CSS-SGAF-050-STTN

SMA Bulkhead Jack to Unterminated End Cable Assembly

The CSS-SGAF-050-STTN cable assembly provides an SMA bulkhead jack (female socket) to an unterminated, trimmed and tinned connection with a 50 mm length of 0.047 semi-rigid coaxial cable.

Operating from 0 Hz to 8 GHz, the CSS-SGAF- 050-STTN cable assembly combines superior performance, compact size, and a convenient threaded mating interface to provide a reliable, easy-to-use cable assembly. Additionally, all Linx coaxial cables and connectors meet RoHS lead free standards and are tested to meet requirements for corrosion resistance, vibration, mechanical and thermal shock.

FEATURES

- 0 Hz to 8 GHz operation
- SMA jack (female socket)
  - Gold plated
  - Gold plated brass washer and 1/4”-36UNS hex nut provided
- Unterminated end, trimmed and tinned
- 0.047 semi-rigid coaxial cable

APPLICATIONS

- LPWA
- Cellular IoT – LTE-M (Cat-M1), NB-IoT
- Cellular – 5G/4G LTE/3G/2G
- PC, LAN
- ISM – Bluetooth®, ZigBee®
- GNSS – GPS, Galileo, GLONASS, BeiDou, QZSS
- Automotive, Industrial, Commercial, Enterprise

TABLE 1. ELECTRICAL SPECIFICATIONS

Parameter	Value
Insertion Loss (dB max)	0.6
VSWR (max)	1.5
Impedance	50 Ω
Insulation Resistance	500 MΩ min.

ORDERING INFORMATION

Part Number	Description
CSS-SGAF-050-STTN	SMA bulkhead jack (female socket) to unterminated/trimmed end on 50 mm (2.0 in) of 0.047 semi-rigid coaxial cable

Available from Linx Technologies and select distributors and representatives.

PRODUCT DIMENSIONS

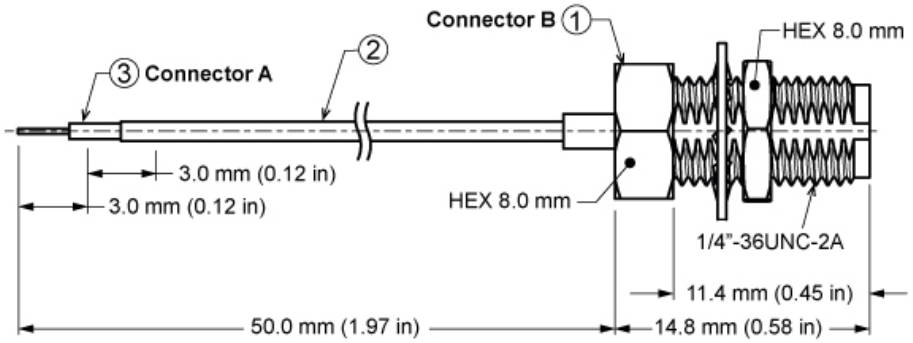

Figure 1. Product Dimensions for the CSS-SGAF-050-STTN Cable Assembly

TABLE 2. CABLE ASSEMBLY COMPONENTS

Item #	Description	Material	Finish
1	Connector, SMA bulkhead jack (female socket) hex nut and washer	Brass	Gold
2	0.047 coaxial cable	0.047 coaxial	Black
3	Unterminated connection, trimmed	–	Gold

TABLE 3. CABLE ASSEMBLY MECHANICAL SPECIFICATIONS

Parameter	Connector A Unterminated, trimmed coax	Connection B SMA bulkhead jack (female socket)
Fastening Type	Solder	1/4"-36 UNS-2A threaded coupling
Recommended Torque	–	0.9 N m (8.0 in lbs)
Coupling Nut Retention	–	60 lbs. min.
Connector Durability	–	500 cycles min.
Weight	3.6 g (0.13 oz)	

RECOMMENDED MOUNTING

Figure 2 shows the recommended mounting hole dimensions for the SMA connector (bulkhead) end of the cable assembly. The hex nut torque should not exceed 10.0 in/lbs max or damage may occur to threads. The max enclosure wall thickness = 3.3 mm (0.13 in.

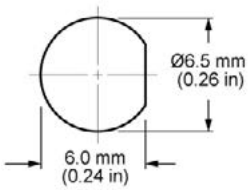

Figure 2. Recommended Mounting Hole Dimensions for the CSS-SGAF-050-STTN Cable Assembly

COAXIAL CABLE SPECIFICATIONS

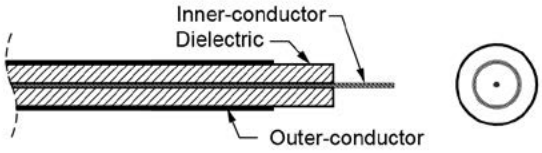

Figure 3. Coaxial Cable Cutaway Diagram

TABLE 4. COAXIAL CABLE MATERIAL SPECIFICATIONS FOR 1.13 MM CABLE

Parameter	Material	Dimensions
Inner-Conductor	Silver plated copper, 1 strand, 0.28 mm	Ø0.028 mm (0.011 in)
Dielectric	PTFE, natural	Ø0.92 mm (0.036 in)
Outer-Conductor	Silver plated seamless copper tube (wall thickness 1.12 mm)	Ø3.16 mm (0.124 in)

TABLE 5. COAXIAL CABLE ELECTRICAL AND PHYSICAL SPECIFICATIONS FOR 0.047 SEMI-RIGID CABLE

Parameter	Value
Nominal Impedance	50 Ω
Nominal Capacitance	98 pF/m
Operating Temperature Range	-55 ° C to +125 °C
Minimum Inside Bend radius	6.35 mm (0.25 in)
Spark Test	3.0 kV

INSERTION LOSS

Figure 4 shows the Insertion Loss for CSS-SGAF-050-STTN cable assembly. Insertion loss is the loss of signal power (gain) resulting from the insertion of a device in a transmission line.

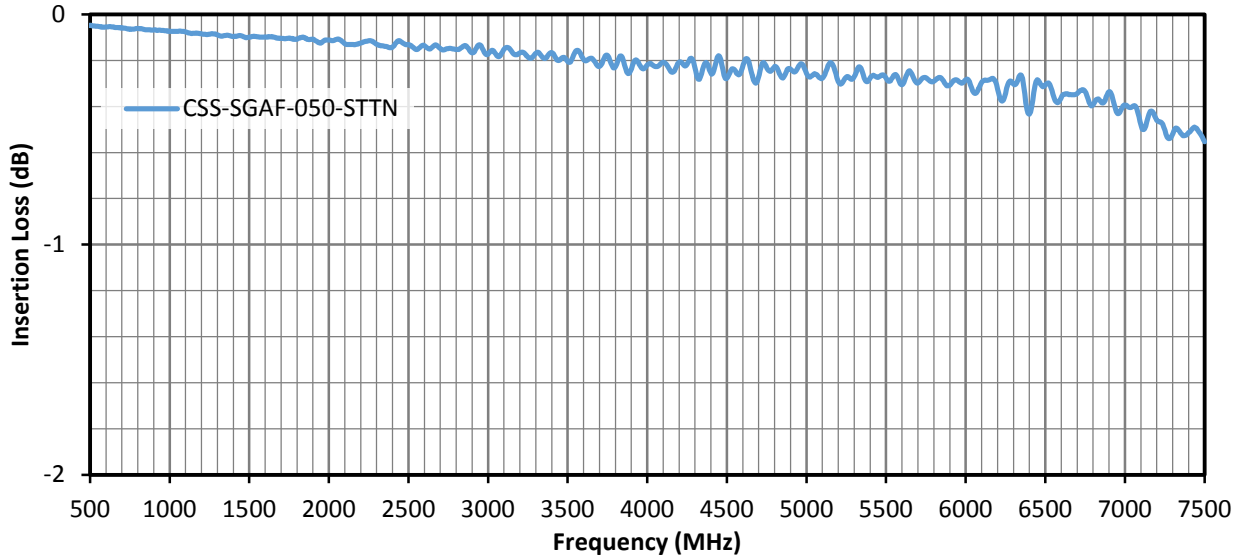

Figure 4. Insertion Loss for the CSS-SGAF-050-STTN Cable Assembly

VSWR

Figure 5 provides the voltage standing wave ratio (VSWR) across the cable assembly's bandwidth for the CSI-SGAF-050-STTN cable assembly. VSWR describes how efficiently power is transmitted through the cable assembly. A lower VSWR value indicates better performance at a given frequency.

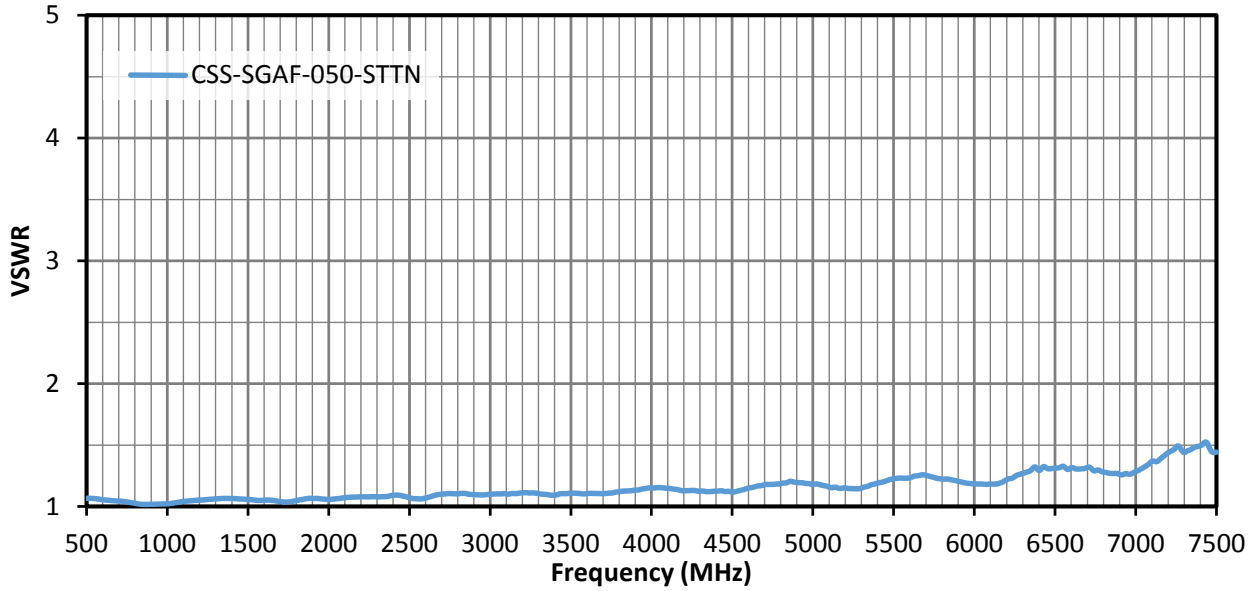

Figure 5. VSWR for the CSS-SGAF-050-STTN Cable Assembly

PACKAGING INFORMATION

The CSS-SGAF-050-STTN cable assembly is packaged in a clear plastic bag, in quantities of 10. Distribution channels may offer alternative packaging options.

CABLE ASSEMBLY DEFINITIONS AND USEFUL FORMULAS

VSWR - Voltage Standing Wave Ratio. VSWR is a unitless ratio that describes how efficiently power is transmitted through the cable assembly. A lower VSWR value indicates better performance at a given frequency. VSWR is easily derived from Return Loss.

$$\text{VSWR} = \frac{10^{\left[\frac{\text{Return Loss}}{20}\right]} + 1}{10^{\left[\frac{\text{Return Loss}}{20}\right]} - 1}$$

Insertion Loss - The loss of signal power (gain) resulting from the insertion of a device in a transmission line. Insertion loss can be derived from the power transmitted to the load before the insertion of the component PT and the power transmitted to the load after the insertion of the component PR_R.

$$Insertion\ Loss\ (\text{dB}) = 10 \log_{10} \frac{P_T}{P_R}$$

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USA:	+1 (800) 522-6752
Canada:	+1 (905) 475-6222
Mexico:	+52 (0) 55-1106-0800
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