

Anritsu Advancing beyond

0.8 mm Connectors, Adapters, and Terminations

Coaxial connector system with
single-mode performance to 145 GHz

0.8 mm Connector Family

DC to 145 GHz



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Definitions

Specifications	All specifications and characteristics apply under the following conditions, unless otherwise stated:
Typical Performance	Typical specifications are not tested and not warranted. They are generally representative of characteristic performance.
Dimensions	All dimensions shown are in millimeters (mm) unless otherwise noted.
	All specifications subject to change without notice. For the most current data sheet, please visit the Anritsu web site: www.anritsu.com

Introduction

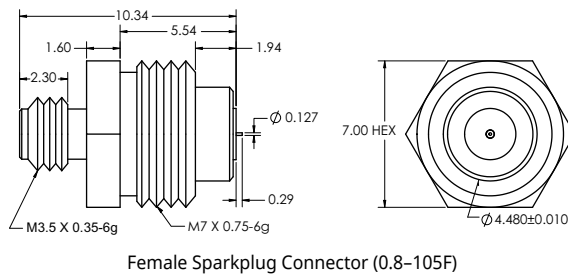
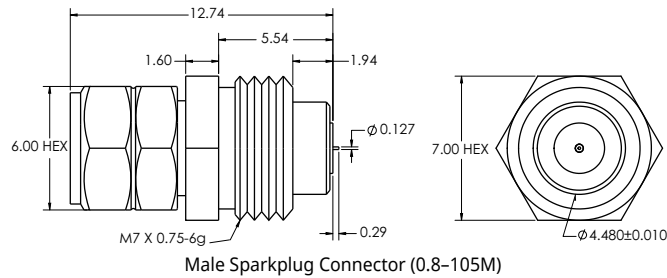
The 0.8 mm connector family is a complete coaxial connector system with single-mode performance to 145 GHz. It contains male and female non-hermetic connectors, male and female broadband terminations and in-series adapters. The 0.8 mm connector is well suited for high frequency applications ranging from components to systems and instrumentation.

0.8 mm Connector Features

- Excellent RF Performance to 145 GHz
- 50 Ω Impedance
- Low VSWR
- Standard 0.8 mm Interface
- Accurate Testing Capability
- Broadband Load for Instrument and Device Under Test

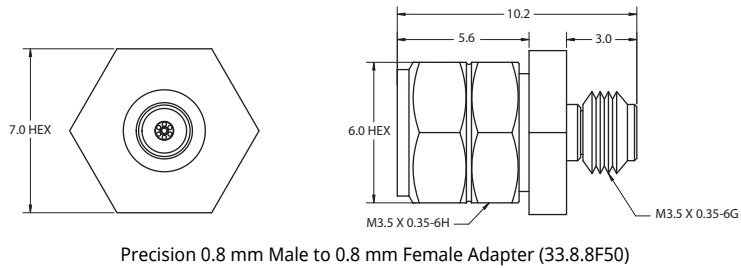
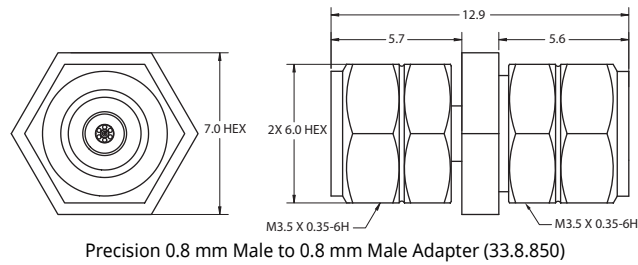
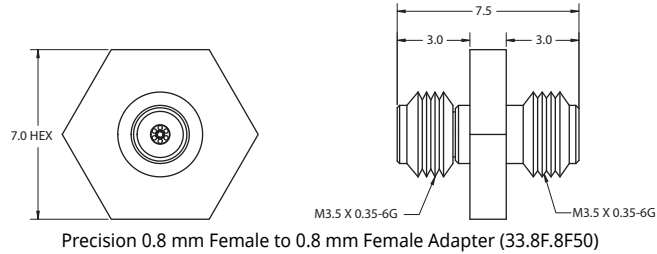
0.8-105F, 0.8-105M Connector Launchers

The 0.8 mm connector launcher family includes both male and female screw-in type connectors. The 0.8 mm connector has an air dielectric front-side interface similar to K and V connectors. The center conductor is supported by Anritsu's proprietary low-loss high temperature support bead on one end, and a Teflon bead on the other end to provide exceptional concentricity and rigidity to the pin on the backside. The use of a high temperature support bead allows the connector to be subjected to extended temperature ranges up to 200 °C for a short period. The center conductor extends outside of the connector and allows the user to make a direct pin overlap connection to the microwave circuit.



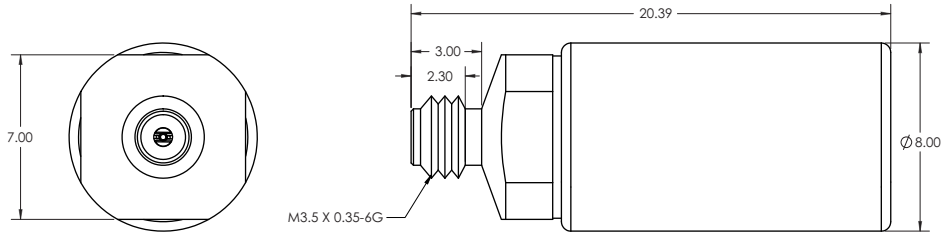
0.8 mm Calibration-grade Adapters

The 33 series, precision 0.8 mm adapters enable accurate measurements from DC to 145 GHz. These adapters feature three combinations between connector genders: 0.8 mm (f) - 0.8 mm (f), 0.8 mm (m) - 0.8 mm (f), 0.8 mm (m) - 0.8 mm (m). 0.8 mm adapters have an air dielectric interface and a center conductor that is supported by a proprietary low-loss, high temperature support bead. When used as connector savers, these adapters protect the system's test port by reducing the number of connections made directly to the test port.

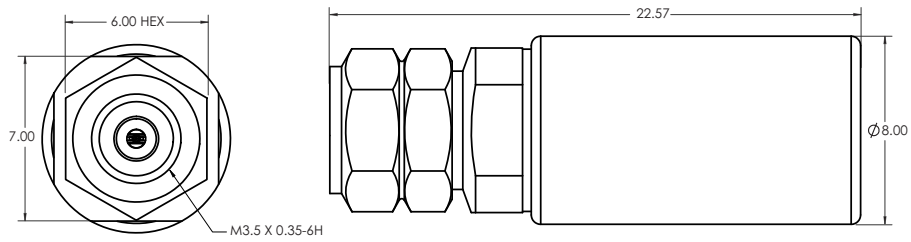


0.8 mm Precision Terminations

0.8 mm precision metrology-grade terminations are used in measurement systems that need to achieve the smallest possible reflections. Designed in both male and female configurations, these terminations can be used as a precision load for test instruments or devices under test.



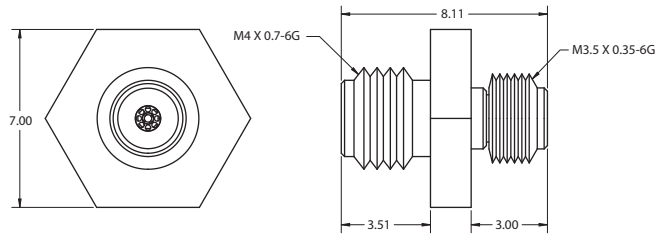
0.8 mm Female Precision Termination (28.8F50)



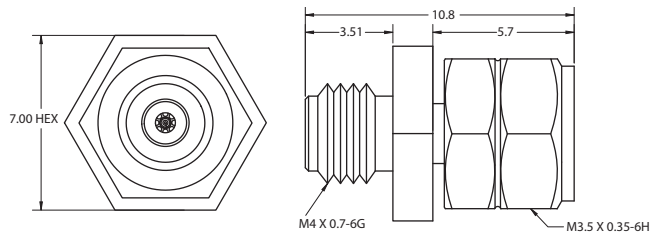
0.8 mm Male Precision Termination (28.850)

0.8 mm-W1 Adapters

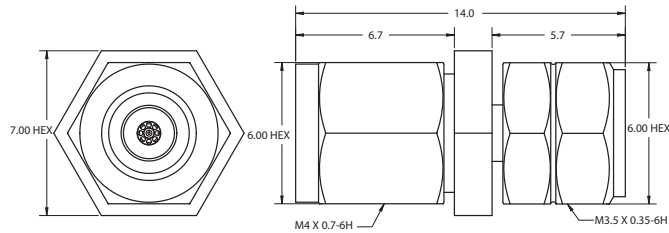
0.8 mm – W1 adapters provide an interface between 0.8 mm connectors and W1 connectors and allow connections between two different connector types. Please contact Anritsu for more details on this product. www.anritsu.com



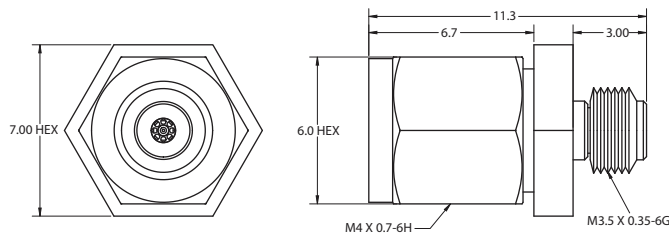
W1 Female to 0.8 mm Female Adapter (33WF.8F50)



W1 Female to 0.8 mm Male Adapter (33WF.850)



W1 Male to 0.8 mm Male Adapter (33W.850)



W1 Male to 0.8 mm Female Adapter (33W.8F50)

0.8 mm Connector

Impedance	50 Ω
Frequency	DC to 145 GHz
Insertion Loss	0.60 dB (typical)
Return Loss	15 dB to 145 GHz (typical)
Insulation Resistance	> 1200 MΩ typical
Center Conductor Contact Resistance	6 mΩ typical
Front-side Pin Depth	0.0 to -0.076 mm
Backside Pin Protrusion	0.32 mm typical for 0.8-105F, 0.8-105M
Torque Coupling Nut	4 in-lb maximum

Specifications

0.8 mm Precision Termination^{1,2}

Model	Frequency Range	Test Port Connector	Input Impedance	VSWR	Dimensions Length x Diameter
28.850	DC to 145 GHz	0.8 mm	50 Ω	< 1.052 to 40 GHz < 1.065 to 80 GHz < 1.222 to 145 GHz	2.3 x 8 cm
28.8F50	DC to 145 GHz	0.8 mm	50 Ω	< 1.052 to 40 GHz < 1.065 to 80 GHz < 1.222 to 145 GHz	2.1 x 8 cm

0.8 mm and W1-0.8 mm Adapters^{1,2}

Model	Connectors	Frequency	Insertion Loss (dB)	Return Loss (dB)
33.8.850	0.8 mm (male) to 0.8 mm (male)	DC to 145 GHz	0.6	> 23 dB to 40 GHz > 20 dB to 80 GHz > 18 dB to 110 GHz > 15 dB to 145 GHz
33.8.8F50	0.8 mm (male) to 0.8 mm (female)	DC to 145 GHz	0.6	> 23 dB to 40 GHz > 20 dB to 80 GHz > 18 dB to 110 GHz > 15 dB to 145 GHz
33.8F.8F50	0.8 mm (female) to 0.8 mm (female)	DC to 145 GHz	0.6	> 23 dB to 40 GHz > 20 dB to 80 GHz > 18 dB to 110 GHz > 15 dB to 145 GHz
33WF.8F50	W1 (female) to 0.8 mm (female) adapter	DC to 110 GHz	0.6	> 22 dB to 65 GHz > 18 dB to 80 GHz > 15 dB to 110 GHz
33WF.850	W1 (female) to 0.8 mm (male) adapter	DC to 110 GHz	0.6	> 22 dB to 65 GHz > 18 dB to 80 GHz > 15 dB to 110 GHz
33W.850	W1 (male) to 0.8 mm (male) adapter	DC to 110 GHz	0.6	> 22 dB to 65 GHz > 18 dB to 80 GHz > 15 dB to 110 GHz
33W.8F50	W1 (male) to 0.8 mm (female) adapter	DC to 110 GHz	0.6	> 22 dB to 65 GHz > 18 dB to 80 GHz > 15 dB to 110 GHz

Regulatory Compliance

European Union RoHS Directive: 2011/65/EU + Amendment 2015/863

Environmental

Temperature Shock	Tests per MIL-STD-202G: 25 °C to -40 °C and 25 °C to +125 °C, method 107G, condition
Maximum Relative Humidity	95% at 40 °C, 96 hours, Test 103B, condition B, non operating only
Salt Spray	Spray 5% concentration for 48 hours, Method 101D, Condition B
Mechanical Shock	100G peak sawtooth, method 213, test condition 1
Vibration	Sine wave: 10 Hz to 2000 Hz, 0.06 in DA, method 204, test condition D Random: 50 Hz to 2000 Hz, 11.6 Grams, Power Spectral Density 0.1 Grams ² /Hz, Method 214, Test Condition I, Letter D
Dielectric Withstanding Voltage	500 VAC RMS, 60 seconds, method 301

1. (Typical)

2. Maximum input power not to exceed 0.5 W

Ordering Information

0.8-105F	Sparkplug Launcher Connector, 0.8 mm (f), DC to 145 GHz
0.8-105M	Sparkplug Launcher Connector, 0.8 mm (m), DC to 145 GHz
28.850	0.8 mm Termination, DC to 145 GHz, 0.8 mm (m), 50Ω
28.8F50	0.8 mm Termination, DC to 145 GHz, 0.8 mm (f), 50Ω
33.8.850	Calibration-grade Adapter, 0.8 mm (m) - 0.8 mm (m), DC to 145 GHz, 50 Ω
33.8.8F50	Calibration-grade Adapter, 0.8 mm (m) - 0.8 mm (f), DC to 145 GHz, 50 Ω
33.8F.8F50	Calibration-grade Adapter, 0.8 mm (f) - 0.8 mm (f), DC-145 GHz, 50 Ω
33WF.8F50	Calibration-grade Adapter, W1(f) - 0.8 mm (f), DC to 110 GHz, 50 Ω
33WF.850	Calibration-grade Adapter, W1(f) - 0.8 mm (f), DC to 110 GHz, 50 Ω
33W.850	Calibration-grade Adapter, W1(m) - 0.8 mm (m), DC to 110 GHz, 50 Ω
33W.8F50	Calibration-grade Adapter, W1(m) - 0.8 mm (f) , DC to 110 GHz, 50 Ω

Tools

01-524	0.8 mm-6 mm Torque Wrench
01-525	6 mm x 7 mm Open End Wrench
01-526	0.8 mm 7 mm Torque Wrench (Used for installing connector into housing)

Notes

Training at Anritsu

Anritsu has designed courses to help you stay up to date with technologies important to your job. For available training courses, visit: www.anritsu.com/training



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