

SPINNER 0.8 mm Coaxial Connector System

167 GHz



Enables Fully Traceable Measurements
Up to 167 GHz



HIGH FREQUENCY PERFORMANCE WORLDWIDE
spinner-group.com



The SPINNER Group

For nearly 80 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



DEFENSE



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 167 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

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 0.8 mm coaxial connector system with strengthened outer conductor, offering unmatched precision and performance up to 167 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 167 GHz.

For unparalleled precision and performance, choose SPINNER's advanced **"strengthened 0.8 mm coaxial connector system"**. Experience reliable connectivity like never before.

Design Goals

0.8 mm precision interface with:

- ✓ Accurate alignment of the outer conductor
- ✓ Well-defined reference plane
- ✓ Maximized return loss
- ✓ High connector repeatability
- ✓ Suitable for precision S-parameter measurements
- ✓ Operating frequency range: DC to 167 GHz
- ✓ Specially designed load element up to 167 GHz

Special Design Features

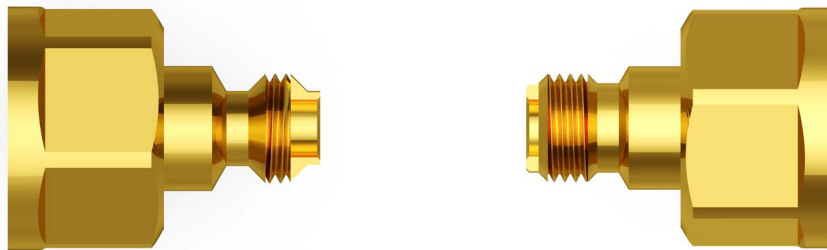
Solid 0.8 mm Female - Highly Robust Mechanics

The outer conductor contour of the female connector has been designed with a thicker jacket.

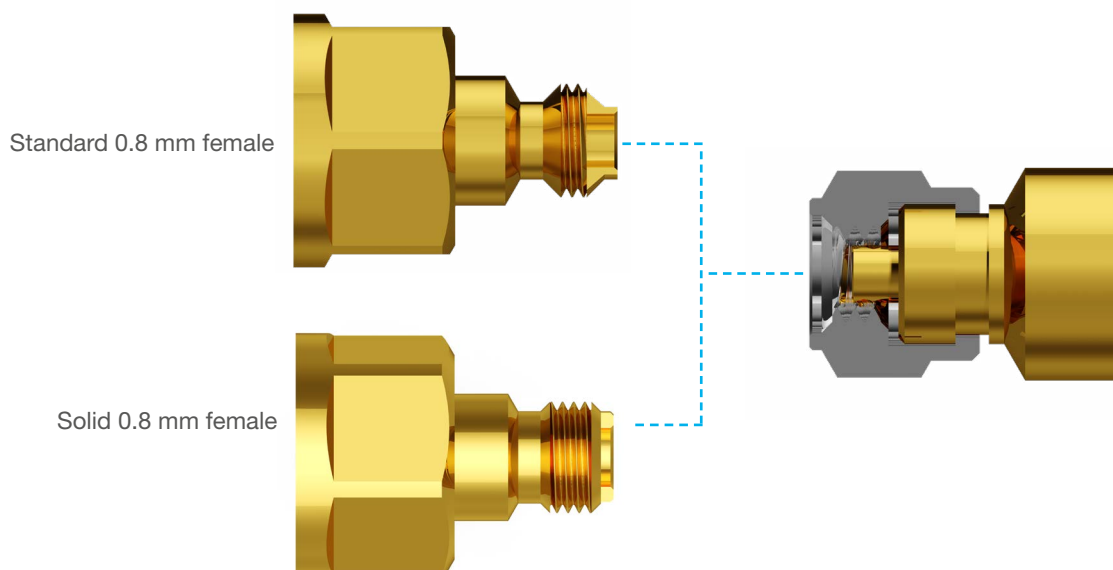
Benefit: Eliminates the risk of damaging the standard 0.8 mm female interface.

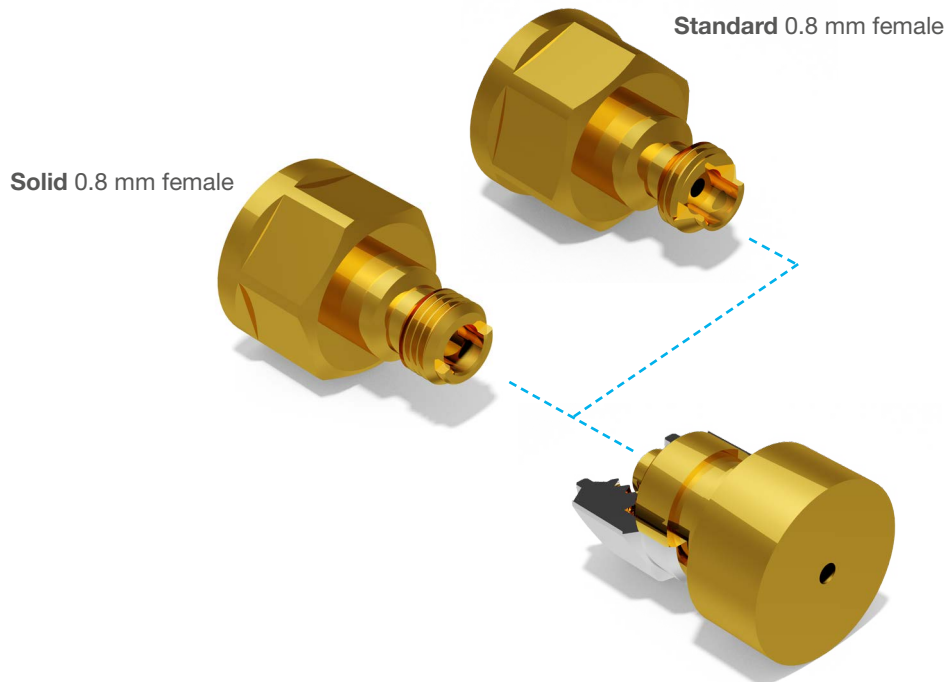
Comparison of Wall Thicknesses

- Left: Standard 0.8 mm female with delicate outer contour
- Right: Solid 0.8 mm female version with reinforced design



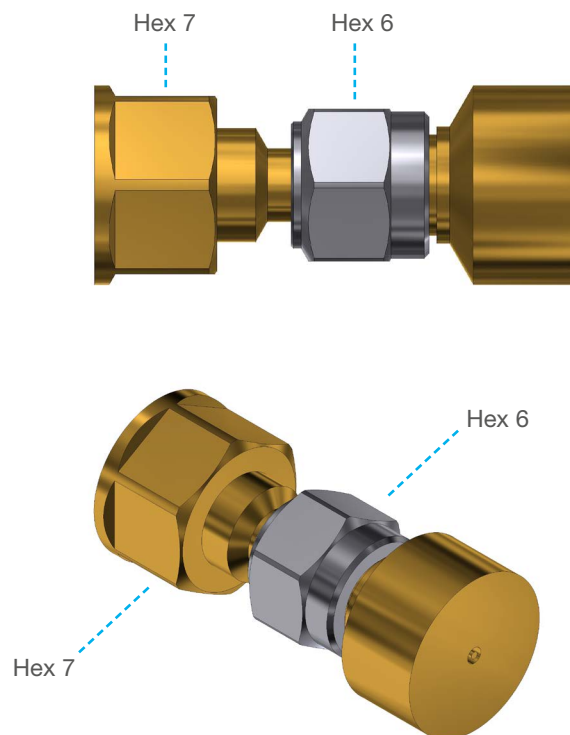
The Solid 0.8 mm Female Connector is Fully Compatible with the Standard 0.8 mm Male Connector





Wrench Size to Prevent Accidental Use

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



SPINNER 0.8 mm Portfolio

0.8 mm SOLR High Precision Calibration Kit Overview, DC to 150/167 GHz



Use Cases

- SOLR Calibration from DC to 150 GHz
- SSSR Calibration from 140 to 167 GHz
- Combined calibration from DC to 167 GHz
- Calibration verification from DC to 150 GHz
- Adaption of the waveguide ports of VNA frequency extenders to coaxial 0.8 mm test ports for 110 to 167 GHz
- Measurement of connector pin depths

Description	Qty	Part Number	Use Case	BN 530850	BN 530851	BN 530852
Frequency range				DC to 150 GHz SOLR calibration	DC to 150 GHz SOLR calibration Calibration verification	DC to 150 GHz SOLR calibration 140 to 167 GHz SSSR calibration
Calibration data type				Individual coefficients		
Traceability				✓		
Calibration document				SPINNER calibration certificate		
Short circuit termination, socket, offset 3.890 mm	1	BN 530836	SOLR, SSSR		●	
Short circuit termination, plug, offset 3.890 mm	1	BN 530833	SOLR, SSSR		●	
Open circuit termination, socket, offset 3.890 mm	1	BN 530832	SOLR		●	
Open circuit termination, plug, offset 3.890 mm	1	BN 530831	SOLR		●	
Thru, socket / socket	1	BN 530842	SOLR		●	
Thru, plug / plug	1	BN 530841	SOLR		●	
Thru, plug / socket	1	BN 530843	SOLR		●	
Matched load, socket	1	BN 530840	SOLR		●	
Matched load, plug	1	BN 530839	SOLR		●	
Torque wrench 6 mm / 45 N·cm	1	BN 238748C0001	tightening		●	
Torque wrench 6 mm / 34 N·cm	1	BN 238749C0001	tightening		●	
Double open-ended spanner 7 mm*	1	BN 238750	counteracting		●	

*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.

0.8 mm SOLR High Precision Calibration Kit Overview, DC to 150/167 GHz

Description	Qty	Part Number	Use Case	BN 530850	BN 530851	BN 530852
Connector gauge for socket mating face	1	BN 530816	pin depth measurement	○	●	●
Connector gauge for plug mating face	1	BN 530815	pin depth measurement	○	●	●
Short circuit termination, socket, offset 3.090 mm	1	BN 530845	verification	○	●	●
Short circuit termination, plug, offset 3.090 mm	1	BN 530844	verification	○	●	●
Mismatched load, socket	1	BN 530847	verification	○	●	●
Mismatched load, plug	1	BN 530846	verification	○	●	●
Short circuit termination, socket, offset 4.554 mm	1	BN 530837	SSSR	○	○	●
Short circuit termination, plug, offset 4.554 mm	1	BN 530834	SSSR	○	○	●
Short circuit termination, socket, offset 5.179 mm	1	BN 530838	SSSR, verification	○	●	●
Short circuit termination, plug, offset 5.179 mm	1	BN 530835	SSSR, verification	○	●	●
Adapter, R 1.4k to 0.8 mm socket	2	BN 533192	SSSR, adaption	○	○	●
Adapter, R 1.4k to 0.8 mm plug	2	BN 533193	SSSR, adaption	○	○	●

● Included ○ Optional

0.8 mm SOLR High Precision Calibration Kit Overview, DC to 167 GHz



Use Cases

- SOLR Calibration from DC to 167 GHz
- Measurement of connector pin depths

Description	Qty	Part Number	Use Case	BN 530890	BN 530891
Frequency range				DC to 167 GHz	
Calibration data type				Individual coefficients	
Traceability				✓	
Calibration document				SPINNER calibration certificate	
Short circuit termination, socket, offset 3.890 mm	1	BN 530872	SOLR	●	
Short circuit termination, plug, offset 3.890 mm	1	BN 530871	SOLR	●	
Open circuit termination, socket, offset 3.890 mm	1	BN 530836	SOLR	●	
Open circuit termination, plug, offset 3.890 mm	1	BN 530833	SOLR	●	
Matched load, socket	1	BN 530876	SOLR	●	
Matched load, plug	1	BN 530875	SOLR	●	
Thru, socket / socket	1	BN 530879	SOLR	●	
Thru, plug / plug	1	BN 530878	SOLR	●	
Thru, plug / socket	1	BN 530880	SOLR	●	
Torque wrench 6 mm / 45 N·cm	1	BN 238748C0001	tightening	●	
Torque wrench 6 mm / 34 N·cm	1	BN 238749C0001	tightening	●	
Double open-ended spanner 7 mm*	1	BN 238750	counteracting	●	
Connector gauge for socket mating face	1	BN 530816	pin depth measurement	○	●
Connector gauge for plug mating face	1	BN 530815	pin depth measurement	○	●

* 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

● Included ○ Optional

Verification Standards

Part Number	Description	Frequency Range
BN 530844	Short circuit termination; 0.8 mm plug (Offset length 3.09 mm)	DC to 167 GHz
BN 530845	Short circuit termination; 0.8 mm socket (Offset length 3.09 mm)	
BN 530835	Short circuit termination; 0.8 mm plug (Offset length 5.179 mm)	
BN 530838	Short circuit termination; 0.8 mm socket (Offset length 5.179 mm)	
BN 530846	Load, mismatched, 0.8 mm, plug, 14 to 40 Ohms	DC to 150 GHz
BN 530847	Load, mismatched, 0.8 mm, socket, 14 to 40 Ohms	

Offset Shorts

Part Number	Description	Frequency Range
BN 530834	Short circuit termination; 0.8 mm plug (Offset length 4.554 mm)	DC to 167 GHz
BN 530835	Short circuit termination; 0.8 mm plug (Offset length 5.179 mm)	
BN 530837	Short circuit termination; 0.8 mm socket (Offset length 4.554 mm)	
BN 530838	Short circuit termination; 0.8 mm socket (Offset length 5.179 mm)	

Loads, mismatched, 14 to 40 Ohms

Part Number	Description	Frequency Range
BN 530846	Load, mismatched, 0.8 mm plug, 14 to 40 Ohms	DC to 150 GHz
BN 530847	Load, mismatched, 0.8 mm socket, 14 to 40 Ohms	

Inter-Series Adapters

Part Number	Description	Frequency Range
BN 534950	Adapter; Precision, 1.35 mm plug, 0.8 mm socket	DC to 90 GHz
BN 534951	Adapter; Precision, 1.35 mm plug, 0.8 mm plug	
BN 534954	Adapter; Precision, 1.35 mm socket, 0.8 mm socket	
BN 534955	Adapter; Precision, 1.35 mm socket, 0.8 mm plug	
BN 533164	Adapter; Precision, 1.0 mm socket, 0.8 mm plug	DC to 120 GHz
BN 533165	Adapter; Precision, 1.0 mm plug, 0.8 mm socket	
BN 533166	Adapter; Precision, 1.0 mm plug, 0.8 mm plug	
BN 533167	Adapter; Precision, 1.0 mm socket, 0.8 mm socket	

Waveguide-to-Coaxial-Adapters

Part Number	Description	Frequency Range
BN 533138	Adapter; Precision, R 900 (WR 10), 0.8 mm socket	75 to 110 GHz
BN 533139	Adapter; Precision, R 900 (WR 10), 0.8 mm plug	
BN 533156	Adapter; Precision, R 900 (WR 10), 0.8 mm plug, with easy coupling nut	
BN 530829	Adapter; Precision, R 1.2k (WR 8), RUG-0.8 mm plug	90 to 140 GHz
BN 533137	Adapter; Precision, R 1.2k (WR 8), 0.8 socket	90 to 140 GHz
BN 533150	Adapter; Precision, R 1.2k (WR 8), 0.8 socket, right-angle	
BN 533173	Adapter; Precision, R 1.4k (WR 7 / WR 6.5), 0.8 mm socket, right-angle	110 to 150 GHz
BN 533192	Adapter; Precision, R 1.4k (WR 7 / WR 6.5), 0.8 mm socket	110 to 167 GHz
BN 533193	Adapter; Precision, R 1.4k (WR 7 / WR 6.5), 0.8 mm plug	

Ruggedized Test Port Adapters

Part Number	Description	Frequency Range
BN 535156	Ruggedized Test Port Adapter, RUG-1.0 mm socket, 0.8 mm socket	DC to 120 GHz
BN 535157	Ruggedized Test Port Adapter, RUG-1.0 mm socket, 0.8 mm plug	
BN 535147	Adapter; Precision, RUG-0.8 mm socket, RUG-0.8 mm socket	DC to 150 GHz
BN 535148	Adapter; Precision, RUG-0.8 mm plug, 0.8 mm plug, panel 4 hole	

Board Connectivity

Part Number	Interface type A	Frequency range	Return loss, min.
BN 533408	0.8 mm socket	DC to 150 GHz	21 dB @ DC to 26.5 GHz 19 dB @ 26.5 to 40 GHz 14 dB @ 40 to 90 GHz 10 dB @ 90 to 110 GHz 8 dB @ 110 to 150 GHz
BN 530861	0.8 mm socket	DC to 167 GHz	21 dB @ DC to 26.5 GHz 19 dB @ 26.5 to 40 GHz 14 dB @ 40 to 90 GHz 10 dB @ 90 to 110 GHz 8 dB @ 110 to 150 GHz 5 dB @ 110 to 167 GHz

Cable Connectors (thru-male)

Part Number	Description	Frequency range	Return loss, min. / typ.
BN 530825	Cable connector; 0.8 mm plug, UT-034 (thru-male)	DC to 150 GHz	15 dB / 17 dB @ DC to 90 GHz 12 dB / 15 dB @ 90 to 110 GHz 10 dB / 12 dB @ 110 to 150 GHz

Cable Connectors (solder pin)

Part Number	Description	Frequency range	Return loss, min. / typ.
BN 530827	Cable connector; 0.8 mm plug, UT-034 (solder pin)	DC to 150 GHz	20 dB / 25 dB @ DC to 40 GHz 16 dB / 20 dB @ 40 to 90 GHz 14 dB / 18 dB @ 90 to 110 GHz 12 dB / 15 dB @ 110 to 150 GHz
BN 530828	Cable connector; 0.8 mm plug, UT-31-LL (solder pin)		20 dB / 25 dB @ DC to 40 GHz 16 dB / 20 dB @ 40 to 90 GHz 14 dB / 18 dB @ 90 to 110 GHz 12 dB / 15 dB @ 110 to 150 GHz
BN 530830	Cable connector; 0.8 mm socket, EZ-20-LA (solder pin)	DC to 167 GHz	20 dB / 25 dB @ DC to 40 GHz 16 dB / 20 dB @ 40 to 90 GHz 14 dB / 18 dB @ 90 to 110 GHz 12 dB / 15 dB @ 110 to 150 GHz
BN 530863	Cable connector; 0.8 mm plug, EZ-20-LA (solder pin)		9 dB / 12 dB @ 150 to 167 GHz

Single Channel Coaxial Rotary Joint

Part Number	Interface type A	Interface type B	Frequency range	VSWR, max.
BN 8350BNE1	0.8 mm socket	0.8 mm socket	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

Matched Load 0.8 mm, 1 W

Part Number	Description	Frequency range	Power handling	Return loss, min.
BN 531716	Matched Load 0.8 mm plug	DC to 150 GHz	1 W	10 dB @ DC to 150 GHz
BN 531718	Matched Load 0.8 mm socket			

Connector Gauges

Part Number	Description
BN 530815	Connector gauge 0.8 mm plug
BN 530816	Connector gauge 0.8 mm socket

Torque Wrenches

Part Number	Description
BN 238748C0001	Torque Wrench 6 mm, 0.45 N·m, break-over-type
BN 238749C0001	Torque Wrench 6 mm, 0.34 N·m, break-over-type
BN 238750	Counter Wrench 7 mm



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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