Adaptors, Microwave Cable Assemblies and Compact Calibration Kits

RPC-2.92 Series – for Frequencies up to 43.5 GHz
A lot of countries are allocating their 5G spectrum in the 37 to 43.5 GHz range. For this applications Rosenberger offers now optimized RPC-2.92 connectors, which provide frequencies up to 43.5 GHz. Applications are precise and efficient measurement technology in development, production, and quality assurance departments. Rosenberger understands the challenges and demands of its customers: addressing a wide range of industrial test and measurement applications with high-quality and high-precision products.

Available are in-series and inter-series adaptors, test port adaptors, assemblies with two different types of cables (RTK 125 and RTK 092-70) as well as compact calibration kits for MSOT (4-in-1). These compact calibration kits combine all necessary calibration standards in one unit – small, easy to handle and light weight.

All compact calibration kits come in a hard shell case with general coefficients on a standard definition card.

Different types of adaptors up to 43.5 GHz:
- **In-Series Adaptors:** RPC-2.92 to RPC-2.92
- **Inter-Series Adaptors:** RPC-2.92 to RPC-1.85 and RPC-2.92 to RPC-2.40
- **Test Port Adaptors:** RPC-2.40 to RPC-2.92
# Adaptors

## In-Series Adaptors

<table>
<thead>
<tr>
<th>Rosenberger No.</th>
<th>Version</th>
<th>Type</th>
<th>Return Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>02K121-K0BS3</td>
<td>Straight</td>
<td>RPC-2.92 female – female</td>
<td>≥ 19 dB, DC to 43.5 GHz</td>
</tr>
<tr>
<td>02S121-S0BS3</td>
<td>Straight</td>
<td>RPC-2.92 male – male</td>
<td></td>
</tr>
<tr>
<td>02S121-K0BS3</td>
<td>Straight</td>
<td>RPC-2.92 male – female</td>
<td></td>
</tr>
</tbody>
</table>

## Inter-Series Adaptors – RPC-1.85

<table>
<thead>
<tr>
<th>Rosenberger No.</th>
<th>Version</th>
<th>Type*</th>
<th>Return Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>02K108-K0BS3</td>
<td>Straight</td>
<td>RPC-2.92 female – RPC-1.85 female</td>
<td>≥ 17 dB, DC to 43.5 GHz</td>
</tr>
<tr>
<td>02K108-S0BS3</td>
<td>Straight</td>
<td>RPC-2.92 female – RPC-1.85 male</td>
<td></td>
</tr>
<tr>
<td>02S108-S0BS3</td>
<td>Straight</td>
<td>RPC-2.92 male – RPC-1.85 male</td>
<td></td>
</tr>
<tr>
<td>02S108-K0BS3</td>
<td>Straight</td>
<td>RPC-2.92 male – RPC-1.85 female</td>
<td></td>
</tr>
</tbody>
</table>

* RPC-1.85 Interface intermateable with RPC-2.40 and V connectors according to IEC 60169-32

## Inter-Series Adaptors – RPC-2.40

<table>
<thead>
<tr>
<th>Rosenberger No.</th>
<th>Version</th>
<th>Type*</th>
<th>Return Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>02K109-K0BS3</td>
<td>Straight</td>
<td>RPC-2.92 female – RPC-2.40 female</td>
<td>≥ 18 dB, DC to 43.5 GHz</td>
</tr>
<tr>
<td>02K109-S0BS3</td>
<td>Straight</td>
<td>RPC-2.92 female – RPC-2.40 male</td>
<td></td>
</tr>
<tr>
<td>02S109-S0BS3</td>
<td>Straight</td>
<td>RPC-2.92 male – RPC-2.40 male</td>
<td></td>
</tr>
<tr>
<td>02S109-K0BS3</td>
<td>Straight</td>
<td>RPC-2.92 male – RPC-2.40 female</td>
<td></td>
</tr>
</tbody>
</table>

* RPC-2.40 Interface intermateable with RPC-1.85 and V connectors according to IEC 60169-32

## Test Port Adaptors

<table>
<thead>
<tr>
<th>Rosenberger No.</th>
<th>Version</th>
<th>Type*</th>
<th>Return Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>09KR102-K0B</td>
<td>Straight</td>
<td>RPC-2.40 female, ruggedized – RPC-2.92 female</td>
<td>≥ 26 dB, DC to 43.5 GHz</td>
</tr>
<tr>
<td>09KR102-S0B</td>
<td>Straight</td>
<td>RPC-2.40 female, ruggedized – RPC-2.92 male</td>
<td>≥ 23 dB, 26.5 GHz to 43.5 GHz</td>
</tr>
</tbody>
</table>

* RPC-2.40 Interface intermateable with RPC-1.85 and V connectors according to IEC 60169-32
Microwave Cable Assemblies

Standard microwave cable assemblies from Rosenberger are characterized by excellent electrical and mechanical performances – for frequencies up to 70 GHz. This range of cables includes ultra low-loss cables for antennas or applications with high-power requirement, miniature cables for test systems or applications with high flexibility, indoor and outdoor cables, special shielded cables and extremely phase-stable cables for test & measurement applications. Years of experience and longterm expertise in manufacturing of cable assemblies result in high-quality products made by Rosenberger.

<table>
<thead>
<tr>
<th>Cable Specification</th>
<th>RTK 092-70</th>
<th>RTK 125</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance</td>
<td>50 Ω</td>
<td></td>
</tr>
<tr>
<td>Max. frequency</td>
<td>70 GHz</td>
<td>50 GHz</td>
</tr>
<tr>
<td>Max. power handling (CW) @ 10 GHz</td>
<td>59 W</td>
<td>105 W</td>
</tr>
<tr>
<td>Phase stability @ max. frequency</td>
<td>7°</td>
<td>7°</td>
</tr>
<tr>
<td>Insertion loss @ max. frequency</td>
<td>6.39 dB/m</td>
<td>3.97 dB/m</td>
</tr>
<tr>
<td>Outer dimension</td>
<td>2.33 mm</td>
<td>3.18 mm</td>
</tr>
<tr>
<td>Bending radius minimum</td>
<td>12 mm</td>
<td>16 mm</td>
</tr>
<tr>
<td>Bending radius multiple</td>
<td>32</td>
<td>32</td>
</tr>
</tbody>
</table>

Product Features
- High phase stability
- Crush resistance (up to 1000 N) with armour
- High flex life
- Standard lengths: short delivery times

Rosenberger also offers a wide range of test port cables and sets for VNA test applications. For further information please see the flyer.
Cable Assemblies with RTK 092-70

<table>
<thead>
<tr>
<th>Rosenberger No.*</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Return Loss</th>
<th>Armouring**</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU5-504-xxx</td>
<td>RPC-2.92 male</td>
<td>RPC-2.92 female</td>
<td>≥ 17 dB, DC to 43.5 GHz</td>
<td>No</td>
</tr>
<tr>
<td>LU5-506-xxx</td>
<td>RPC-2.92 male</td>
<td>RPC-2.92 male</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>LU5-508-xxx</td>
<td>RPC-2.92 female</td>
<td>RPC-2.92 female</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>LU5-505-xxx</td>
<td>RPC-2.92 male</td>
<td>RPC-2.92 female</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>LU5-507-xxx</td>
<td>RPC-2.92 male</td>
<td>RPC-2.92 female</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>LU5-509-xxx</td>
<td>RPC-2.92 female</td>
<td>RPC-2.92 female</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* xxx: Please fill in requested length. Standard = 600 mm
** Armouring: T3 Armour (armoured spring with strengthening net, anti-twist layer and PTFE wire jacket over the raw cable)

Cable Assemblies with RTK 125

<table>
<thead>
<tr>
<th>Rosenberger No.*</th>
<th>Connector 1</th>
<th>Connector 2</th>
<th>Return Loss</th>
<th>Armouring**</th>
</tr>
</thead>
<tbody>
<tr>
<td>LU8-504-xxx</td>
<td>RPC-2.92 male</td>
<td>RPC-2.92 female</td>
<td>≥ 17 dB, DC to 43.5 GHz</td>
<td>No</td>
</tr>
<tr>
<td>LU8-506-xxx</td>
<td>RPC-2.92 male</td>
<td>RPC-2.92 male</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>LU8-508-xxx</td>
<td>RPC-2.92 female</td>
<td>RPC-2.92 female</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>LU8-505-xxx</td>
<td>RPC-2.92 male</td>
<td>RPC-2.92 female</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>LU8-507-xxx</td>
<td>RPC-2.92 male</td>
<td>RPC-2.92 male</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>LU8-509-xxx</td>
<td>RPC-2.92 female</td>
<td>RPC-2.92 female</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* xxx: Please fill in requested length. Standard = 600 mm
** Armouring: T3 Armour (armoured spring with strengthening net, anti-twist layer and PTFE wire jacket over the raw cable)

Available on Request:
- Cable assemblies with connectors from RPC-2.92 to RPC-2.40
- Cable assemblies with connectors from RPC-2.92 to RPC-1.85
- Customer-specific cable assembly solutions
Compact Calibration Kits

Rosenberger provides a wide range of compact calibration kits for MSOT (4-in-1) and MSO (3-in-1) calibrations. These compact calibration kits combine all necessary calibration standards in one unit – small, easy to handle and light weight.

All compact calibration kits come in a hard shell case with general coefficients on a standard definition card.

**MSOT:**
The 4-in-1 mechanical calibration kits combine an open, short, load and thru element in a compact unit for a complete MSOT calibration of two or more port vector network analyzers.

**MSO:**
The 3-in-1 mechanical calibration kits combine an open, short and load in a compact unit for a complete MSO calibration of single port vector network analyzers.

The following tables show the complete range of Rosenberger compact calibration kits. For specific details refer to the technical datasheets in our online catalog:
MSOT (4-in-1) Compact Calibration Kits

50 Ω Impedance

<table>
<thead>
<tr>
<th>Rosenberger No.</th>
<th>Gender</th>
<th>Interface</th>
<th>Frequency Range</th>
<th>Open Deviation from nominal phase</th>
<th>Short Deviation from nominal phase</th>
<th>Load Return Loss</th>
<th>Thru Return Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>02K34R-MSOTS3</td>
<td>Female</td>
<td>RPC-2.92</td>
<td>DC to 4 GHz</td>
<td>≤ 1.5°</td>
<td>≤ 4.0°</td>
<td>≥ 40 dB</td>
<td>≥ 32 dB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 GHz to 26.5 GHz</td>
<td>≤ 4.0°</td>
<td>≥ 4.0°</td>
<td>≥ 28 dB</td>
<td>≥ 30 dB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>26.5 GHz to 43.5 GHz</td>
<td>≤ 5.0°</td>
<td>≥ 5.0°</td>
<td>≥ 25 dB</td>
<td>≥ 28 dB</td>
</tr>
</tbody>
</table>

MSO (3-in-1) Compact Calibration Kits

50 Ω Impedance

<table>
<thead>
<tr>
<th>Rosenberger No.</th>
<th>Gender</th>
<th>Interface</th>
<th>Frequency Range</th>
<th>Open Deviation from nominal phase</th>
<th>Short Deviation from nominal phase</th>
<th>Load Return Loss</th>
<th>Thru Return Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>02K34R-MSOS3</td>
<td>Female</td>
<td>RPC-2.92</td>
<td>DC to 4 GHz</td>
<td>≤ 1.5°</td>
<td>≤ 4.0°</td>
<td>≥ 40 dB</td>
<td>≥ 32 dB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4 GHz to 26.5 GHz</td>
<td>≤ 4.0°</td>
<td>≥ 4.0°</td>
<td>≥ 28 dB</td>
<td>≥ 30 dB</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>26.5 GHz to 43.5 GHz</td>
<td>≤ 5.0°</td>
<td>≥ 5.0°</td>
<td>≥ 25 dB</td>
<td>≥ 28 dB</td>
</tr>
</tbody>
</table>
Website

For more information refer to our website:
www.rosenberger.com/rpc