



# GORE® Spaceflight

MICROWAVE/RF ASSEMBLIES

High-Frequency  
Cable Assemblies for  
Ka band Frequencies

## Proven Performance and Reliability for 32 GHz Spaceflight Applications

With superior radio frequency performance at 32 GHz, the Type 5G Series of GORE® Spaceflight Microwave/RF Assemblies are optimized for Ka band uplink and downlink applications. These cable assemblies have been qualified for spaceflight applications in three separate phases — integration, launch, and in-orbit — to ensure consistently reliable performance for the duration of the mission.

Unlike the standard bifurcated contact used in test connectors, the robust connectors of the Type 5G Series withstand the vibration of launch and orbit without compromising signal performance. In addition, the low-profile of these connectors increases flexibility during the layout process of satellite design.

### GENERAL SPECIFICATIONS\*

Property	Value
Frequency Range	DC – 32 GHz
Optimized Frequencies	17.5 GHz – 22 GHz 27 GHz – 32 GHz
Impedance	50 ±1 ohms

### CABLE SPECIFICATIONS

Property	Value
Cable Part Number	5G
Cable Outer Diameter (nom)	0.170 in (4.3 mm)
Mass (nominal)	13 g/ft (42 g/m)
Minimum Bend Radius	1.0 in (25.4 mm)
Center Conductor	Silver-plated copper wire, solid
Dielectric	Expanded PTFE (ePTFE), tape wrapped
Electrical Shield	Silver-plated flat copper wire, helically-wrapped
Mechanical Braid	Silver-plated round copper wire, braided
Jacket	Extruded DuPont™ ETFE fluoropolymer, black



### Benefits of GORE® Spaceflight Microwave/RF Assemblies for Ka band Frequencies

- Reliable signal integrity with excellent insertion loss and return loss
- Outstanding shielding effectiveness from durable cable construction
- Increased flexibility in design layout with robust, low-profile connector solutions
- Proven performance from qualification in integration, launch, and in-orbit phases
- Global availability from United States and European manufacturing facilities

### ELECTRICAL SPECIFICATIONS\*

Property	Value
Insertion Loss	
Straight to Straight	-1.07 dB
Straight to Right-Angle	-1.24 dB
Return Loss	
Straight to Straight	-24 dB
Straight to Right-Angle	-19.5 dB
Shielding Effectiveness (per EIA-364-66A, mode-stirred method)	-101 dB
Dielectric Withstanding Voltage	500 VAC RMS minimum

\*Typical performance based on 23.6 in (600 mm) long qualification assemblies; DC to 32 GHz. Guaranteed figures available on request.



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## QUALIFICATION STATUS

Property	Value
Integration, Launch and In-Orbit Phases	Fully Qualified
Configurations	5GZMQZMQ & 5GZMQZQA Cable Assemblies
Temperature Range	-55°C to +155°C
Qualification Test Report No.	ET-12036

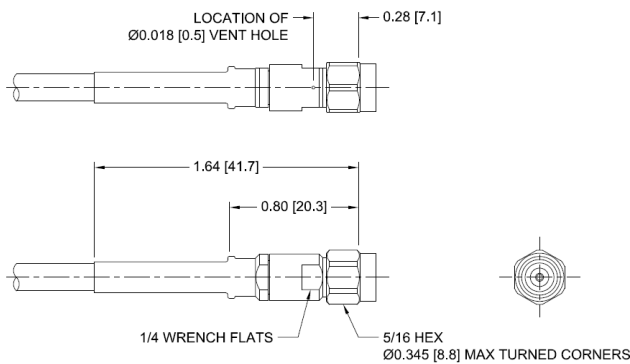
## ORDERING INFORMATION

The Type 5G Series of GORE® Spaceflight Microwave/RF Assemblies can be terminated with either 2.92 mm straight-pin connectors (ZMQ) or 2.92 mm right-angle pin connectors (ZQA). Please contact Gore for assistance.

### STRAIGHT-PIN CONNECTOR — ZMQ

2.92 mm / Mass 5 g

Connector Part	Material
Body	Stainless steel, passivated
Center Contact	Beryllium copper, gold plated
Insulators	Polyetherimide (PEI)
Coupling Nut	Stainless steel, passivated
Hat	Brass, gold plated
C-Ring	Beryllium copper

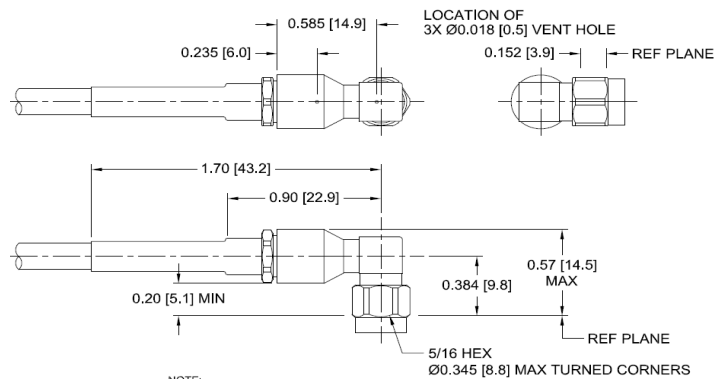


NOTE:  
SHEET 1 OF 1.  
ALL DIMENSIONS NOMINAL INCHES [MM] UNLESS OTHERWISE SPECIFIED.

### RIGHT-ANGLE PIN CONNECTOR — ZQA

2.92 mm / Mass 9 g

Connector Part	Material
Body	Stainless steel, passivated
Center Contact	Beryllium copper, gold plated
Insulators	Polyetherimide (PEI)
Coupling Nut	Stainless steel, passivated
Retaining Nut	Stainless steel, passivated
Hat	Beryllium copper, gold plated
C-Ring	Beryllium copper



NOTE:  
SHEET 1 OF 1.  
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**NOTICE — USE RESTRICTIONS APPLY**  
Not for use in food, drug, cosmetic or medical device manufacturing, processing, or packaging operations.

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