



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

Interface

According to

IEC 60169-11, DIN 47231

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

- Center conductor
- Outer conductor
- Coupling nut
- Body
- Dielectric
- Substrate

Material

- CuBe
- Stainless steel
- Brass
- Brass
- PTFE
- Al₂O₃

Plating

- Gold, min. 1.27 µm, over nickel
- Passivated
- White bronze(e.g. Optalloy®)
- powder-coated

Electrical data

Frequency range DC to 6 GHz

Open

Return loss ≤ 0.15 dB, DC to 6 GHz
Error from nominal phase¹ $\leq 3.0^\circ$, DC to 6 GHz

Short

Return loss ≤ 0.15 dB, DC to 6 GHz
Error from nominal phase² $\leq 2.0^\circ$, DC to 6 GHz

Load

Return loss ≥ 42 dB, DC to 2.5 GHz
 ≥ 38 dB, 2.5 GHz to 6 GHz
DC-Resistance $50 \Omega \pm 0.5 \Omega$
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 15 Nm
Recommended torque 2 Nm
Gauge 5.05 mm to 5.13 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_o / Impedance / Z_o 50 Ω
Offset Delay 90.830 ps
Length (electrical) / Offset Length 27.23 mm
Offset Loss 0.70 G Ω /s
Loss 0.0110 dB/ $\sqrt{\text{GHz}}$
Fringing Capacitances $C_0 = -7.42660 \times 10^{-15}$ F / -7.42660 fF
 $C_1 = 1625.84 \times 10^{-27}$ F/Hz / 1.62584 fF /GHz
 $C_2 = 657.180 \times 10^{-36}$ F/Hz² / 0.65718 fF /GHz²
 $C_3 = -139.680 \times 10^{-45}$ F/Hz³ / -0.13968 fF /GHz³

Short

Offset Z_o / Impedance / Z_o	50 Ω
Offset Delay	90.830 ps
Length (electrical) / Offset Length	27.23 mm
Offset Loss	0.70 G Ω /s
Loss	0.0110 dB/ $\sqrt{\text{GHz}}$
Short Inductance	$L_0 = 0.0000 \times 10^{-12} \text{ H} \quad / \quad 0.0000 \text{ pH}$ $L_1 = 0.0000 \times 10^{-24} \text{ H/Hz} \quad / \quad 0.0000 \text{ pH/GHz}$ $L_2 = 0.0000 \times 10^{-33} \text{ H/Hz}^2 \quad / \quad 0.0000 \text{ pH/GHz}^2$ $L_3 = 0.0000 \times 10^{-42} \text{ H/Hz}^3 \quad / \quad 0.0000 \text{ pH/GHz}^3$

Load

Offset Z_o / Impedance / Z_o	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/ $\sqrt{\text{GHz}}$

Environmental data

Operating temperature range ³	0 °C to +50 °C
Storage temperature range	-55 °C to +90 °C
RoHS	compliant

³ Temperature range over which these specifications are valid.

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

Recommendation	12 months
----------------	-----------

Packing

Standard	1 pce in bag
Weight	241 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.

Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
Marcel Panicke	01.10.13	Markus Müller	06.05.20	e00	19-2083	Marion Striegler	06.05.20

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
--	--	---------------