

SPINNER mmWave Waveguide-to-Coaxial Adapters



Speed Up Your mmWave Setup!



HIGH FREQUENCY PERFORMANCE WORLDWIDE
www.spinner-group.com



The SPINNER Group

For more than 75 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 900 employees. Our international network of subsidiaries and distributors supports customers in over 40 countries.



TEST & MEASUREMENT



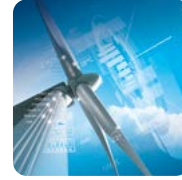
COMMUNICATION



BROADCAST



SATCOM/SPACE



WIND ENERGY



INDUSTRY



SUBSEA/OFFSHORE

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 or torque wrenches for tightening coupling nuts. In all of these cases, SPINNER has established new, extremely high standards of precision which most users would not want to do without.

Precisely measured values are especially important when transmitting high power levels. Other major applications

include extensive testing of mobile communications systems such as LTE, 5G or 6G and wireless data transmission, e.g. via WiMAX, Wi-Fi and RFID.

SPINNER supplies coaxial measurement equipment of outstanding electrical and mechanical quality for use at frequencies up to 165 GHz.

Coaxial and Waveguide Measurement Devices

Coaxial & waveguide measurement devices made by SPINNER are needed for:

VNA / S-Parameter Measurement

- Calibration and verification standards
- Air lines
- Rotary joints
- Articulated lines
- Adapters
- Connector gauges

Millimeter Wave Measurement

- Ruggedized test port adapters
- mmWave waveguide-to-coaxial adapters
- 0.8 mm & 1.0 mm coaxial connector system
- 1.35 mm E Connector
- EasyLaunch PCB connectors
- EasySnake flexible dielectric waveguides
- Connectivity solutions for RF anechoic chambers

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



Connectivity Solutions for RF Anechoic Chambers

- Ruggedized test port adapters
- mmWave waveguide-to-coaxial adapters
- Panel feedthroughs
- Articulated lines
- EasySnake flexible dielectric waveguides
- Rotary joints

mmWave Waveguide-to-Coaxial Adapters: Start Testing Faster!



Get the solution you need! SPINNER extends its millimeter wave waveguide-to-coaxial adapter portfolio up to 165 GHz. The SPINNER mmWave waveguide-to-coaxial adapters for the V, E, W, F and D bands let you directly connect waveguide-based testing 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 include the WR 7/WR 6.5 waveguide to 0.8 mm coaxial adapter, covering the D-band from 110 up to 165 GHz, as well as the WR 8 waveguide to 0.8 mm and 1.0 mm coaxial adapters, covering the F band or parts thereof.

Reliable coaxial connections are crucial for good RF performance. A common frustration in RF laboratories is the unintended loosening of the 1.0 mm coaxial threads after

time-consuming calibrations, necessitating their repetition. The “E-connector” – a 1.35 mm interface for DC to 90 GHz, featuring a precise metric thread and an integrated push-pull function – eliminates this annoyance. Beyond the 1.0 mm connector system, the new solid 0.8 mm interface offers an equally much more stable alternative in terms of the quality of the screw connection.

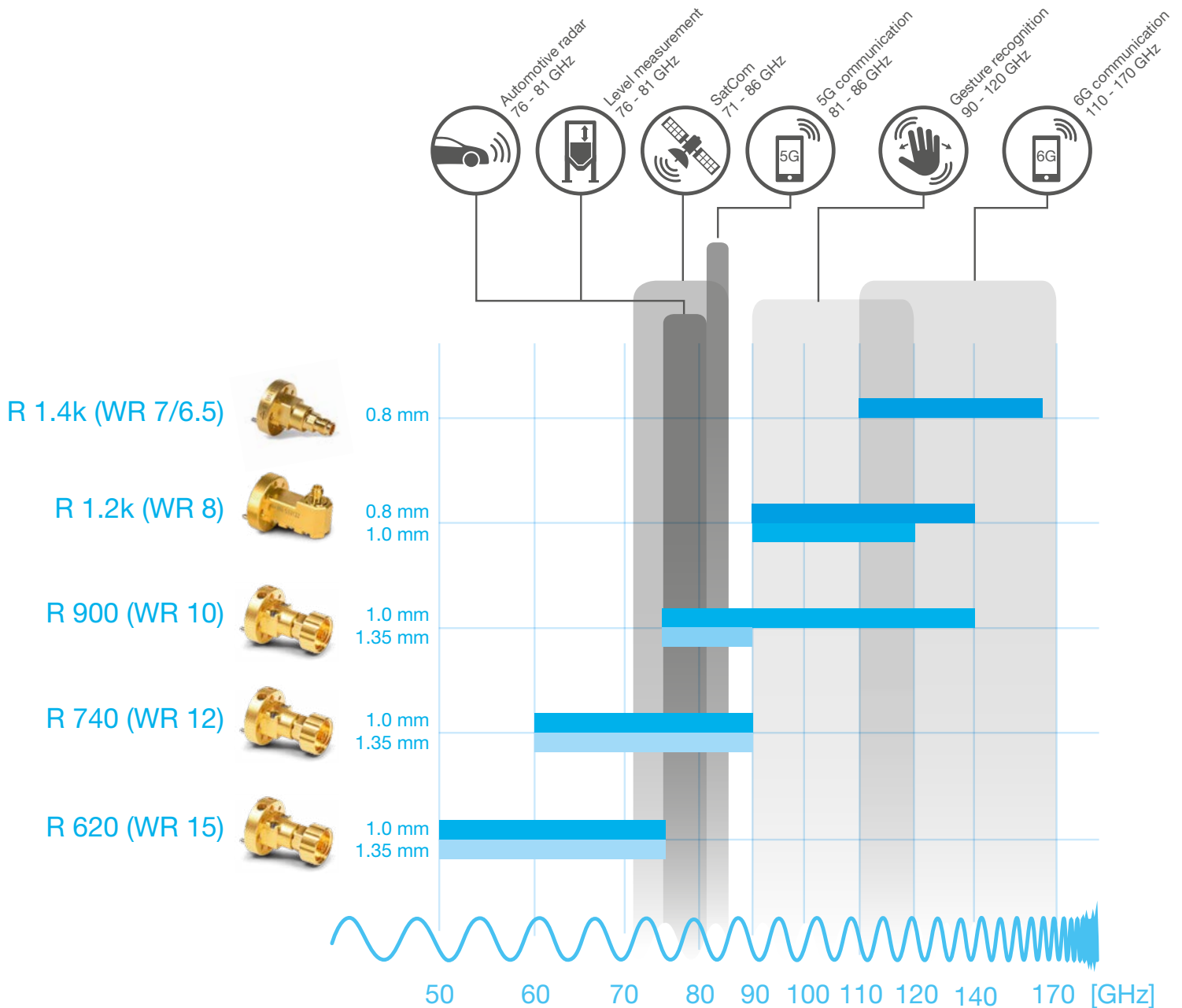
All of these mmWave waveguide adapters are ideal for testing automotive and industrial radar sensors (in the 76 to 81 GHz range), satcom applications (from 71 to 76 GHz and 81 to 86 GHz), and the proposed new mmWave bands for 5G (81 to 86 GHz) and 6G (110 to 170 GHz), as well as for sensors for gesture recognition and material characterization.

Less Fuss, Greater Flexibility!



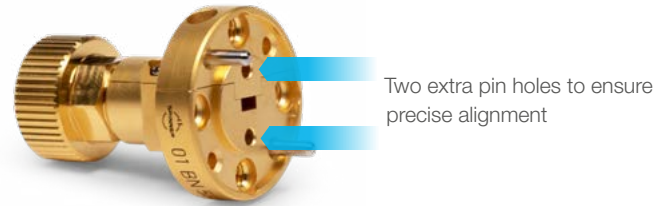
SPINNER mmWave waveguide-to-coaxial adapters

SPINNER mmWave Waveguide-to-Coaxial Adapters: Typical Applications



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, F and D
- Mode of operation on coax side:
 - In-line transition works as a DC short circuit (DC coupled)
 - Right angle transition works as a DC open circuit (DC decoupled)
- 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



mmWave Waveguide-to-Coaxial Adapters 1.00 mm and 1.35 mm Ruggedized



Features

- Well-defined reference plane
- Maximized return losses
- High connector repeatability (min. 45 dB)
- Suitable for precision measurement of S-parameters
- Ruggedized coaxial ports
- In-line style: DC short circuit
- Right-angle style: DC open circuit

Part Number	Style	Description	Frequency Range	Return Loss, min.
BN 533140	in-line	Precision waveguide-to-coaxial adapter R 1.2k (WR 8) to RUG-1.00 mm female	90 to 120 GHz	≥ 10 dB
BN 533141	in-line	Precision waveguide-to-coaxial adapter R 900 (WR 10) to RUG-1.00 mm female	Full W band	≥ 16 dB
BN 533142	in-line	Precision waveguide-to-coaxial adapter R 740 (WR 12) to RUG-1.00 mm female	Full E band	≥ 16 dB
BN 533143	in-line	Precision waveguide-to-coaxial adapter R 620 (WR 15) to RUG-1.00 mm female	Full V band	≥ 16 dB
BN 533161	in-line	Precision waveguide-to-coaxial adapter R 900 (WR 10) to RUG-1.00 mm male	Full W band	≥ 16 dB
BN 533162	in-line	Precision waveguide-to-coaxial adapter R 740 (WR 12) to RUG-1.00 mm male	Full E band	≥ 16 dB
BN 533163	in-line	Precision waveguide-to-coaxial adapter R 620 (WR 15) to RUG-1.00 mm male	Full V band	≥ 16 dB
BN 533151	in-line	Precision waveguide-to-coaxial adapter R 900 (WR 10) to RUG-1.35 mm female	75 to 90 GHz	≥ 16 dB
BN 533152	in-line	Precision waveguide-to-coaxial adapter R 740 (WR 12) to RUG-1.35 mm female	Full E band	≥ 16 dB
BN 533153	in-line	Precision waveguide-to-coaxial adapter R 620 (WR 15) to RUG-1.35 mm female	Full V band	≥ 16 dB

mmWave Waveguide-to-Coaxial Adapters



Features:

- Well-defined reference plane
- Maximized return losses
- High connector repeatability (min. 45 dB)
- Suitable for precision measurement of S-parameters
- In-line style: DC short circuit
- Right-angle style: DC open circuit

Part Number	Style	Description	Frequency Range	Return Loss, min.
BN 533192	in-line	Precision waveguide-to-coaxial adapter R 1.4k (WR 7/WR 6.5), 0.8 mm female	110 to 165 GHz	≥ 12 dB
BN 533193	in-line	Precision waveguide-to-coaxial adapter R 1.4k (WR 7/WR 6.5), 0.8 mm male	110 to 165 GHz	≥ 12 dB
BN 533173	right-angle	Precision waveguide-to-coaxial adapter R 1.4k (WR 7/WR 6.5), 0.8 mm female	110 to 150 GHz	≥ 12 dB
BN 533137	in-line	Precision waveguide-to-coaxial adapter R 1.2k (WR 8), 0.8 mm female	90 to 140 GHz	≥ 12 dB
BN 533150	right-angle	Precision waveguide-to-coaxial adapter R 1.2k (WR 8), 0.8 mm female	90 to 140 GHz	≥ 12 dB
BN 533107	in-line	Precision waveguide-to-coaxial adapter R 1.2k (WR 8) to 1.00 mm female	90 to 120 GHz	≥ 10 dB
BN 533108	in-line	Precision waveguide-to-coaxial adapter R 1.2k (WR 8) to 1.00 mm male	90 to 120 GHz	≥ 10 dB
BN 533110	right-angle	Precision waveguide-to-coaxial adapter R 1.2k (WR 8) to 1.00 mm female	90 to 120 GHz	≥ 16 dB
BN 533112 BN 533114	in-line right-angle	Precision waveguide-to-coaxial adapter R 900 (WR 10) to 1.00 mm female	Full W band	≥ 16 dB
BN 533116 BN 533118	in-line right-angle	Precision waveguide-to-coaxial adapter R 740 (WR 12) to 1.00 mm female	Full E band	≥ 16 dB
BN 533120 BN 533122	in-line right-angle	Precision waveguide-to-coaxial adapter R 620 (WR 15) to 1.00 mm female	Full V band	≥ 16 dB
BN 533124 BN 533125	in-line right-angle	Precision waveguide-to-coaxial adapter R 900 (WR 10) to 1.35 mm female	75 to 90 GHz	≥ 16 dB
BN 533126 BN 533127	in-line right-angle	Precision waveguide-to-coaxial adapter R 740 (WR 12) to 1.35 mm female	Full E band	≥ 16 dB
BN 533128 BN 533129	in-line right-angle	Precision waveguide-to-coaxial adapter R 620 (WR 15) to 1.35 mm female	Full V band	≥ 16 dB
BN 533134	in-line	Precision waveguide-to-coaxial adapter R 900 (WR 10) to 1.35 mm male	75 to 90 GHz	≥ 16 dB
BN 533135	in-line	Precision waveguide-to-coaxial adapter R 740 (WR 12) to 1.35 mm male	Full E band	≥ 16 dB
BN 533136	in-line	Precision waveguide-to-coaxial adapter R 620 (WR 15) to 1.35 mm male	Full V band	≥ 16 dB
BN 533159	in-line	Panel Connector R 740 (WR 12) to 1.35 female, D-hole mount	Full E band	≥ 16 dB



HIGH FREQUENCY PERFORMANCE WORLDWIDE

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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