

SPECIFICATION

Part No. : **A.03.B.1001111**

Product Name : 40dB GPS Hercules Heavy Duty

Screw Mount Antenna

For long cable lengths above 5M

Description : Three Stage 40dB

Height 29mm Diameter 52mm

Applications Location based services

M2M

Telematics

Remote monitoring Timing for Base Stations Large vehicle fleet tracking



Version	Date	Page	Revision Description	Prepared	Approved
В	Jul 21 st 2010	All	Mechanical Change	TW Product Centre	Zita Lin



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
		LNA Gain 40dB typically Passive Gain at Zenith 5.0dB Gain at 10 o elevation: -1.0 dBi typ.
5	Gain	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	-40ºC ~ +85ºC
		fo = 1575.42MHz
		fo ± 20 MHz 7dB Min.
		fo ± 30 MHz 12dB Min.
		fo ± 50 MHz 20dB Min.
10	Out Band Rejection	fo ± 100 MHz 30dB Min.
11	Storage Temperature	-40ºC ~ +95ºC
		Standard RG174 , ψ 2.7 ± 0.2mm , Black
12	Cable/Connectors	Cable Loss -1.3dB per Meter
		Standard Cable Length 10M
		SMA Male Straight Connector

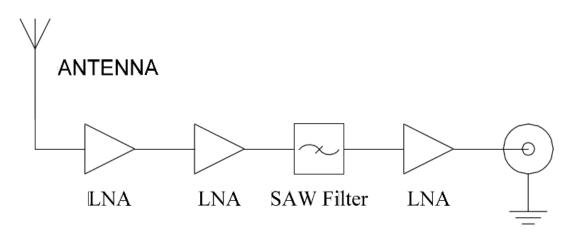


Specification

		Cables and Connectors Fully Customizable
13	Input Voltage	At 1.8V Max 8mA
		At 3.0V Max 10mA
		At 5.0V Max 12mA
14	Protection	IP69K (DIN 40050-9/IEC 60529)

3.0 LNA

LNA Functional Circuit



SMA +cable

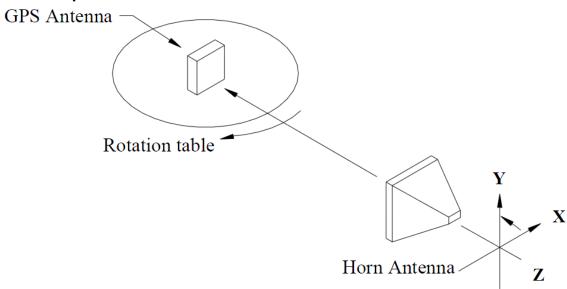
LNA Parameters

No.	Parameter	Specification
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3.1	Frequency Range	1575.42 ± 10 MHz
		Typ.34dB (At 1.8V)
3.2	Gain	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
		F0=1575.42MHz
3.5	Outer Band Attenuation	F0±50MHz 20dB min
		F0±100MHz 25dB min
3.6	Output VSWR	Max 2.0



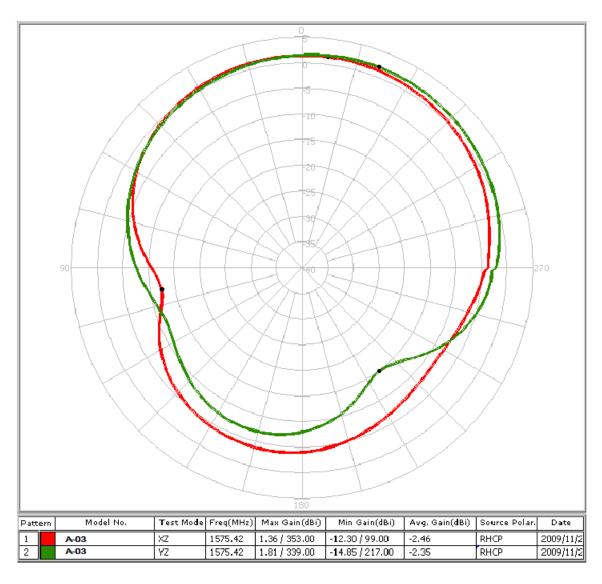
4.0 Radiation Patterns

Test Setup



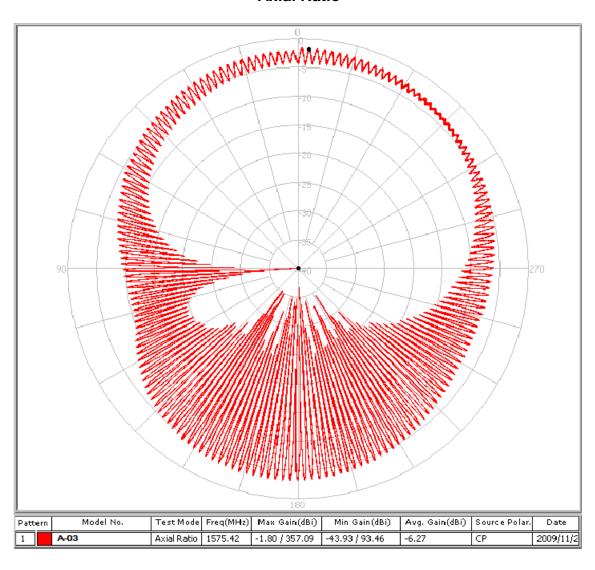


XZ and YZ Plane Cuts





Axial Ratio



Specification



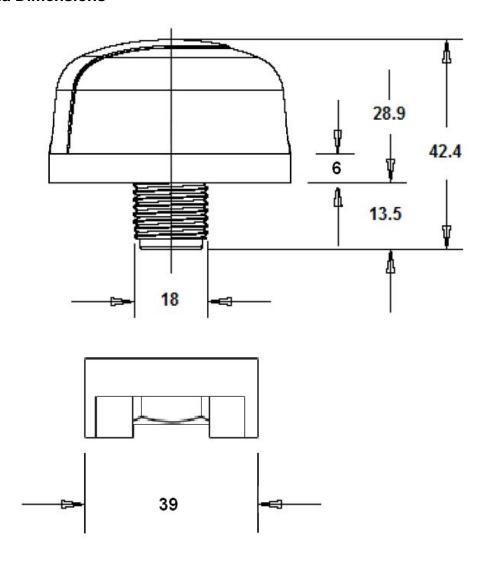
5.0 Mechanical Specifications

No.	Parameter	Specification
1	Housing	UV resistant ABS
2	Thread and Base Plate	One piece C&C'd Nickel Steel
3	Sealing Foam	CR4305 with 3M9448B double-side adhesive
4	Waterproof	IP65 IP69X High Pressure Water Jets (SGS Certified)
5	Thread Diameter	18mm
6	Recommended Torque Setting for Mounting	95Nm – 70lbs-foot
7	Maximum Torque Setting for Mounting	135Nm – 100lbs-foot



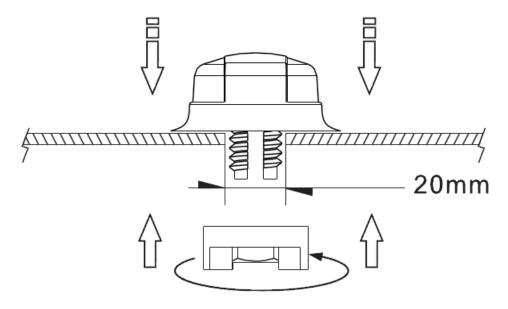
5.0 Drawings

Antenna Dimensions





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. Ibs

