

SPINNER

0.8 mm Coaxial Connector System –
Enabling Measurements Up to 165 GHz

5G

6G



Need to Meet Requirements of
5G and Future 6G Technologies?

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 GSM, 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 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

Need to Meet Requirements of 5G and Future 6G Technologies?



One of the great challenges in the development of new communication technologies like 6G in the sub-millimeter section such as the D-band frequency range is the flawless and reliable electrical interconnection technology.

Until recently, narrowband rectangular waveguide components were the only option available. Then, the coaxial 0.8 mm connector system (IEC 61169-64) emerged as a standardized solution, eliminating the need for costly plumbing and providing improved bandwidth and measurement capabilities. However, SPINNER goes a step further.

Introducing our revolutionary “solid 0.8 mm” coaxial connector system, offering unmatched precision and performance up to 165 GHz. Our advanced design features a durable solid 0.8 mm interface that ensures damage-free repeated connections while delivering superior electrical characteristics for maximum measurement accuracy.

Compared to standard 0.8 mm connectors, our connectors are highly reliable over extended use, maintaining quality, efficiency and full compatibility.

Our state-of-the-art technology features exceptional flexibility and is suitable for measurement applications in all industries. Our system is one of the most versatile options available, providing high-frequency measurement capabilities up to 165 GHz.

For unparalleled precision and performance, choose SPINNER’s advanced “solid 0.8 mm” coaxial connector system. Experience reliable connectivity like never before.

Design Goals

0.8 mm precision interface with:

- ✓ Accurate alignment with outer conductor
- ✓ Well-defined reference plane
- ✓ Maximized return loss
- ✓ High connector repeatability
- ✓ Suitable for precision S-parameter measurements
- ✓ Operating frequency range DC to 165 GHz
- ✓ Especially designed load element up to 150 GHz

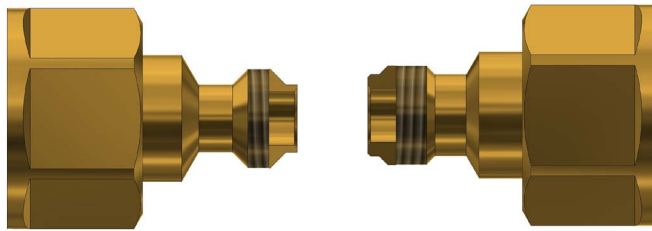
Special Design Features

Solid 0.8 mm female - Highly robust mechanics

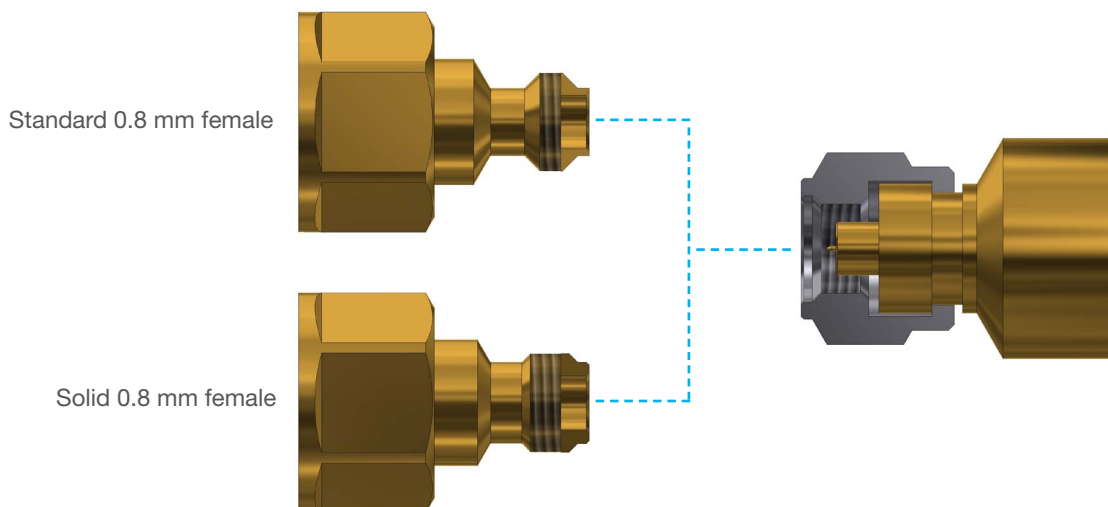
The outer conductor contour of the female connector was designed with a thicker jacket. Benefits: no risk of damaging the standard 0.8 mm female interface any longer.

Comparison of wall thicknesses:

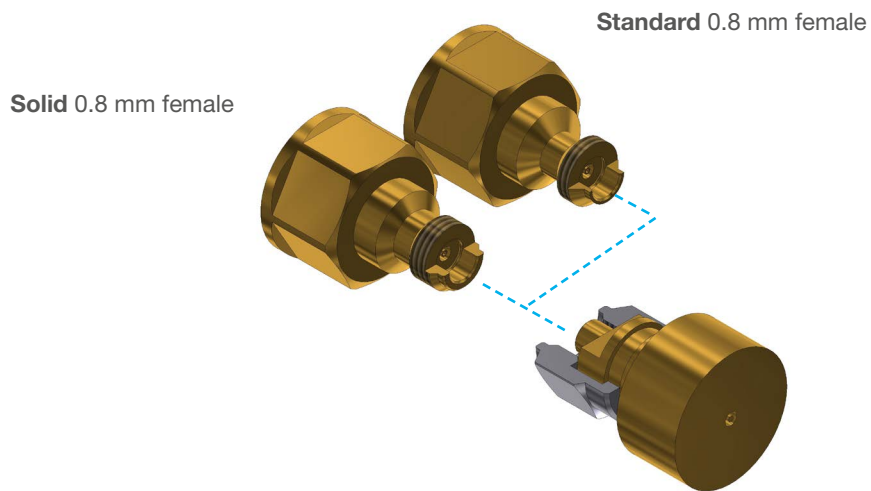
- Left-handed the standard 0.8 mm female with filigree outer shape
- Right-handed the solid 0.8 mm female version



The solid 0.8 mm female is fully mating compatible to the standard 0.8 mm male connector

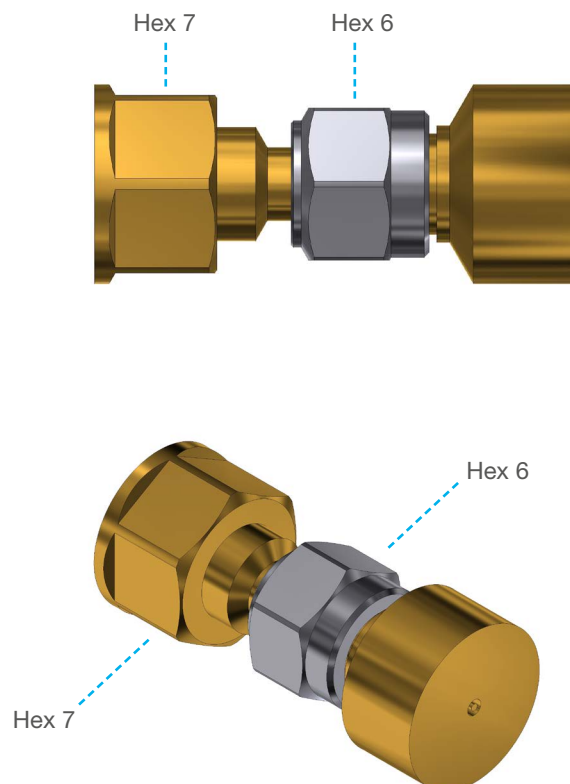


Special Design Features



Wrench size avoid accidental use

In contrast to the coupling nut of the 0.8 mm interface with 6 mm wrench size, the wrench flats for counter holding have been designed in 7 mm. This prevents the accidental use of the counter holding wrench on the coupling nut, which should be tightened with a torque wrench.



SPINNER 0.8 mm Portfolio Overview

Calibration Kit

Part Number	Description	Frequency Range	Available
BN 530850	Boxed O S L T High Precision Calibration Kit 0.8 mm	DC to 150 GHz	09/2023
BN 530831	Open circuit termination; 0.8 mm-m		
BN 530832	Open circuit termination; 0.8 mm-f		
BN 530833	Short circuit termination; 0.8 mm-m		
BN 530836	Short circuit termination; 0.8 mm-f		
BN 530839	Matched load; Precision, 0.8 mm-m		
BN 530840	Matched load; Precision, 0.8 mm-f		
BN 530841	Adapter; Precision, 0.8 mm-m, 0.8 mm-m		
BN 530842	Adapter; Precision, 0.8 mm-f, 0.8 mm-f		
BN 530843	Adapter; Precision, 0.8 mm-m, 0.8 mm-f		
BN 238748C0001	Torque Wrench Hex 6, 0.45 N m		
BN 238749C0001	Torque Wrench Hex 6, 0.34 N m		
BN 238750	Double open-ended wrench 7 mm* USB-Drive with Datasheet, S-Parameter, Measurement Uncertainties		

* In opposite to the coupling nut of the 0.8 mm interface with 6 mm wrench size, the wrench flats for counter holding have been designed in 7 mm. This prevents the accidental use of the counter holding wrench on the coupling nut, which should be tightened with a torque wrench.

Calibration & Verification Kit

Part Number	Description	Frequency Range	Available
BN 530851	Boxed O S L T High Precision Calibration & Verification Kit 0.8 mm "extended kit"	DC to 150 GHz	t.b.d
Like BN 530850 additionally with:	Boxed O S L T High Precision Calibration Kit 0.8 mm		
+ BN 530844	Offset Short Circuit, male, 3.09 mm		
+ BN 530845	Offset Short Circuit, female, 3.09 mm		
+ BN 530846	Mismatches 0.8 mm, male, DC to 150 GHz, 30 Ohm		
+ BN 530847	Mismatches 0.8 mm, female, DC to 150 GHz, 30 Ohm		
+ BN 530815	Dial gauge 0.8 mm male		
+ BN 530816	Dial gauge 0.8 mm female		

SPINNER 0.8 mm Portfolio Overview

Calibration & Verification & Extension Kit

Part Number	Description	Frequency Range	Available
BN 530852	Boxed O S L T Calibration & Verification & Extension Kit 0.8 mm "super extended kit"	DC to 165 GHz	t.b.d
Like BN 530851 additionally with:	Boxed O S L T High Precision Calibration & Verification Kit 0.8 mm		
+ BN 530834	Short circuit termination; 0.8 mm-m (Offset length L2)		
+ BN 530835	Short circuit termination; 0.8 mm-m (Offset length L3)		
+ BN 530837	Short circuit termination; 0.8 mm-f (Offset length L2)		
+ BN 530838	Short circuit termination; 0.8 mm-f (Offset length L3)		
+ BN 533192	2x Adapter; Precision, R 1.4k, 0.8 mm-f		
+ BN 533193	2x Adaptor; Precision, R 1.4k, 0.8 mm-m		

Dial Gauges

Part Number	Description	Available
BN 530815	Dial Gauge 0.8 mm male	09/2023
BN 530816	Dial Gauge 0.8 mm female	

Torque Wrenches

Part Number	Description	Available
BN 238748C0001	Torque Wrench 6 mm, 0.45 N m	Q3/2023
BN 238749C0001	Torque Wrench 6 mm, 0.34 N m	
BN 238750	Counter Wrench 7 mm	

Verification Standards

Part Number	Description	Frequency Range	Available
BN 530844	Short circuit termination; 0.8 mm-m (Offset length 3.09 mm)	DC to 150 GHz	Q4/2023
BN 530845	Short circuit termination; 0.8 mm-f (Offset length 3.09 mm)		
BN 530846	Mismatched load; Precision, 0.8 mm-m		
BN 530847	Mismatched load; Precision, 0.8 mm-f		

SPINNER 0.8 mm Portfolio Overview

Offset Shorts

Part Number	Description	Frequency Range	Available
BN 530834	Short circuit termination; 0.8 mm-m (Offset length L2)	DC to 165 GHz	Q4/2023
BN 530835	Short circuit termination; 0.8 mm-m (Offset length L3)		
BN 530837	Short circuit termination; 0.8 mm-f (Offset length L2)		
BN 530838	Short circuit termination; 0.8 mm-f (Offset length L3)		

Adapters

Part Number	Description	Frequency Range	Available
BN 534950	Adapter; Precision, 1.35 mm-m, 0.8 mm-f	DC to 150 GHz	Q4/2023
BN 534951	Adapter; Precision, 1.35 mm-m, 0.8 mm-m		
BN 534954	Adapter; Precision, 1.35 mm-f, 0.8 mm-f		
BN 534955	Adapter; Precision, 1.35 mm-f, 0.8 mm-m		
BN 533164	Adapter; Precision, 1.0 mm-f, 0.8 mm-m	DC to 120 GHz	Yes
BN 533165	Adapter; Precision, 1.0 mm-m, 0.8 mm-f		Q2/2023
BN 533166	Adapter; Precision, 1.0 mm-m, 0.8 mm-m		Q2/2023
BN 533167	Adapter; Precision, 1.0 mm-f, 0.8 mm-f		Yes
BN 533150	Adapter; Precision, R 1.2k (WR 8), 0.8-f, right-angle	90 to 140 GHz	Yes
BN 533192	Adapter; Precision, R 1.4k (WR 6.5), 0.8 mm-m	110 to 165 GHz	Q3/2023
BN 533193	Adapter; Precision, R 1.4k (WR 6.5), 0.8 mm-f		

Cable Connectors

Part Number	Description	Frequency Range	Available
BN 530825	Cable connector; 0.8 mm-m, UT-034 (male-thru)	DC to 150 GHz	Yes
BN 530826	Cable connector; 0.8 mm-m, UT-31-LL (male-thru)		t.b.d.
BN 530827	Cable connector; 0.8 mm-m, UT-034 (P)		Q2/2023
BN 530828	Cable connector; 0.8 mm-m, UT-31-LL (P)		t.b.d.

Single Channel Coaxial Rotary Joint

Part Number	Interface type A	Interface type B	Frequency Range	VSWR, max.
BN 8350BNE1	0.8 mm female	0.8 mm female	DC to 150 GHz	1.2 @ DC to 26.5 GHz 1.4 @ 26.5 to 70 GHz 1.5 @ 70 to 120 GHz 1.6 @ 70 to 150 GHz



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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