



Specification

# SPECIFICATION

Part No.	:	<b>A.03.1001111</b>
Product Name	:	<b>40dB GPS Hercules Heavy Duty Screw Mount Antenna For long cable lengths above 5M</b>
Description	:	Three Stage 40dB Height 29mm Diameter 52mm
Applications	:	Location based services M2M Telematics Remote monitoring Timing for Base Stations Large vehicle fleet tracking





Specification

1.0 Scope

The **A.03** Hercules is a 40dB LNA high performance thread mount GPS antenna designed for external use on vehicles and outdoor assets where long cable lengths above 5 metres (15 feet) are used. Designed for heavy duty work with one piece C&C machined nickel steel base plate and threads, there are also convenient side slots for running cables laterally. Durable UV resistant ABS housing is resistant to vandalism and direct attack. At only 29mm high it complies with the latest EU directives for height restrictions, whilst also enabling covert operation with a diameter of 52mm.

Cable lengths, types and connectors are fully customizable.

For cable lengths below 5M please use our 28dB LNA **A.01** model.

2.0 Electrical Specifications

No.	Parameter	Specification
1	Frequency	1575.42MHz±2MHz
2	Dimensions	Height 29mm Diameter 52mm Thread Diameter 18mm
3	Impedance	50 ohm
4	VSWR	2.0 Max
5	Gain	LNA Gain 40dB typically Passive Gain at Zenith 5.0dB Gain at 10 o elevation : -1.0 dBi typ. Antenna Gain at 90 degrees 41.5 ± dBic
6	Axial ratio	3.0 dB max
7	Polarization	RHCP
8	Noise Figure	1.5 dB max.
9	Operating Temperature	-40°C ~ +90°C
10	Out Band Rejection	fo = 1575.42MHz fo ± 20 MHz 7dB Min. fo ± 30 MHz 12dB Min. fo ± 50 MHz 20dB Min. fo ± 100 MHz 30dB Min.
11	Storage Temperature	-40°C ~ +95°C
12	Cable/Connectors	Standard RG174 , ψ2.7 ± 0.2mm , Black Cable Loss -1.3dB per Meter Standard Cable Length 10M SMA Male Straight Connector

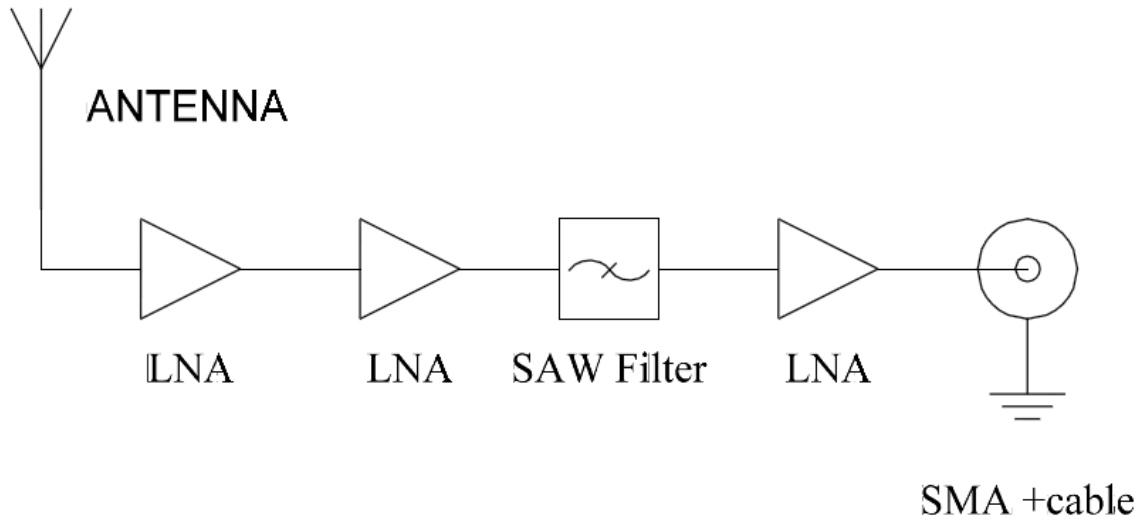


Specification

		Cables and Connectors Fully Customizable
13	Input Voltage	At 1.8V Max 8mA
		At 3.0V Max 10mA
		At 5.0V Max 12mA

3.0 LNA

LNA Functional Circuit



LNA Parameters

No.	Parameter	Specification
3.1	Frequency Range	1575.42 ± 10 MHz
3.2	Gain	Typ.34dB (At 1.8V) Typ.40dB Min.38dB (At 3V) Typ.40dB Min.38dB (At 5V)
3.3	Noise Figure	1.5dB Max. ( + 25 °C ± 5°C)
3.4	Output Impedance	50Ω
3.5	Outer Band Attenuation	F0=1575.42MHz F0±50MHz 20dB min F0±100MHz 25dB min
3.6	Output VSWR	Max 2.0

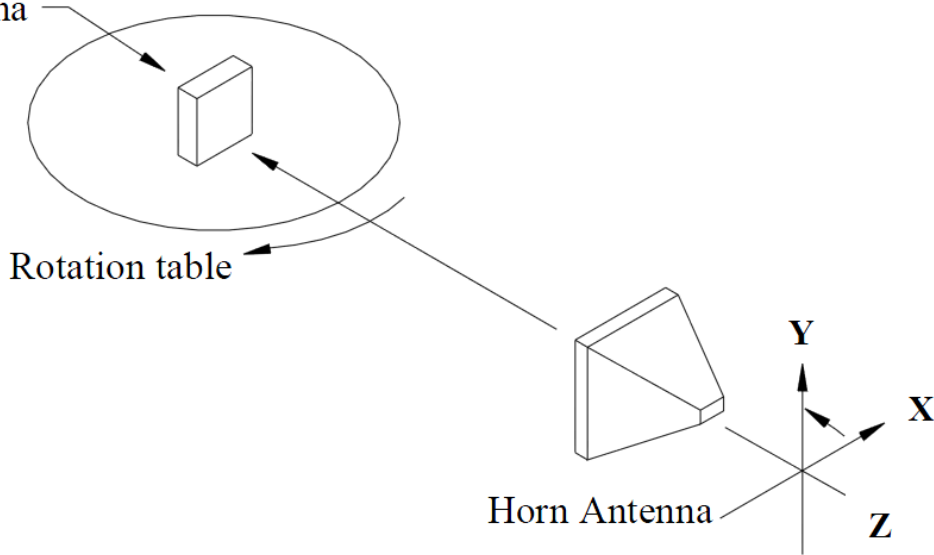


Specification

4.0 Radiation Patterns

Test Setup

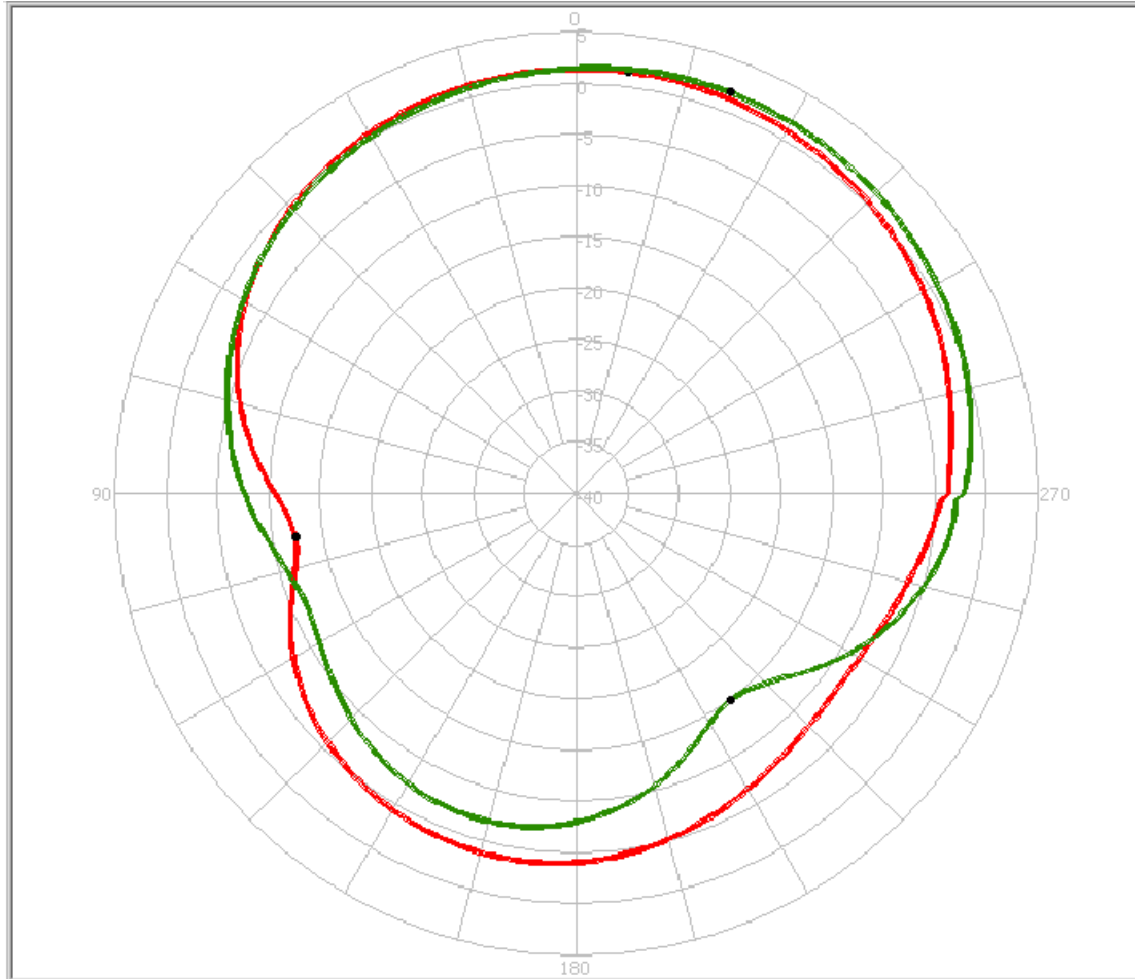
GPS Antenna



XZ and YZ Plane Cuts



Specification

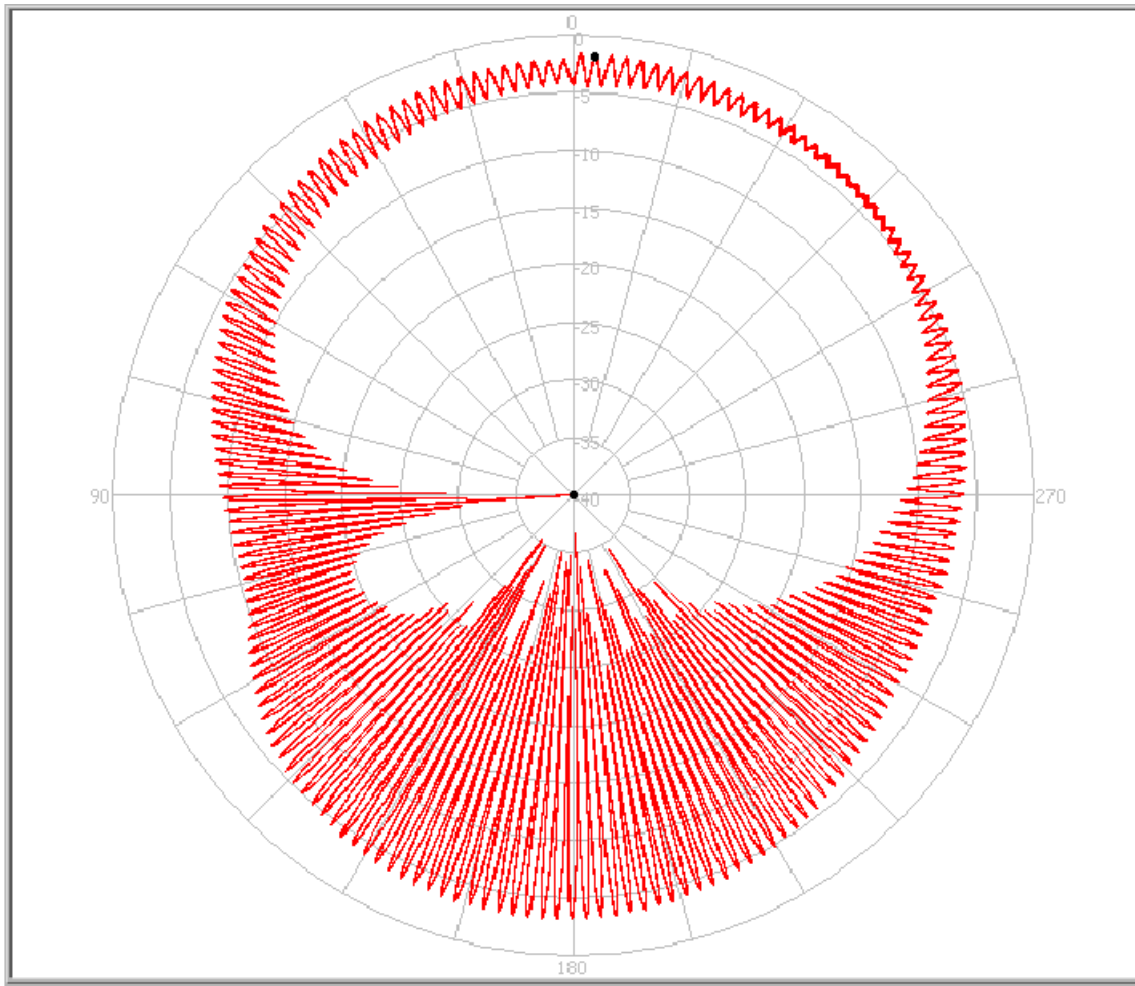


Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	<b>A-03</b>	XZ	1575.42	1.36 / 353.00	-12.30 / 99.00	-2.46	RHCP	2009/11/2
2	<b>A-03</b>	YZ	1575.42	1.81 / 339.00	-14.85 / 217.00	-2.35	RHCP	2009/11/2



Specification

Axial Ratio



Pattern	Model No.	Test Mode	Freq(MHz)	Max Gain(dBi)	Min Gain(dBi)	Avg. Gain(dBi)	Source Polar.	Date
1	<b>A-03</b>	Axial Ratio	1575.42	-1.80 / 357.09	-43.93 / 93.46	-6.27	CP	2009/11/2



Specification

5.0 Mechanical Specifications

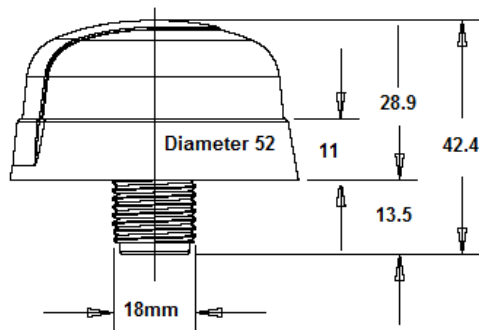
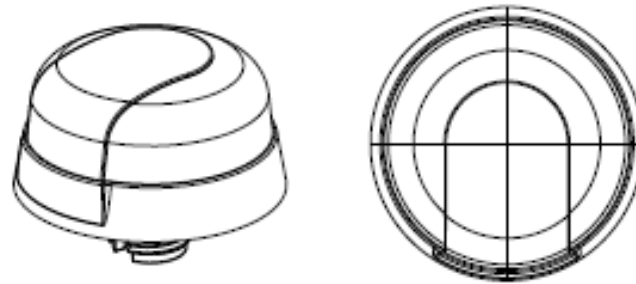
No.	Parameter	Specification
1	Housing	UV resistant ABS
2	Thread and Base Plate	One piece C&C'd Nickel Steel
3	Outer Protector	Rubber
4	Waterproof	IP65 IP69X High Pressure Water Jets (SGS Certified)
5	Thread Diameter	M18
6	Recommended Torque Setting for Mounting	70lb/foot
7	Maximum Torque Setting for Mounting	100lb/foot



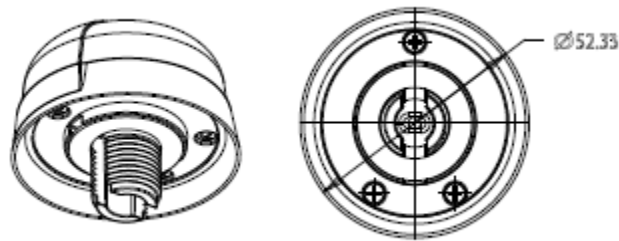
Specification

5.0 Drawings

Antenna Dimensions



Note: unit cm unless specified

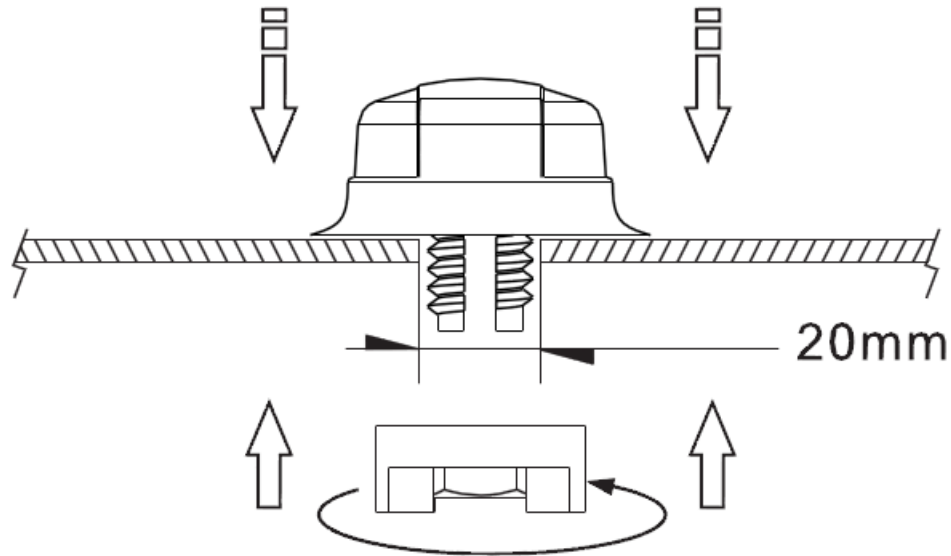






Specification

6.0 Installation



- ⊙ Recommended torque setting for mounting is 95 Nm. or 70 ft. lbs
- ⊙ Maximum torque setting for mounting is 135.6 Nm. or 100 ft. lbs