



G.21 Hercules

Penta-band GSM (GSM / CDMA / PCS / DCS/ WCDMA/ UMTS)

Low Profile Heavy Duty Screw-mount Antenna



The G.21 Hercules is a high performance thread mount Quad-band GSM antenna for external use on vehicles and outdoor assets worldwide. Omni-directional high gain across all bands ensures constant reception and transmission. Durable UV resistant PVC housing is resistant to vandalism and direct attack. At only 29mm high it complies with the latest EU height restrictions directives for roof-mounted objects, whilst also enabling covert operation with a diameter of 52mm.

Features

Cellular

- Penta-band GSM Worldwide use
- Miniaturized Height 29mm Diameter 52mm

Other

- Quality textured covert design. Low profile
- UV and Vandal resistant PVC housing
- IP-65 Standard - Protected against low pressure jets if water from all directions - limited ingress permitted
- Convenient integrated cable routing system
- Thick nickel plated steel thread – 18mm Diameter
- Optional cables and connectors
- ROHS Compliant



Specification

1.0 Specification

Electrical					
	AMPS	GSM	PCS	DCS	3G
Band (MHz)	824-896	880-960	1850-1990	1710-1880	1920 –2170
Return Loss	-8.8 dB	-10 dB	-10 dB	-11 dB	-12 dB
Polarization	Linear				
Impedance	50 ohms				
Input Power	10 watts				
Input Connection	Coaxial Cable - RG174 Standard, Fully customizable				
VSWR (Min performance)	<2.0:1				

MECHANICAL	
Dimensions (L x W)	Height 29mm x Diameter 52mm
Casing	UV Resistant PVC
Base and Thread	Nickel plated steel
Thread Diameter	18mm
Weather proof gasket	Rubber
Sealant	Silicon Cure

ENVIRONMENTAL	
Waterproof	IP-65
	Protected against low pressure jets if water from all directions - limited ingress permitted
Corrosion	5% NaCl for 96hrs - Nickel plated steel base and thread
Temperature Range	-40°C to +85°C
Thermal Shock	100 cycles -40°C to +80°C
Humidity	Non-condensing 65°C 95% RH
Shock (Drop Test)	1m drop on concrete 6 axes
Cable Pull	8 KGf
Recommended Torque Setting for Mounting	70lb/foot
Maximum Torque Setting for Mounting	100lb/foot

***note: specifications may be subject to change**



2.0 Test results

Figure 1, shows the G.21 Hercules antenna in free space. Figure 2 and figure 3 shows the return loss and the VSWR of the G.21 Hercules Antenna in the frequency range of 550 MHz to 2500 MHz with different coaxial cable length in free space. We observe in figure 2 and 3 that if the coaxial cable is shorter the return loss and the VSWR will be degraded.

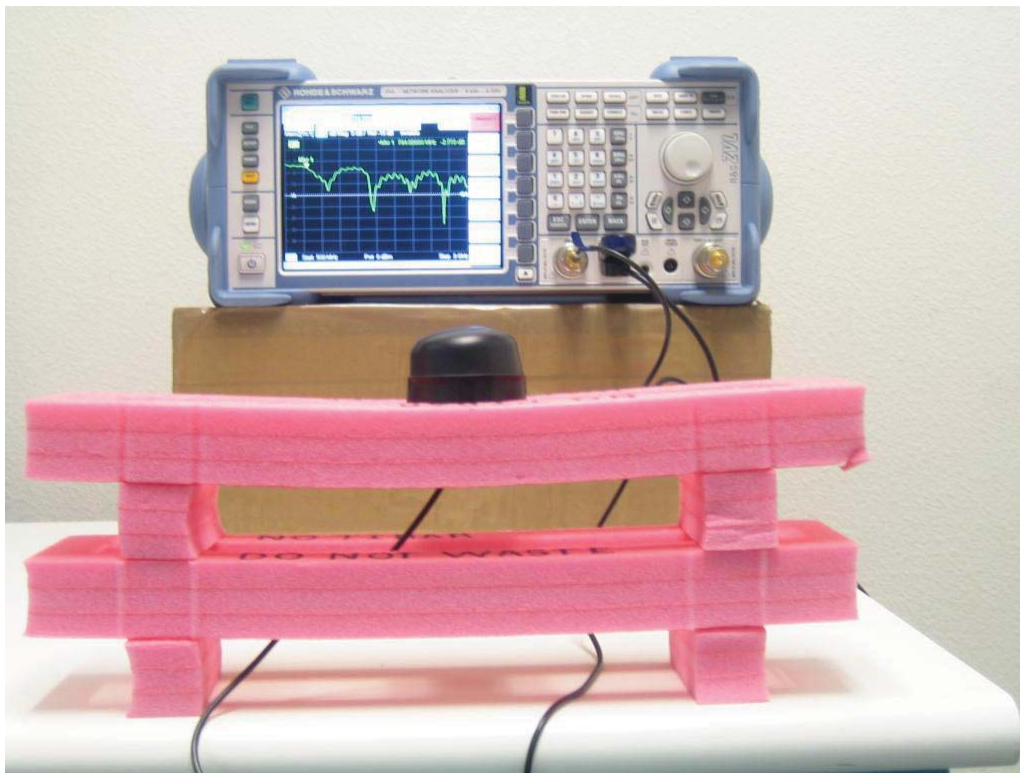


Figure 1. G.21 Hercules antenna in free space



2.1 Return Loss

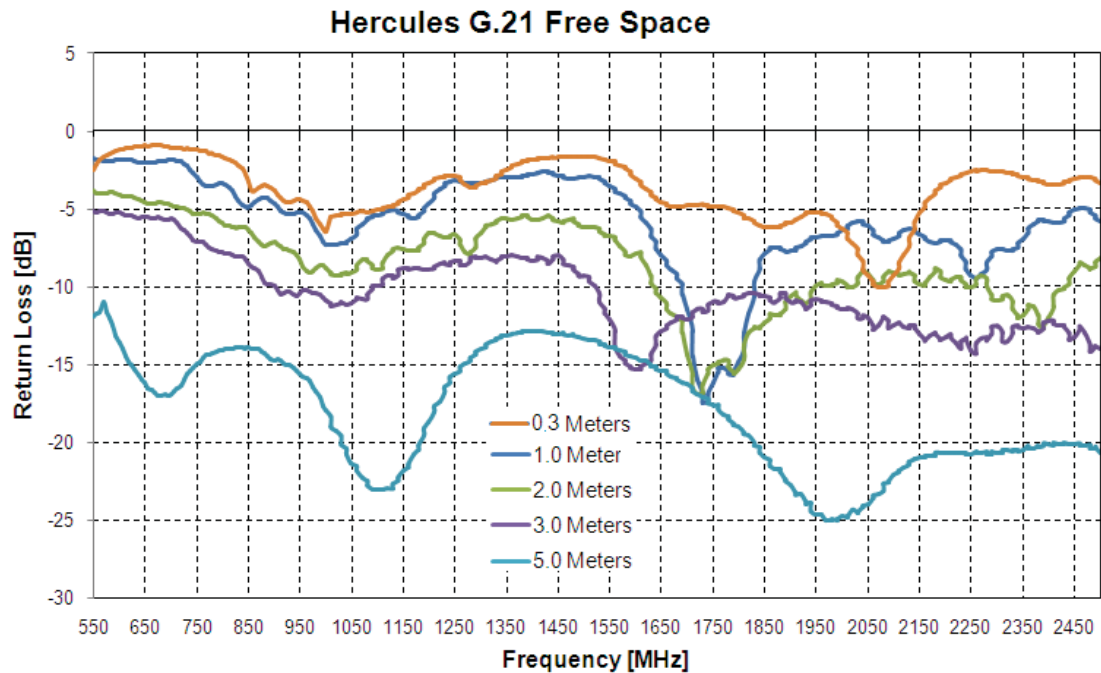


Figure 2. Return Loss of the G.21 Hercules antenna with different coaxial cable length in free space.

2.1 VSWR

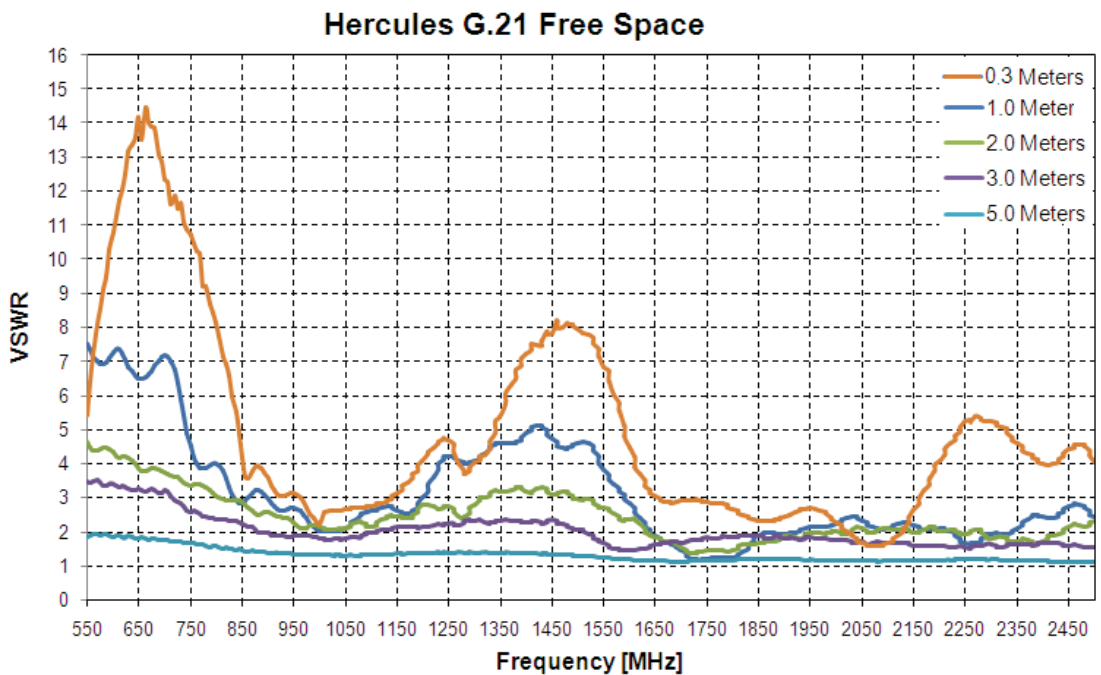
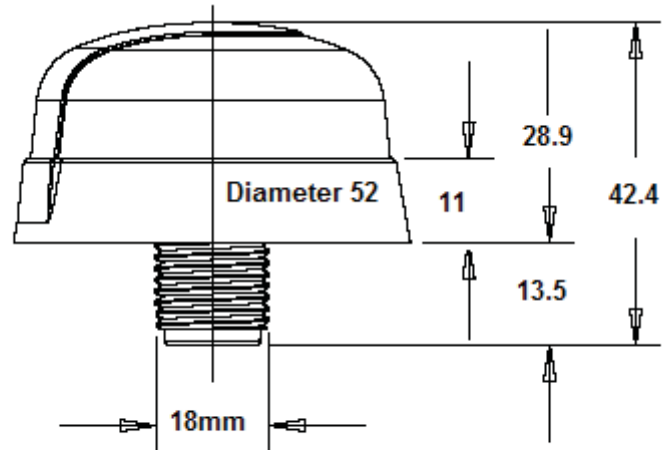


Figure 7. VSWR of the G.21 Hercules antenna with different coaxial cable length in free space.

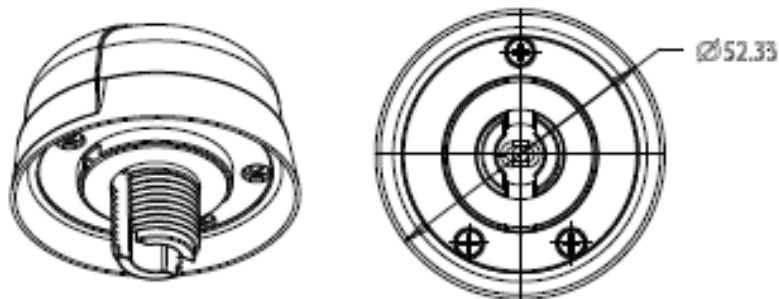


3.0 Outline Drawing

Outline Drawing



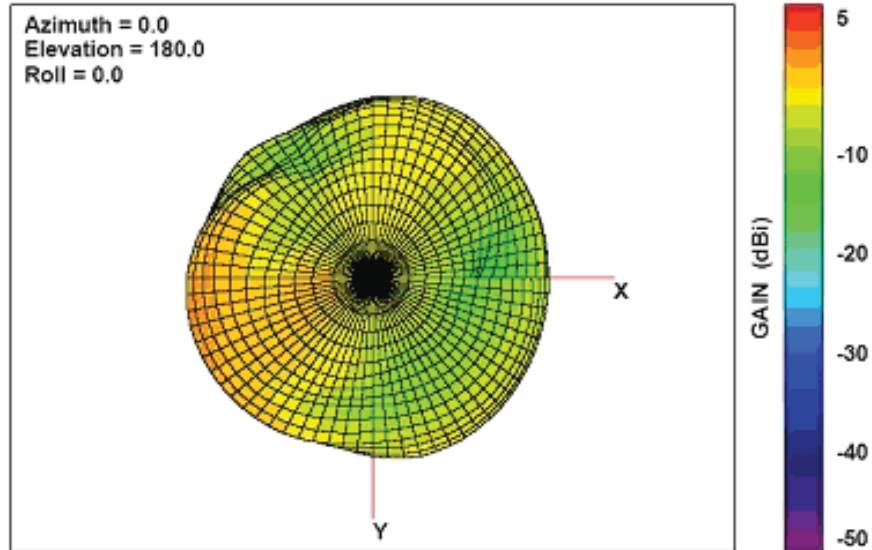
Note: unit cm unless specified





800 MHz – 3D Radiation Pattern

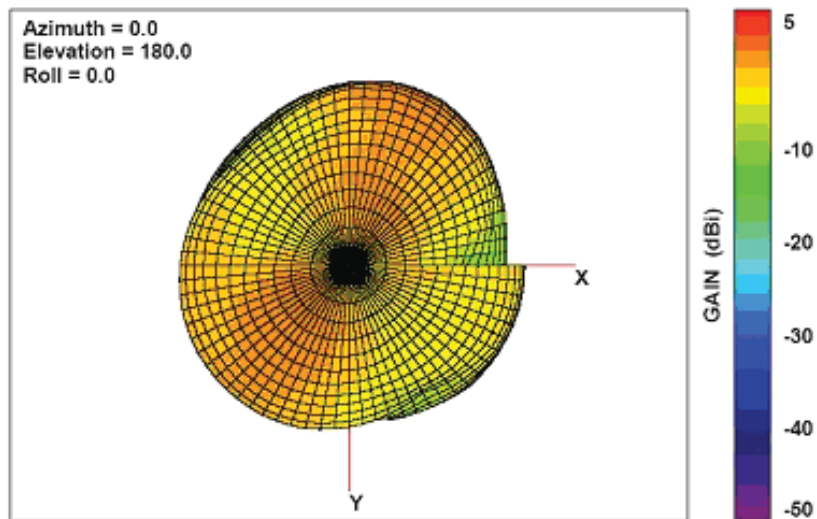
Total, Bottom View



Free-Space Total GAIN, Bottom View, ~paNodes [2] <dStartFreqMHz %-0.1f>> MHz

900 MHz – 3D Radiation Pattern

Total, Bottom View



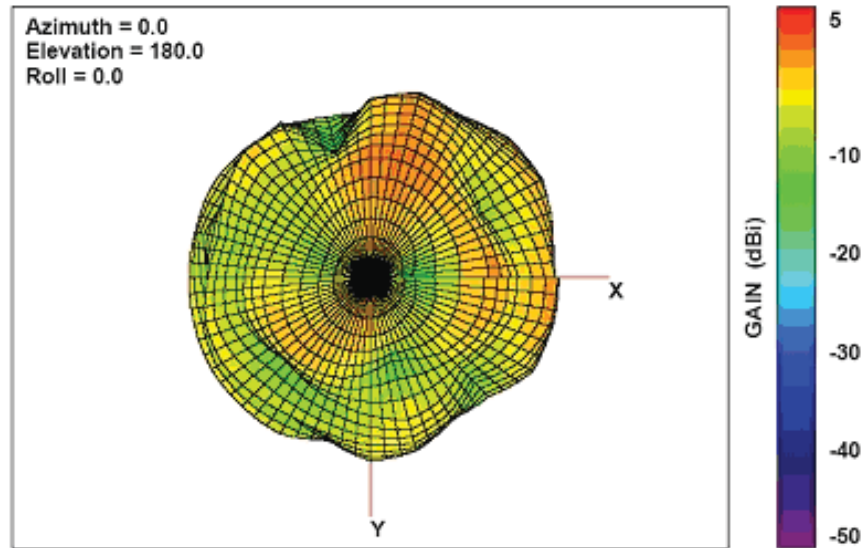
Free-Space Total GAIN, Bottom View, 900.0 MHz



Specification

1800 MHz – 3D Radiation Pattern

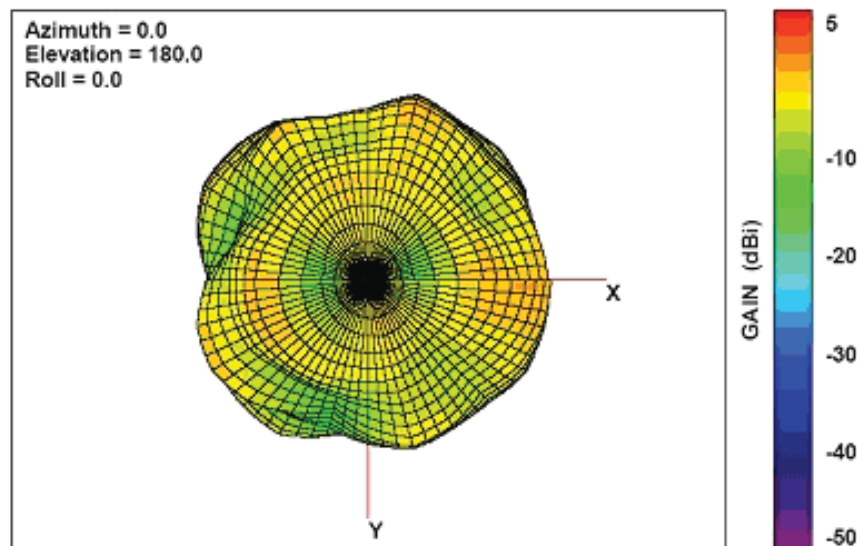
Total, Bottom View



Free-Space Total GAIN, Bottom View, 1800.0 MHz

1900 MHz – 3D Radiation Pattern

Total, Bottom View



Free-Space Total GAIN, Bottom View, 1900.0 MHz