



A.40.A.301111
on ground-plane



Top View

Hercules

A.40.A.301111

Specification

Part No.	A.40.A.301111
Product Name	Hercules GPS/GLONASS Heavy Duty Screw Mount
Feature	Height 28.5mm Diameter 47.8mm Heavy Duty Screw Mount IP67 & IP69K Compliance GPS/GLONASS - 3M RG174 SMA(M) Customizable ROHS Compliant

1. Introduction

The A.40 Hercules is a high performance thread mount GPS-GLONASS antenna designed for external use on vehicles and outdoor assets. Designed for heavy duty work with one piece C&C machined nickel plated steel base and threads, there are also convenient side slots for running cables laterally. Durable UV resistant PC 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 only 49mm. The antenna is completely waterproof with an IP67 & IP69K rating, plus an additional IP69K rating for waterproof resistance against high pressure water jets used in cleaning.

An advanced front end SAW circuit noise filtering design is used to reduce potential interference common in such applications from other nearby high power radio transmitters.

Cable lengths, types and connectors are fully customizable.

2. Specification

Electrical GPS/GLONASS

Frequency (MHz)	1574~1606MHz
Impedance(Ohm)	50Ω
GPS Patch Gain@ Zenith	-1.4dB Passive Gain @ Zenith
GLONASS Patch Gain@ Zenith	-1.3dBi Gain @ Zenith
VSWR	2.0 max
Axial Ratio	3.0dB max
Polarization	RHCP
Out Band Rejection	fo = 1575.42MHz fo ± 30 MHz 5dB Min. fo ± 50 MHz 20dB Min. fo ± 100 MHz 25dB Min.
Input Voltage(V)	Typ. 2.5~5.5V
Total Gain @ Zenith	27dB typical at 3.0V
Current consumption(mA)	10mA typical at 3.0V
Noise figure	1.3dB typical

Mechanical

Dimensions	Ø49mm , Height 29mm
Cable type	RG174
Cable length	3000±30mm
Casing	UV Resistant PC
Connector	SMA Male
Recommended Mounting Torque	24.5Nm
Max Mounting Torque	29.4Nm

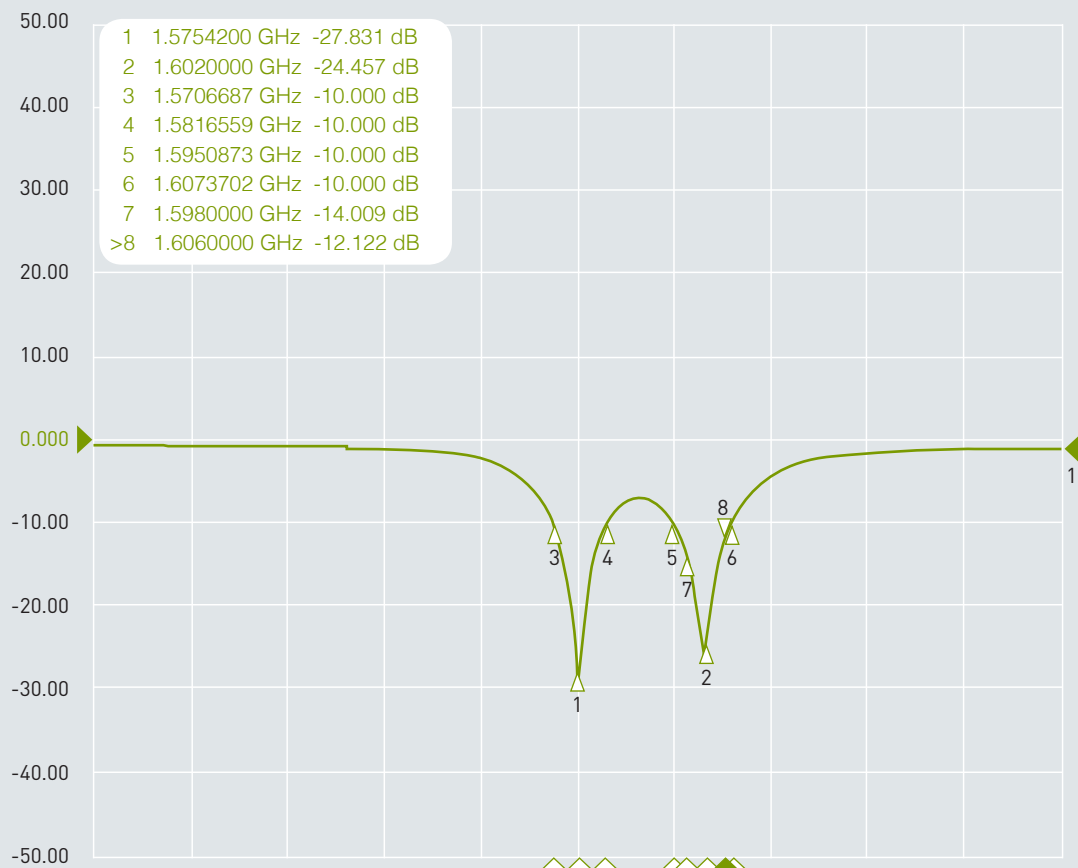
Environmental

Temperature Range	-40°C to 85°C
Waterproof	IP67 and IP69K
Thermal Shock	100 cycles -40°C to +85°C
Shock (drop test)	1m drop on concrete 6 axes
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

3.1 Return Loss

► Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]



2 Center 1.57542 GHz

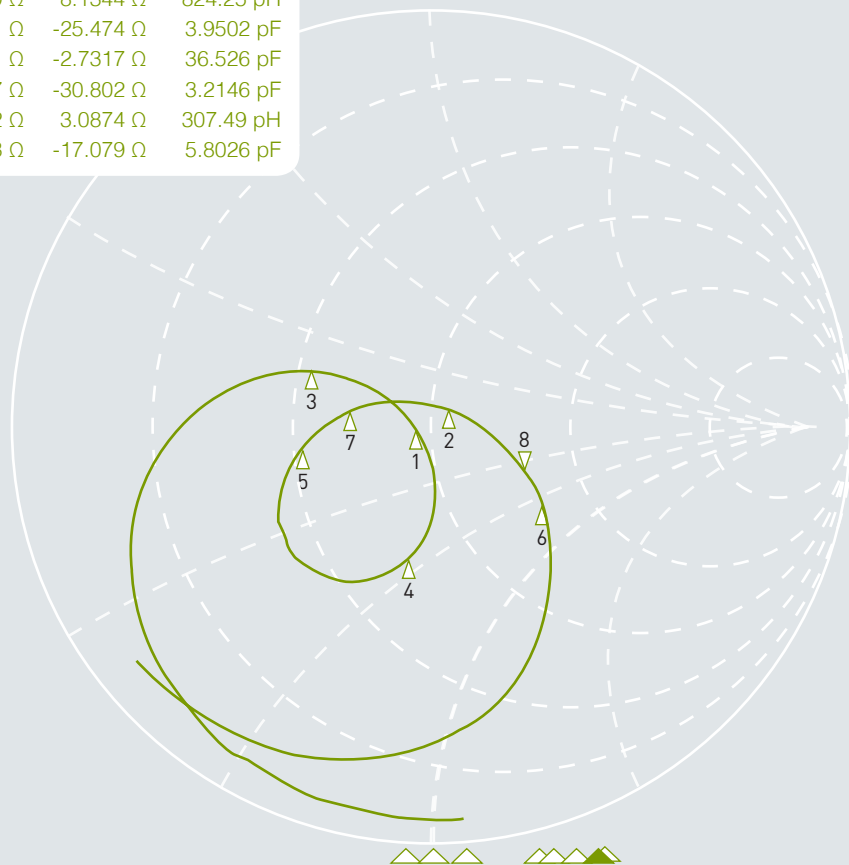
IFBW 70 kHz

Span 200 MHz

3.2 Smith Chart - Impedance

► Tr1 S22 Smith (R + j) (Scale 1.000U [F1])

1	1.5754200 GHz	46.108 Ω	273.62 m Ω	27.642 pH
2	1.6020000 GHz	53.552 Ω	5.0781 m Ω	504.50 pH
3	1.5706687 GHz	26.929 Ω	8.1344 Ω	824.25 pH
4	1.5816559 GHz	36.911 Ω	-25.474 Ω	3.9502 pF
5	1.5950873 GHz	26.081 Ω	-2.7317 Ω	36.526 pF
6	1.6073702 GHz	78.017 Ω	-30.802 Ω	3.2146 pF
7	1.5980000 GHz	33.612 Ω	3.0874 Ω	307.49 pH
>8	1.6060000 GHz	76.653 Ω	-17.079 Ω	5.8026 pF



2 Center 1.57542 GHz

IFBW 70 kHz

SPAN 200 MHz

4. Antenna Radiation Pattern – GPS-GLONASS

H-Plane

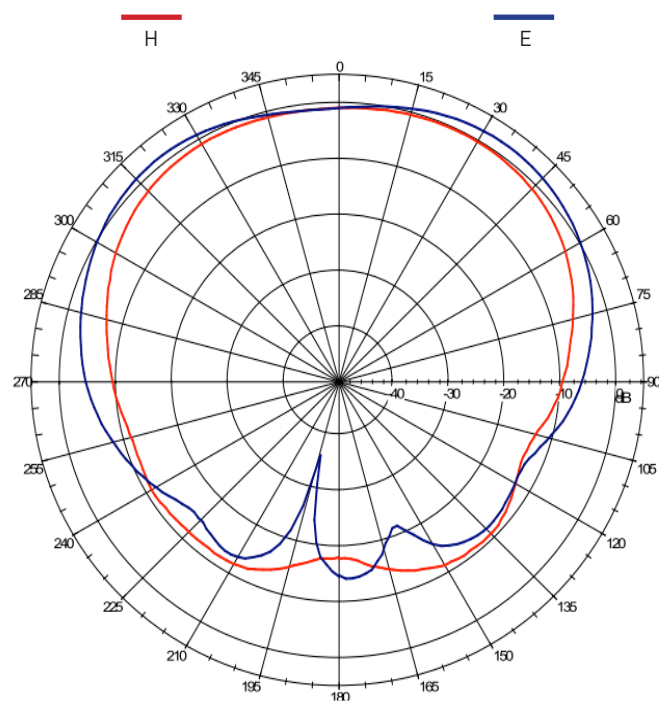


E-Plane



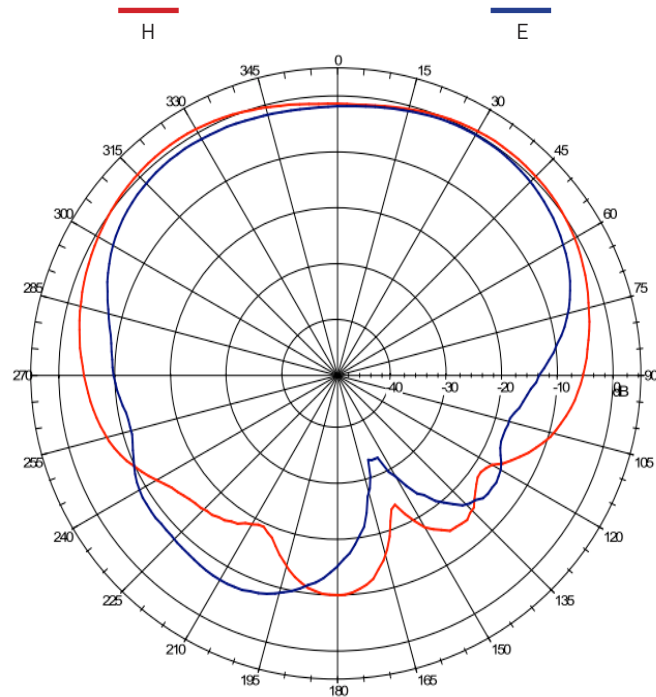
4.1 1575.42MHz

Far-field amplitude of H.nsi



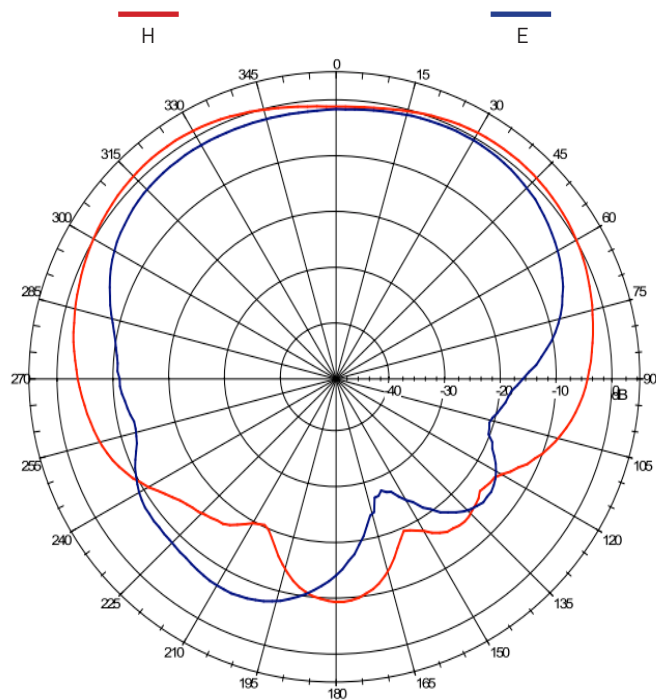
4.2 1598MHz

Far-field amplitude of H.nsi



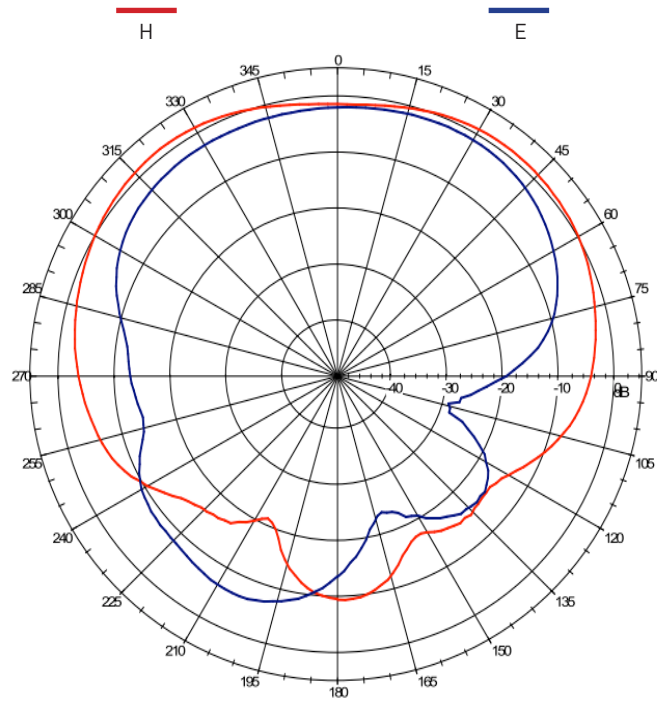
4.3 1602MHz

Far-field amplitude of H.nsi

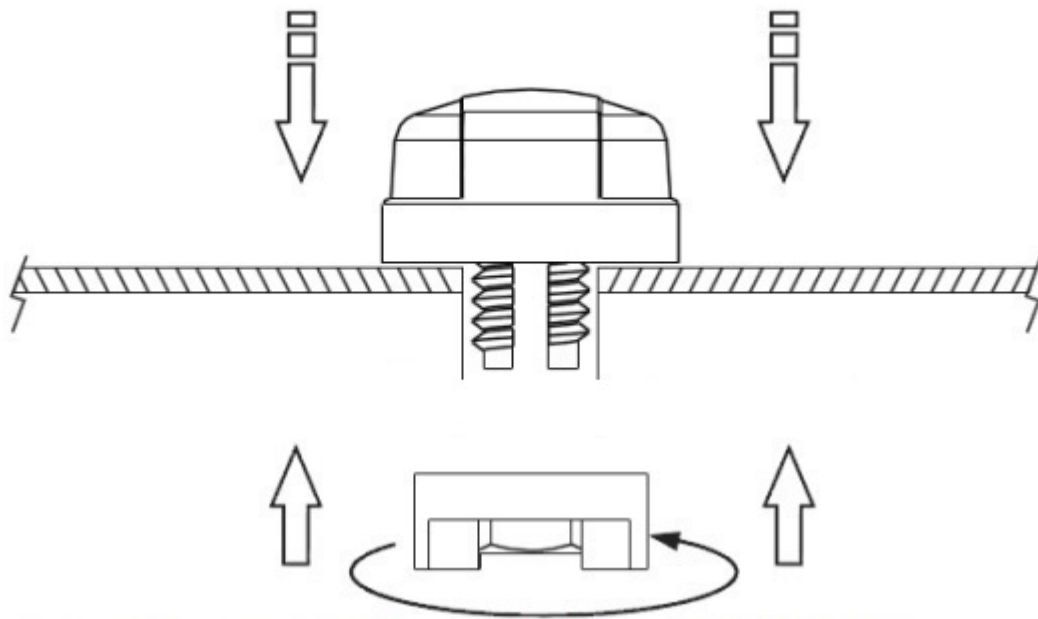


4.4 1606MHz

Far-field amplitude of H.nsi



6. Istallation

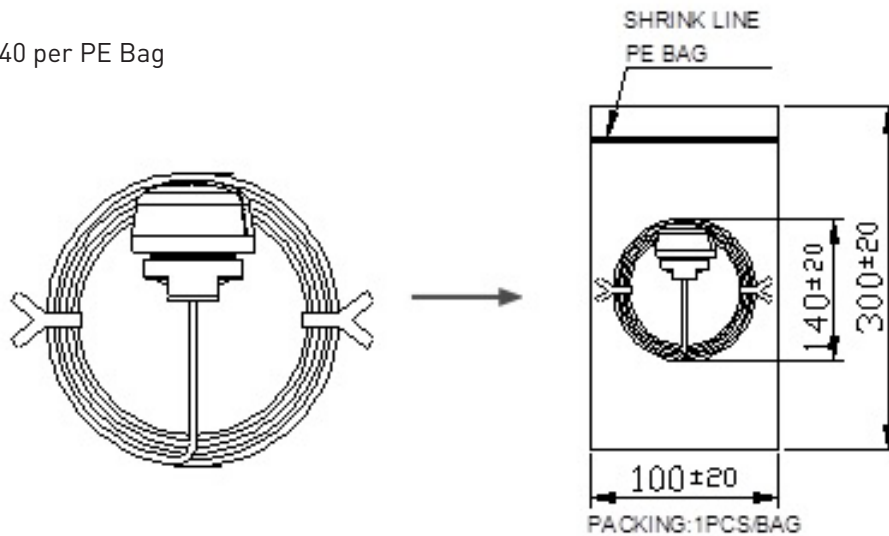


Recommended torque for Mounting is $24.5\text{N}\cdot\text{m}$
Maximum torque for mounting is $29.4\text{N}\cdot\text{m}$

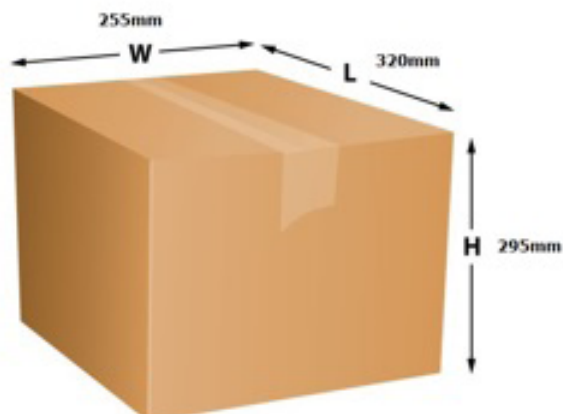


7. Packaging

1 piece A.40 per PE Bag



60 pieces per carton



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AMEYA360

Components Supply Platform

Authorized Distribution Brand :



Website :

Welcome to visit www.ameya360.com

Contact Us :

➤ Address :

401 Building No.5, JiuGe Business Center, Lane 2301, Yishan Rd
Minhang District, Shanghai , China

➤ Sales :

Direct +86 (21) 6401-6692

Email amall@ameya360.com

QQ 800077892

Skype ameyasales1 ameyasales2

➤ Customer Service :

Email service@ameya360.com

➤ Partnership :

Tel +86 (21) 64016692-8333

Email mkt@ameya360.com