QR2000 mobile quad rage Transmit Antenna

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Question four: directional antenna information

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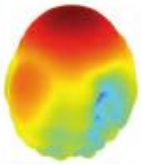
Good afternoon,

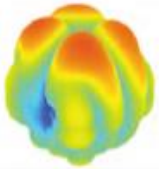
the QR 2000 quad Ridge antenna is utilized as the transmit antenna for this mobile station. It is positioned 20 feet in front of test aircraft in a zero alignment configuration that is not dependent upon true North. This unit is utilized to illuminate the zero-line access of our test aircraft.

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

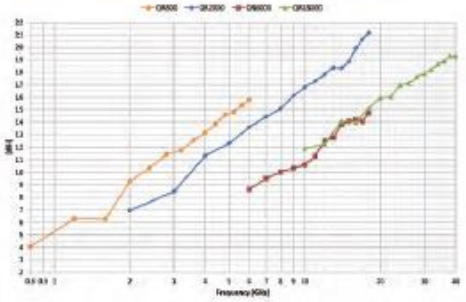
- □ Calibration and maintenance
- □ Customization

■ Included □ Optional

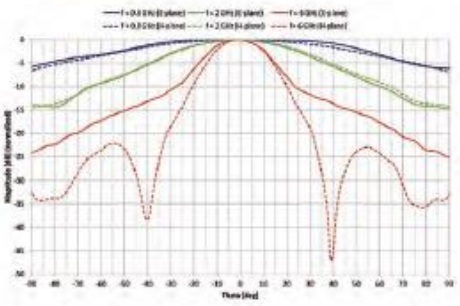
Electrical characteristics

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

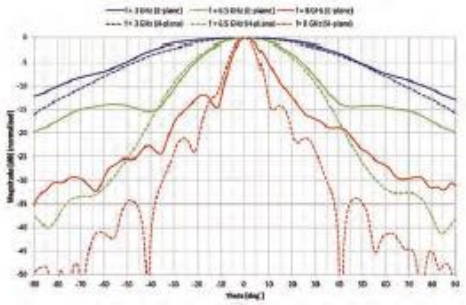
Boresight realized gain



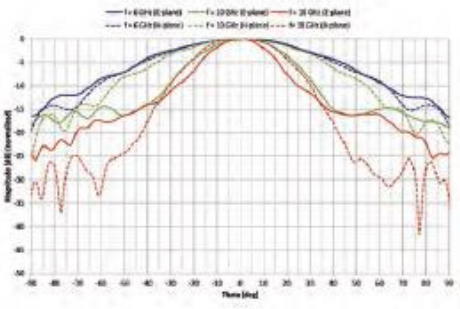
QR800 radiation pattern



QR2000 radiation pattern



QR6000 radiation pattern



QR18000 radiation pattern