



## 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 Hz 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 Hz to 8 GHz operation
- RG-316/U 50  $\Omega$  coaxial cable
- SMA plug (male pin)
  - Gold plating

#### APPLICATIONS

- LPWA
  - LoRaWAN<sup>®</sup>, Sigfox<sup>®</sup>, WiFi HaLow<sup>™</sup> (802.11ah)
- Cellular IoT - LTE-M (Cat-M1), NB-IoT
- Cellular - 5G/4G LTE/3G/2G
- PC, LAN
- ISM - Bluetooth<sup>®</sup>, ZigBee<sup>®</sup>
- GNSS - GPS, Galileo, 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 $\Omega$		
Insulation Resistance	500 M $\Omega$ min.		

## ORDERING INFORMATION

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

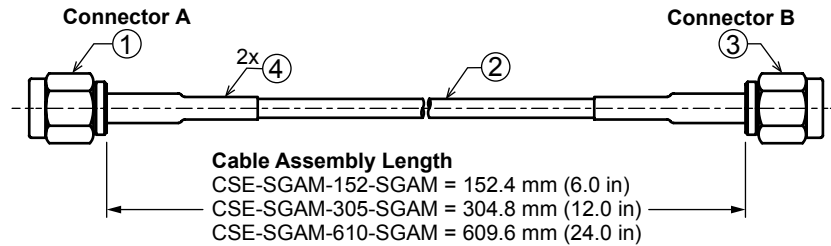


Figure 1. Product Dimensions for the CSE-SGAM-ccc-SGAM Cable Assembly

## 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

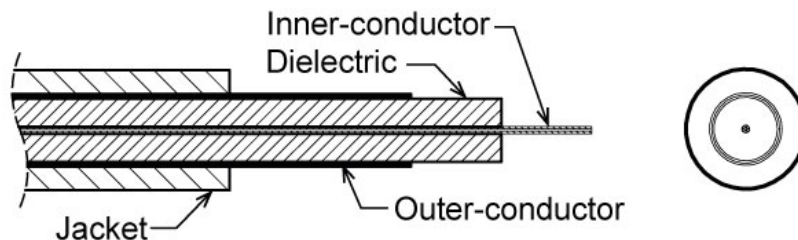


Figure 2. Coaxial Cable Cutaway Diagram

**TABLE 4. COAXIAL CABLE MATERIAL SPECIFICATIONS FOR RG-316/U**

Parameter	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.

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
CSE-SGAM-152-SGAM				
Insertion Loss (dB max)	0.16	0.43	0.29	0.84
VSWR (max)	1.0	1.1	1.0	1.4
CSE-SGAM-305-SGAM				
Insertion Loss (dB max)	0.28	0.74	0.48	1.12
VSWR (max)	1.0	1.2	1.1	1.3
CSE-SGAM-610-SGAM				
Insertion Loss (dB max)	0.53	1.40	0.91	2.02
VSWR (max)	1.0	1.1	1.1	1.2

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## PACKAGING INFORMATION

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

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