



# Space Qualified Antennas

CLOSED & OPEN BOUNDARY QUAD-RIDGE HORNS



## SOLUTION FOR

- **LEO / MEO / GEO Payloads**
- **Satellite-to-Satellite Link**
  - Inter-satellite connectivity
  - Crosslinking across constellation
- **Space-Ground Link**
  - Capturing signals of interest
  - Communicating with ground systems
- **Satellite Reflector Feed**
  - Mounting easily on reflectors
  - Supporting high gain applications

## PRODUCT CONFIGURATION

### Equipment

- Mounting flange
- Integrated coaxial transition with high precision connector

### Related services

- Calibration
- Maintenance
- Customization

## MAIN FEATURES

### Technical performance

- **Wideband Frequency Coverage:** Supporting a range of applications with flexible performance across multiple bands
- **Dual Polarization:** Enhancing versatility and signal clarity
- **Outstanding RF Performance:** Delivering stable and repeatable results critical for mission success

### Design

- **Monolithic design:** Minimizes connections and moving parts for improved durability during launch vibrations
- **Lightweight construction:** Helps achieve mission payload weight targets without compromising functionality
- **Off-the-shelf solution:** Streamlines procurement with pre-designed, ready-to-deploy solutions
- **Scalable design:** Frequency bands and mechanical interface customizable upon request

### Space Qualification

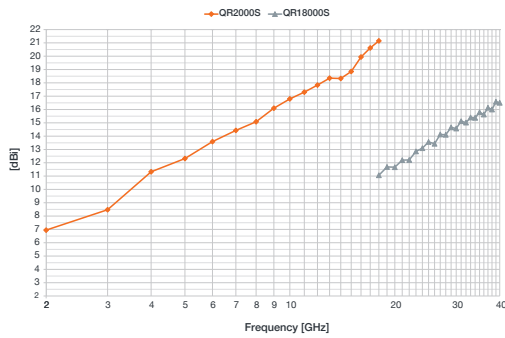
- RF performance testing for optimal signal integrity
- Mechanical and vibrational testing to withstand the harsh conditions of launch
- Thermal qualification for extreme temperature variation
- Outgassing tests to ensure compliance with space environmental requirements

# Electrical characteristics

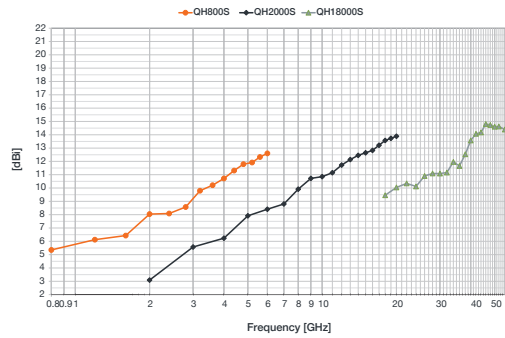
Type of antenna	CLOSED BOUNDARY QUAD-RIDGE HORN		OPEN BOUNDARY QUAD-RIDGE HORN		
Part number	QR2000S	QR18000S	QH800S	QH2000S	QH18000S
Frequency range	2 – 18 GHz	18 – 40 GHz	0.8 – 6 GHz	2 – 20 GHz	18 – 55 GHz
Polarization	Dual linear	Dual linear	Dual linear	Dual linear	Dual linear
Gain	7 – 21 dBi	11 – 16 dBi	5 – 13 dBi	3 – 14 dBi	9 – 15 dBi
Return loss	< -10 dB	< -10 dB	> 10 dB	> 10 dB	> 10 dB
Port-to-port isolation	> 30 dB	> 10 dB	> 35 dB	> 35 dB	> 35 dB (avg) > 25 dB (wcs)
Cross-polar discrimination	> 25 dB	> 37 dB	> 30 dB	> 30 dB	> 30 dB (avg) > 25 dB (wcs)
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms

## BORESIGHT REALIZED GAIN

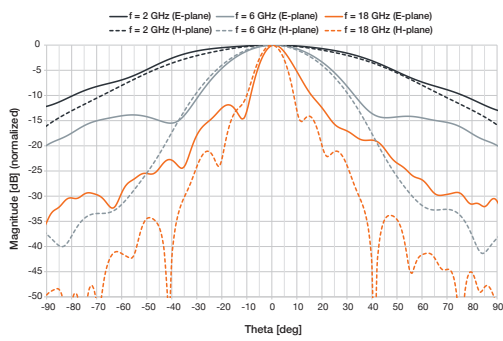
Closed boundary quad-ridge horn



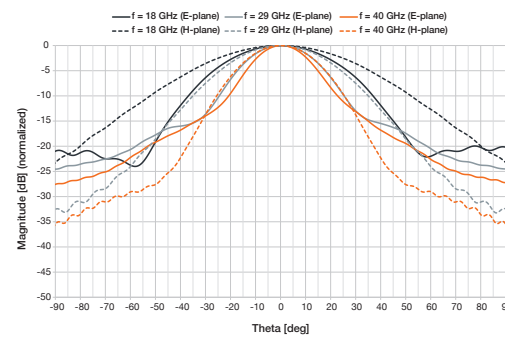
Open boundary quad-ridge horn



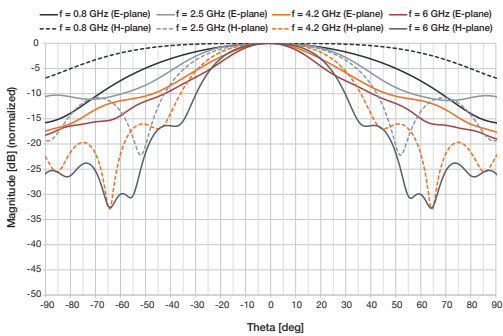
QR2000S radiation pattern



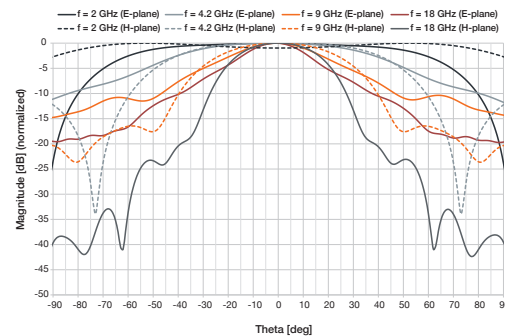
QR18000S radiation pattern



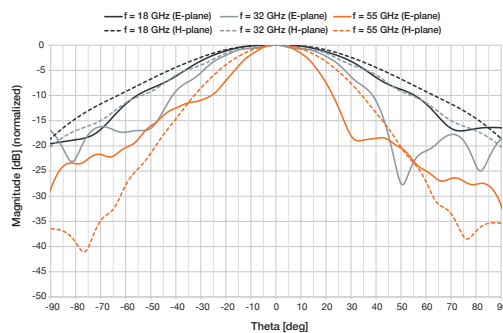
QH800S radiation pattern



QH2000S radiation pattern



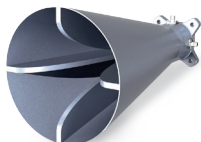
QH18000S radiation pattern



## Mechanical characteristics

Type of antenna	CLOSED BOUNDARY QUAD-RIDGE HORN		OPEN BOUNDARY QUAD-RIDGE HORN		
Part number	QR2000S	QR18000S	QH800S	QH2000S	QH18000S
Dimensions [mm] (H x W x L)	122 x 122 x 256	65 x 65 x 85	264 x 264 x 242	105 x 105 x 110	80 x 80 x 50
Weight (approx.)	0.8 Kg	0.2 Kg	0.9 Kg	0.2 Kg	0.2 Kg
RF connector	SMA female	2.92 mm female (2.4 mm female optional)	SMA female	SMA female	1.85 mm female
Material	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy	Aluminum alloy

### CLOSED BOUNDARY QUAD-RIDGE HORN

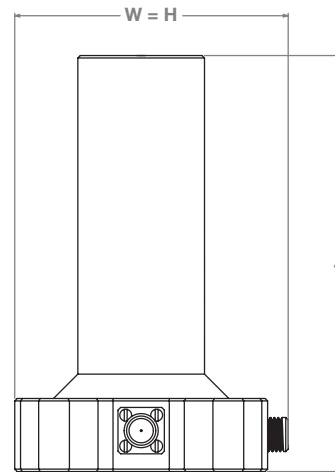
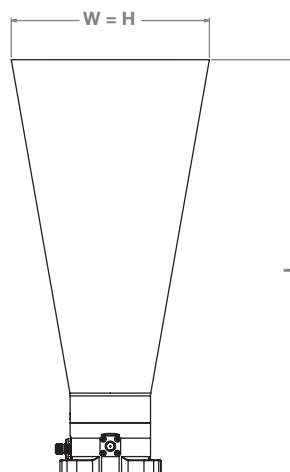


QR2000S



QR18000S

Dimensional drawing



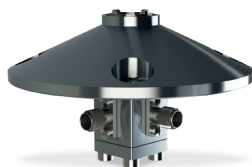
### OPEN BOUNDARY QUAD-RIDGE HORN



QH800S

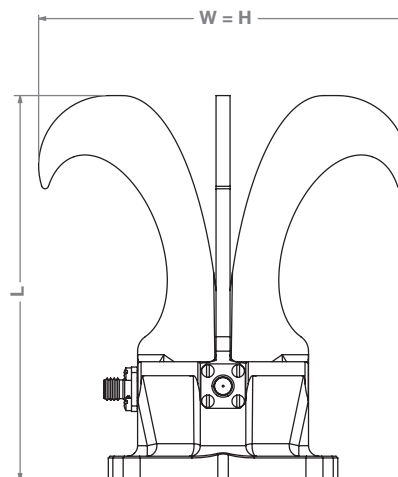
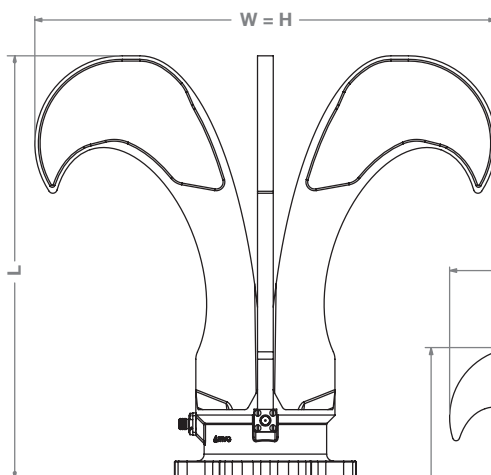


QH2000S



QH18000S

Dimensional drawing



## Testing Connectivity for a Wireless World

The Microwave Vision Group offers cutting-edge technologies for the visualization of electromagnetic waves. With advanced test solutions for antenna characterization, radar signature evaluation and electromagnetic measurements, we support company R&D teams in their drive to innovate and boost product development.



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