

## CSE-SGAM-ccc-SGAM SMA Plug to SMA Plug Cable Assembly

The CSE-SGAM-ccc-SGAM cable assembly provides SMA plug (male pin) connection with the option of 152 mm, 305 mm or 610 mm (6 in, 12 in, 24 in) lengths of RG-316/U coaxial cable.

Operating from 0 GHz to 8 GHz, the CSE-SGAM-ccc-SGAM cable assembly combines superior performance, compact size, and convenient threaded mating interfaces to provide a reliable, easy-to-use connector. 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 to 8 GHz operation
- RG-316/U 50 Ω coaxial cable
- SMA plug (male pin)
  - Gold plating

### Applications

- LPWA
  - LoRaWAN®, Sigfox®, WiFi HaLow™ (802.11ah)
- 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		
Coax Cable Length	152 mm	305 mm	610 mm
Insertion Loss (dB max)	0.85	1.12	2.13
VSWR (max)	1.5	1.4	1.3
Impedance	50 Ω		
Insulation Resistance	500 MΩ min.		

### Ordering Information

Part Number	Description
<b>CSE-SGAM-152-SGAM</b>	SMA plug (male pin) to SMA plug (male pin) on 152 mm (6 in) of RG-316/U coaxial cable
<b>CSE-SGAM-305-SGAM</b>	SMA plug (male pin) to SMA plug (male pin) on 305 mm (12 in) of RG-316/U coaxial cable
<b>CSE-SGAM-610-SGAM</b>	SMA plug (male pin) to SMA plug (male pin) on 610 mm (24 in) of RG-316/U coaxial cable

Available from Linx Technologies and select distributors and representatives.

Product Dimensions

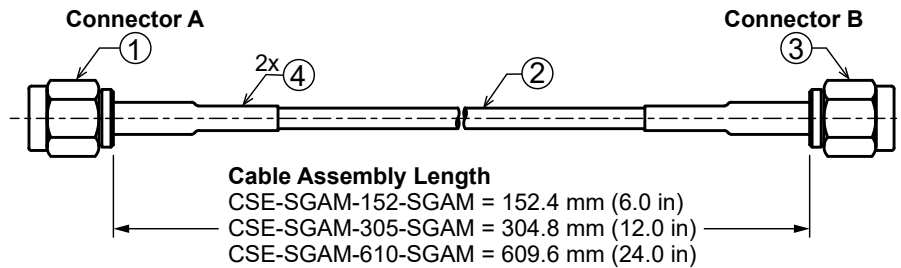


Figure 1. Product Dimensions for the CSE-SGAM-ccc-SGAM Cable Assembly

Table 2. Cable Assembly Components

Item #	Description	Material	Finish
1	Connector, SMA plug (male pin)	Brass	Gold
2	RG-316/U coaxial cable	RG-316/U	-
3	Connector, SMA plug (male pin)	Brass	Gold
4	Heat Shrink Tubing	PTFE	Black

Table 3. Cable Assembly Mechanical Specifications

Parameter	Connector A SMA Plug (male pin)	Connector B SMA Plug (male pin)
Fastening Type	1/4"-36UNS-2B threaded coupling	1/4"-36UNS-2B threaded coupling
Recommended Torque	0.9 N m (8.0 in lbs)	0.9 N m (8.0 in lbs)
Coupling Nut Retention	60 lbs. min.	60 lbs. min.
Connector Durability	500 cycles min.	500 cycles min.
Weight	CSE-SGAM-152-SGAM = 8.4 g (0.30 oz) CSE-SGAM-305-SGAM = 10.7 g (0.38 oz) CSE-SGAM-610-SGAM = 15.1 g (0.53 oz)	

Coaxial Cable Specifications

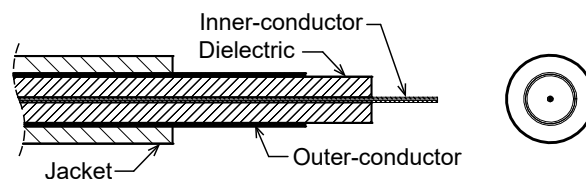


Figure 2. Coaxial Cable Cutaway Diagram

Table 4. Coaxial Cable Material Specifications for RG-316/U

RG-316/U Coax	Material	Dimensions
Inner-Conductor	Copper plated steel, 7 strand, 0.175 mm/conductor	Ø0.53 mm (0.020 in)
Dielectric	PTFE	Ø1.53 mm (0.06 in)
Outer-Conductor	Silver plated copper braid, Coverage 92.3%	Ø1.71 mm (0.067 in)
Jacket	FEP	Ø2.53 mm (0.100 in)

Table 5. Coaxial Cable Electrical and Physical Specifications for RG-316/U

Parameter	Value		
Rated Temp Voltage	105 °C 30 V		
Conductor Resistance	281 Ω/km 20 °C		
Insulation Resistance	3000 M Ω-km min.		
Dielectric Strength	AC 1000 V/Minute		
Spark Test	2.0 kV		
Insulation	Unaged	Tensile Strength	2500 psi min. (1.76 kg/mm <sup>2</sup> )
		Elongation	200% min.
	Aged	Tensile Strength	Unaged min. 75% (168 hrs x 232 °C)
		Elongation	Unaged min. 75% (168 hrs x 232 °C)
Jacket	Unaged	Tensile Strength	2500 psi min. (1.76 kg/mm <sup>2</sup> )
		Elongation	200% min.
	Aged	Tensile Strength	Unaged min. 75% (168 hrs x 232 °C)
		Elongation	Unaged min. 75% (168 hrs x 232 °C)
Nominal Impedance	50 ± 3 Ω		
Nominal Capacitance	95.8 pF/m		
Nominal Velocity of Propagation	69.5%		
VSWR (0 to 6 GHz)	≤ 1.3		
Minimum Inside Bend radius	25.4 mm (1.0 in)		

### Cable Assembly Performance

Table 6 shows insertion loss and VSWR values for the CSE-SGAM-ccc-SGAM cable assemblies at commonly used frequencies.

Insertion loss is the loss of signal power (gain) resulting from the insertion of a device in a transmission line. VSWR describes how efficiently power is transmitted through the cable assembly. A lower VSWR value indicates better performance at a given frequency.

Table 6. Insertion Loss and VSWR for the CSE-SGAM-ccc-SGAM Cable Assemblies

Band	Low-Band Cellular/ ISM/LPWA	GNSS	Midband Cellular	WiFi/ISM
Frequency Range	400 MHz to 960 MHz	1.164 GHz to 5 GHz	2.4 GHz	5 GHz to 7.125 GHz
<b>CSE-SGAM-152-SGAM</b>				
Insertion Loss (dB max)	0.16	0.43	0.29	0.84
VSWR (max)	1.0	1.1	1.0	1.4
<b>CSE-SGAM-305-SGAM</b>				
Insertion Loss (dB max)	0.28	0.74	0.48	1.12
VSWR (max)	1.0	1.2	1.1	1.3
<b>CSE-SGAM-610-SGAM</b>				
Insertion Loss (dB max)	0.53	1.40	0.91	2.02
VSWR (max)	1.0	1.1	1.1	1.2

### Packaging Information

The CSE-SGAM-ccc-SGAM cable assembly is packaged in a clear plastic bag, in quantities of 50 pcs. Distribution channels may offer alternative packaging options.

---

**Website:** <http://linxtechnologies.com>  
**Linx Offices:** 159 Ort Lane, Merlin, OR, US 97532  
**Phone:** +1 (541) 471-6256  
**E-MAIL:** [info@linxtechnologies.com](mailto:info@linxtechnologies.com)

---

Linx Technologies reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

Wireless Made Simple is a registered trademark of Linx Acquisitions LLC. Bluetooth is a registered trademark of Bluetooth SIG, Inc. LoRaWAN is a registered trademark of Semtech Corporation. Sigfox is a registered trademark of SIGFOX. ZigBee is a registered trademark of ZigBee Alliance, Inc. Other product and brand names may be trademarks or registered trademarks of their respective owners.

Copyright © 2021 Linx Technologies

All Rights Reserved

Doc# DS21174-162CON

