SPINNER
mmWave Waveguide-to-Coax Adapters

Speed Up Your mmWave Setup!

HIGH FREQUENCY PERFORMANCE WORLDWIDE
www.spinner-group.com
The SPINNER Group

For more than 70 years, the SPINNER Group has been setting new standards worldwide in high-frequency technology. Based in Munich with production facilities in Germany, Hungary and China, SPINNER currently has over 1,000 employees. Our international network of subsidiaries and distributors supports customers in over 40 countries.

RF Measurement

These days, up-to-date measurement equipment is essential for all development, production, testing and quality control departments that deal with RF signals on coaxial lines. Particularly for vector network analyzers, high-precision connectors, terminations and adapters are a must.

The same statement applies to calibration kits and mechanical accessories such as gauges for checking mating face dimensions and torque wrenches for tightening coupling nuts, to cite just two examples. SPINNER has established new, extremely high standards of precision that most users would not want to be without.

Precise measurement is especially important when transmitting high power levels. Other major applications include extensive testing of mobile communications systems such as GSM, UMTS and LTE and wireless data transmission, e.g. via WiMAX, WLAN and RFID.

SPINNER supplies coaxial measurement equipment characterized by outstanding electrical and mechanical quality for frequencies from 1 kHz all the way to 110 GHz.

Coaxial & Waveguide Measurement Devices

Coaxial measurement devices made by SPINNER are needed in:

VNA Measurement
- Calibration and verification standards
- Air lines
- Rotary joints
- Articulated lines
- Adapters
- Connector Gauges

PIM Measurement and Test Automation
- EasyDock push-pull adapters
- Low PIM switches
- Low PIM test cables
- Low PIM rotary joints
- Low PIM loads
- Low PIM passive intermodulation standards

Millimeter Wave Measurement
- Ruggedized test port adapters
- mmWave waveguide-to-coax adapters
- 1.35 mm E Connector
- EasyLaunch PCB connectors
- EasySnake flexible dielectric waveguides

2 | spinner-group.com
mmWave Waveguide-to-Coax Adapters: Start Testing Faster!

Get the solution you need! SPINNER extends its millimeter wave waveguide-to-coax adapter portfolio up to a frequency of 120 GHz. The SPINNER mmWave waveguide-to-coaxial adapters for the V, E, W and F bands let you directly connect waveguide-based measurement network topologies to the coaxial ports of VNA or millimeter-wave-range extender modules.

Start testing faster with these new adapters from SPINNER. They save time with ruggedized coaxial interfaces for directly connecting millimeter waveguides to the coaxial ports of millimeter wave VNAs.

Ultralow losses are guaranteed. In lab environments, you need to have the right interfaces handy: for waveguide-to-coaxial and with male or female coaxial connectors as required. These convenient solutions save time and let you focus on your testing work.

Unique versions are the WR08 waveguide to 1.00 mm coaxial adapter covering the F band and the WR10 waveguide to 1.35 mm coaxial adapter covering the E band.

Reliable coaxial connections are crucial for good RF performance. A common frustration in RF laboratories is unintended unlocking of the 1.00 mm coaxial thread after time-consuming calibrations, making it necessary to repeat them. The E Connector - a new 1.35 mm interface for DC to 90 GHz featuring a precise metric thread and an integrated push-pull function eliminates this annoyance.

All these mmWave adapters are ideal for testing automotive and industrial radar sensors (in the 76 to 81 GHz range), satcom applications (from 71 to 76 GHz and 81 to 86 GHz), and the proposed new mmWave bands for 5G (81 to 86 GHz) and 6G (90 to 120 GHz) as well as for sensors for gesture recognition and material characterization.
Less Fuss, More Flexibility!

SPINNER mmWave Waveguide-to-Coax Adapters: Typical Applications

- **WR08**: 1.0 mm
- **WR10**: 1.0 mm, 1.35 mm
- **WR12**: 1.0 mm, 1.35 mm
- **WR15**: 1.0 mm, 1.35 mm

Applications include:
- Automotive radar
- Level measurement
- SatCom
- 5G communication
- 6G communication
- Gesture recognition

Frequency range: 50 - 120 GHz.
Features

• Highly robust mechanical functions
  - Service life of at least 3000 cycles
  - The 1.35 mm connector is locked by a threaded coupling nut that reliably prevents unintended opening.

• The ruggedized coaxial interface includes a large threaded body that is designed to stabilize the advanced coaxial 1.00- or 1.35-mm test port during testing.

• Precision interface with
  - Well-defined reference plane
  - Maximized return losses
  - High connector repeatability (min. 45 dB)
  - Suitability for precise measurement of S parameters

• Standardized interface: compatible with IEC 60154-2
• Ideal design for the frequency bands V, E, W and F
• To ensure precise alignment, there are two extra pin holes according to IEC 60154-2.

Special Design Goals

mmWave waveguide-to-coaxial adapters in various versions
Available Products for WG-to-Coax 1.00 mm and 1.35 mm Ruggedized

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency Range</th>
<th>Return Loss</th>
<th>Style</th>
<th>BN</th>
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<tbody>
<tr>
<td>Precision Adapter Waveguide WR 10 to 1.00 mm female ruggedized</td>
<td>Full W band</td>
<td>≥ 16 dB</td>
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<td>Precision Adapter Waveguide WR 12 to 1.00 mm female ruggedized</td>
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<tr>
<td>Precision Adapter Waveguide WR 10 to 1.35 mm female ruggedized</td>
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<td>≥ 16 dB</td>
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Available Products for WG-to-Coax 1.00 mm and 1.35 mm

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<td>Precision Adapter Waveguide WR 08 to 1.00 mm female</td>
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<td>Panel Connector WR12 to 1.35 female, D-hole mount</td>
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SPINNER designs and builds cutting-edge radio frequency systems, setting performance and longevity standards for others to follow. The company’s track record of innovation dates back to 1946, and many of today’s mainstream products are rooted in SPINNER inventions.

Industry leaders continue to count on SPINNER’s engineering excellence to drive down their costs of service and ownership with premium-quality, off-the-shelf products and custom solutions. Headquartered in Munich, Germany, the global frontrunner in RF components remains the first choice in simple-yet-smart RF solutions.

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