



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

**Interface**

According to

IEC 61169-4, EN 122190, DIN 47223

**Documents**

Application note

AN001 "Calibration Services"

**Material and plating**

**Connector parts**

- Center conductor plug side
- Center conductor plug side
- Outer conductor
- Coupling nut
- Gasket

**Material**

- Brass
- CuBe
- Brass
- Stainless steel
- NBR

**Plating**

- Gold, min. 1.27 µm, over nickel
- Gold, min. 1.27 µm, over nickel
- Gold, min. 1.27 µm, over nickel
- Passivated

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

RF\_35/09;14/6.2

**Electrical data**

Insertion loss  $\leq 0.09$  dB at 8 GHz

**Mechanical data**

Mating cycles  $\geq 500$   
 Maximum torque 35 Nm  
 Recommended torque 2.26 Nm  
 Airline dimensions at 23 °C:  
 - Diameter outer conductor 16.060 mm  $\pm$  0.010 mm  
 - Diameter inner conductor 6.975 mm  $\pm$  0.005 mm  
 - Length outer conductor 150.00 mm + 0.02 mm  
 - Length inner conductor 149.98 mm - 0.02 mm  
 - Length difference  $\leq 0.06$  mm  
 (outer conductor – inner conductor)

**Calculated data (non warranted)**

Lossless characteristic impedance<sup>1</sup> 50  $\Omega$   $\pm$  0.10  $\Omega$   
 Return loss<sup>2</sup>  $\geq 45$  dB, 0.2 GHz to 4 GHz  
 $\geq 40$  dB, 4 GHz to 8 GHz

1. The lossless characteristic impedance is calculated from the specified diameters of the inner and outer conductor.
2. The return loss is calculated from the characteristic impedance, the skin depth and the connector interface.

**General standard definitions**

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

- Offset  $Z_o$  / Impedance /  $Z_o$  50  $\Omega$   
 - Offset Delay 502.542 ps  
 - Length (electrical) / Offset Length 150.059 mm  
 - Offset Loss 0.60 G $\Omega$ /s  
 - Loss 0.0261 dB/ $\sqrt{\text{GHz}}$

**Environmental data**

Operating temperature range<sup>3</sup> +20 °C to +26 °C  
 Storage temperature range 0 °C to +50 °C  
 RoHS compliant

3. This range is a recommendation. However, the airline can be used in a wider range. Any temperature change from 23 °C results in dimensional changes.

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

RF\_35/09;14/6.2

**Declaration of calibration options**

**Factory Calibration**

Standard delivery for this calibration standard includes a Factory Calibration. The Calibration Certificate issued reports individual mechanical calibration results, traceable to national / international standards. Model based standard definitions are reported in an Agilent/Keysight, Rohde & Schwarz and Anritsu compatible VNA format.

**Accredited Calibration**

Not available.

*For further, more detailed information see application note AN001 on the Rosenberger homepage.*

**Calibration interval**

Recommendation 12 months

**Packing**

Standard 1 pce in box  
 Weight 420.9 g/pce  
 Center conductor loose in an acrylic glass tube

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          |
|--|----------|--------------|----------|------|---------------------------|---|---------------|
| Herbert Babinger   | 14.03.05 | Martin Moder | 09.11.15 | f00  | 14-1492                   | Maik Knoll  | 09.11.15      |
| Rosenberger Hochfrequenztechnik GmbH & Co. KG<br>P.O.Box 1260 D-84526 Tittmoning Germany<br>www.rosenberger.de |          |              |          |      |                           | Tel. : +49 8684 18-0<br>Email : info@rosenberger.de |               |
|  |          |              |          |      |                           |   | Page<br>3 / 3 |