHz
 $\leq 2.0^\circ$, 4 GHz to 8 GHz
 $\leq 3.0^\circ$, 8 GHz to 26.5 GHz

Short

Error from nominal phase²
 $\leq 1.0^\circ$, DC to 4 GHz
 $\leq 2.0^\circ$, 4 GHz to 8 GHz
 $\leq 3.0^\circ$, 8 GHz to 26.5 GHz

Load

Return loss
 ≥ 40.0 dB, DC to 4 GHz
 ≥ 35.0 dB, 4 GHz to 8 GHz
 ≥ 30.0 dB, 8 GHz to 26.5 GHz
DC Resistance $50 \Omega \pm 0.5 \Omega$
Power handling ≤ 0.5 W

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 0.90 Nm
Gauge 0.00 mm to 0.08 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 84.058 ps
Length (electrical) / Offset Length 25.20 mm
Offset Loss 2.51 G Ω /s
Loss 0.0183 dB/ $\sqrt{\text{GHz}}$
Line Loss @ 1GHz 0.0007 dB/mm

Open

Offset Z_0 / Impedance / Z_0 50 Ω
Offset Delay 33.356 ps
Length (electrical) / Offset Length 10.00 mm
Offset Loss 2.20 G Ω /s
Loss 0.0127 dB/ $\sqrt{\text{GHz}}$
Fringing Capacitances
 $C_0 = -17.000 \times 10^{-15}$ F / -17.000 fF
 $C_1 = -2000.0 \times 10^{-27}$ F/Hz / -2.0000 fF /GHz
 $C_2 = 147.00 \times 10^{-36}$ F/Hz² / 0.1470 fF /GHz²
 $C_3 = -3.0000 \times 10^{-45}$ F/Hz³ / -0.0030 fF /GHz³

Dieses Dokument ist urheberrechtlich geschützt • This document is protected by copyright • Rosenberger Hochfrequenztechnik GmbH & Co. KG
RF_35/09.14/6.2

Technical Data Sheet				Rosenberger			
RPC-3.50		Calibration Kit Plug		03S30R-MSOTS3			
Short Offset Z_o / Impedance / Z_o50 Ω Offset Delay33.356 ps Length (electrical) / Offset Length10.00 mm Offset Loss2.36 GΩ/s Loss0.0127 dB/$\sqrt{\text{GHz}}$ Short Inductance $L_0 = -39.000 \times 10^{-12} \text{ H}$ / -39.000 pH $L_1 = 2200.0 \times 10^{-24} \text{ H/Hz}$ / 2.2000 pH /GHz $L_2 = -150.00 \times 10^{-33} \text{ H/Hz}^2$ / -0.1500 pH /GHz² $L_3 = 3.0000 \times 10^{-42} \text{ H/Hz}^3$ / 0.0030 pH /GHz³							
Load Offset Z_o / Impedance / Z_o50 Ω Offset Delay0.0000 ps Length (electrical) / Offset Length0.000 mm Offset Loss0.00 GΩ/s Loss0.0000 dB/$\sqrt{\text{GHz}}$							
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 Standard1 pce in bag Weight38.3 g/pce							
For more information, please contact: ADMESS ADMESS Vertriebs GmbH Ernst-Kiefer-Straße 9 67292 Kirchheimbolanden /Germany Tel.: +49 (0) 6352 / 78 99 8 - 0 Telefax: +49 (0) 6352 / 78 99 8 - 20 E-Mail: info@admess.de www.admess.de							
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.							
Draft		Date		Approved		Date	
Marcel Panicke		07.01.16		Markus Müller		02.05.18	
Rosenberger Hochfrequenztechnik GmbH & Co. KG				Tel. : +49 8684 18-0		Page	
P.O.Box 1260 D-84526 Tittmoning Germany				Email : info@rosenberger.de		3 / 3	
www.rosenberger.de							