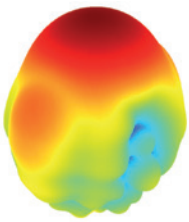
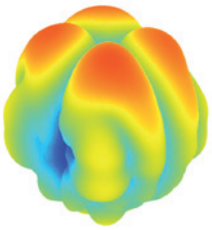
Closed Boundary Quad-Ridge Horns

Typical 3D co-polarization radiation pattern



Typical 3D cross-polarization radiation pattern



SOLUTION FOR

- **Gain reference for medium/high gain antennas**
- **Wideband probes for far-field test ranges**
- **Illumination of reflector antennas**
- **Quasi-monostatic radar cross section (RCS) measurements**

Main features

Technical performance

- Smooth gain with frequency
- Dual linear polarization with high polarization purity and isolation
- Low return loss / VSWR
- Wide bandwidth

Design

- Well-defined smooth radiation pattern throughout the operational bandwidth
- Minimum number of coupled parts to maximize mechanical accuracy
- Lightweight for easy handling

Surface treatment

- Alodine 1200 according to MIL-C 5541E class 3
- Polyurethane paint

Repeatability

- Stiff and robust mechanical design
- Standard MVG circular interface for precision centering
- Precision pins for accurate polarization alignment
- Precision machined
- High reliability coaxial connectors

Delivered documents

- Typical performance data (TYMEDA™)
- Measured return loss data and port-to-port coupling

Product configuration

Equipment

- ■ Mounting flange
- ■ Integrated coaxial transition with high precision connector
- □ Circular polarization available with external hybrid coupler

Related services

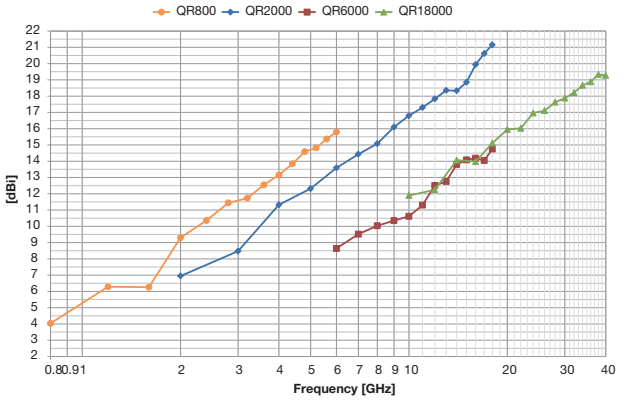
- □ Calibration and maintenance
- □ Customization

■ Included □ Optional

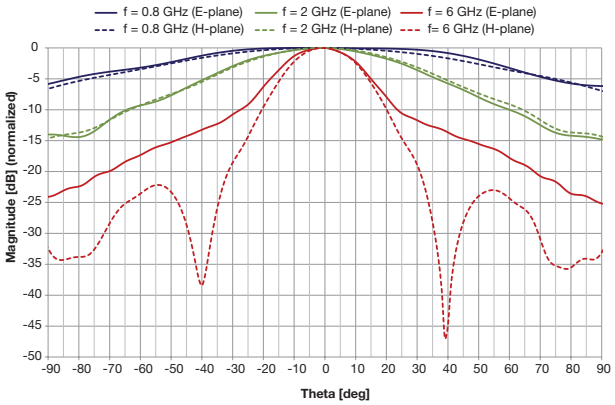
Electrical characteristics

Part number	QR800	QR2000	QR6000	QR18000
Type of antenna	Closed boundary quad-ridge horn	Closed boundary quad-ridge horn	Closed boundary quad-ridge horn	Closed boundary quad-ridge horn
Frequency range	0.8 – 6 GHz	2 – 18 GHz	6 – 18 GHz	10 – 40 GHz
Polarization	Dual linear	Dual linear	Dual linear	Dual linear
Gain	4 – 16 dBi	7 – 21 dBi	9 – 15 dBi	12 – 19 dBi
VSWR	< 1.9	< 1.9	< 1.9	< 1.9
Return loss	< -10 dB	< -10 dB	< -10 dB	< -10 dB
Port to port isolation	> 40 dB	> 30 dB	> 40 dB	> 35 dB
Cross-polar discrimination	> 30 dB	> 25 dB	> 30 dB	> 30 dB
Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms

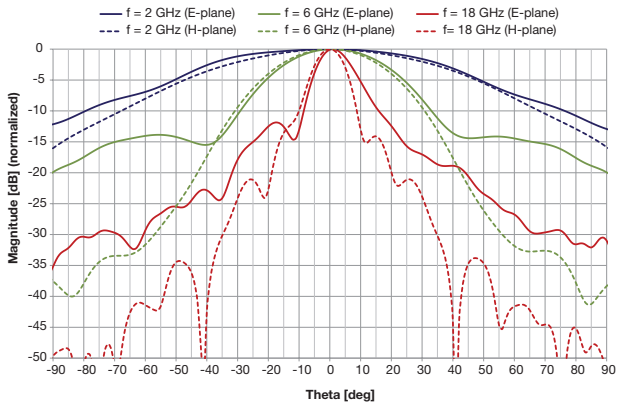
Boresight realized gain



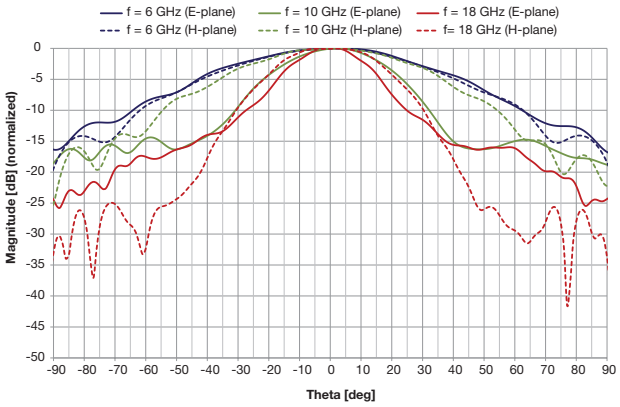
QR800 radiation pattern



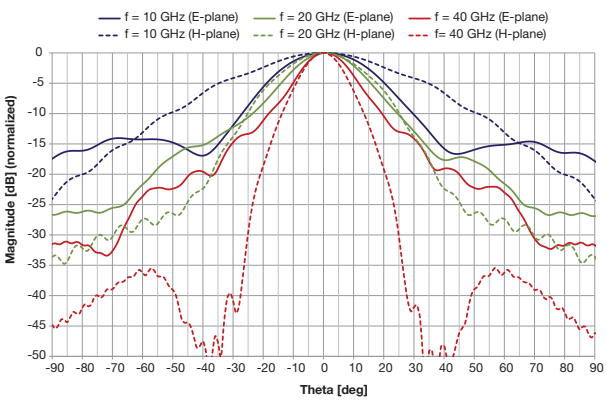
QR2000 radiation pattern



QR6000 radiation pattern



QR18000 radiation pattern

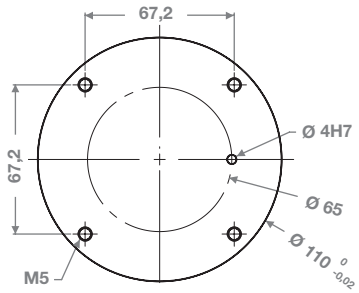


Mechanical characteristics

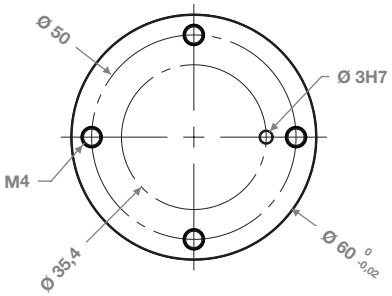
Part number	QR800	QR2000	QR6000	QR18000
Dimensions [mm] (H x W x L)	194.5 x 194.5 x 302.4	125 x 125 x 257.4	47 x 47 x 151	48 x 48 x 134.7
Weight (approx.)	2.3 Kg	1.3 Kg	0.25 Kg	0.2 Kg
RF connector	PC 3.5 Female(1)	PC 3.5 Female(1)	PC 3.5 Female(1)	K Female(2)
Material	Aluminum	Aluminum	Aluminum	Aluminum
Treatment	Alodine 1200(3)	Alodine 1200(3)	Alodine 1200(3)	Alodine 1200(3)
Interface	Circular Ø 110 mm	Circular Ø 60 mm	Circular Ø 60 mm	Circular Ø 60 mm

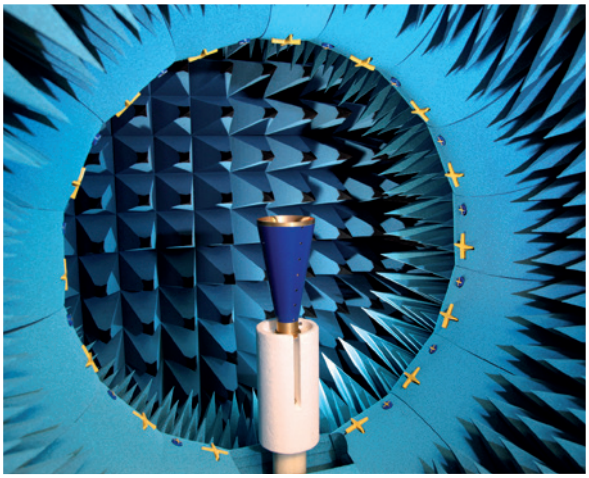
(1) Huber & Suhner type 23 PC35-50-0-51/199 UE
(2) SWMI type 1012-16SF
(3) Equivalent to MIL-C 5541E class 3

Circular Ø 110 mm interface



Circular Ø 60 mm interface





Dimensional drawing