



# TAOGLAS®



# Datasheet

## GNSS Hercules

**Part No:**  
**A.40.A.301111**

### **Description:**

GPS/GLONASS/Galileo Hercules Heavy Duty Permanent Mount Antenna

### **Features:**

Bands Covered:

- GPS L1
- GLONASS G1
- Galileo E1

Heavy duty Permanent mount

Dimensions: Ø48\*29mm

Cable: 3m RG-174

IP65 Rated Enclosure

Connector: SMA(M) Straight

RoHS & Reach Compliant

1. Introduction	3
2. Specifications	4
3. Antenna Characteristics	6
4. Radiation Patterns	8
5. Mechanical Drawing	10
6. Footprint	11
7. Packaging	12
<hr/>	
Changelog	13

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## 1. Introduction



The A.40 Hercules is an active high-performance permanent mount GPS/GLONASS/Galileo antenna designed for external use on vehicles and outdoor assets. Durable UV resistant PC housing is IP65 rated, 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.

Typical Applications Include:

- Remote Asset Tracking
- Navigation
- Telematics Devices

The cable and connector is fully customizable, for further information, please contact your regional Taoglas customer support team.

## 2. Specifications

GNSS Frequency Bands Covered							
GPS/QZSS	L1	L2	L5	L6			
	1575.42MHz	1227.6MHz	1176.45MHz	1278.75MHz			
	■	□	□	□			
GLONASS	L5R	L3PT	L2PT	L1CR	L1PT		
	1176.45MHz	1201.5MHz	1246MHz	1575.42MHz	1602MHz		
	□	□	□	■	■		
Galileo	E5a	E5b	E4	E3	E6	E2	E1
	1176.45MHz	1201.5MHz	1215MHz	1256MHz	1278.75MHz	1561MHz	1575.42MHz
	□	□	□	□	□	□	■
BeiDou	B1	B2	B3				
	1561MHz	1207.14MHz	1268.52MHz				
	□	□	□				
Compass	E5B(B2)/ E6(B3)	E2(B1)					
	1268.56MHz	1561MHz					
	□	□					
SBAS	Omnistar	WAAS/EGN OS					
	1542.5MHz	1575.42MHz					
	□	■					

GNSS Electrical	
Frequency (MHz)	1574 ~ 1606
VSWR (max.)	2.0:1
Impedance (Ohm)	50Ω
Axial ratio	3.0dB max
Polarization	RHCP
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
GPS/GALILEO Gain@ Zenith	-1.4dB Passive Gain @ Zenith
GLONASS Patch Gain@ Zenith	-1.3dBi Gain @ Zenith
Out Band Rejection	fo = 1575.42MHz fo ± 30 MHz 5dB Min. fo ± 50 MHz 20dB Min. fo ± 100 MHz 25dB Min.

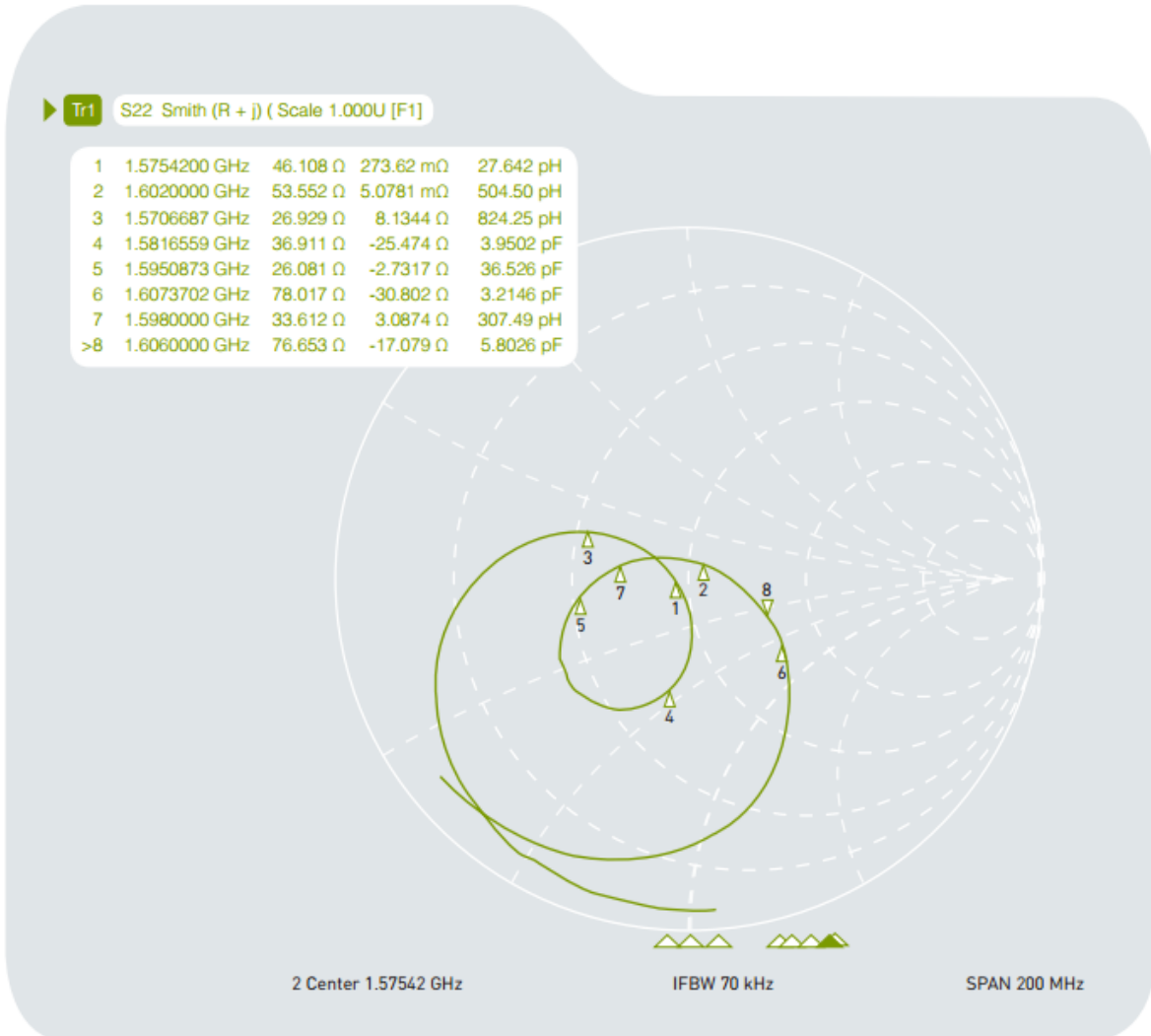
Mechanical	
Dimensions	∅49mm Height 28.5mm
Cable type	RG-174
Cable length	3000mm
Casing	UV Resistant PC
Connector	SMA Male Straight
Recommended Mounting Torque	24.5N·m
Maximum Mounting Torque	29.4N·m
Environmental	
Operation Temperature Range	-40°C to 85°C
Storage Temperature Range	-40°C to 85°C
Waterproof	IP65
Thermal Shock	100 cycles -40°C to +85°C
Shock (drop test)	1m drop on concrete 6 axes

### 3. Antenna Characteristics

#### 3.1 Return Loss



## 3.2 Smith Chart



## 4. Radiation Patterns

### 4.1 Test Setup

H-Plane

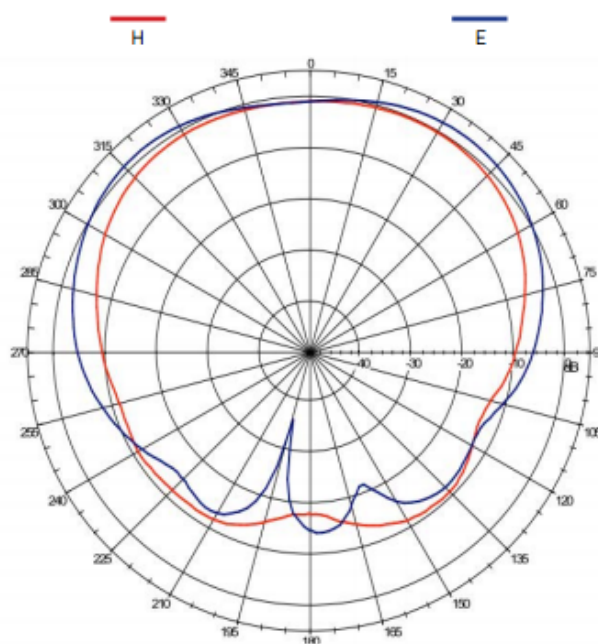


E-Plane



### 4.2 1575.42MHz

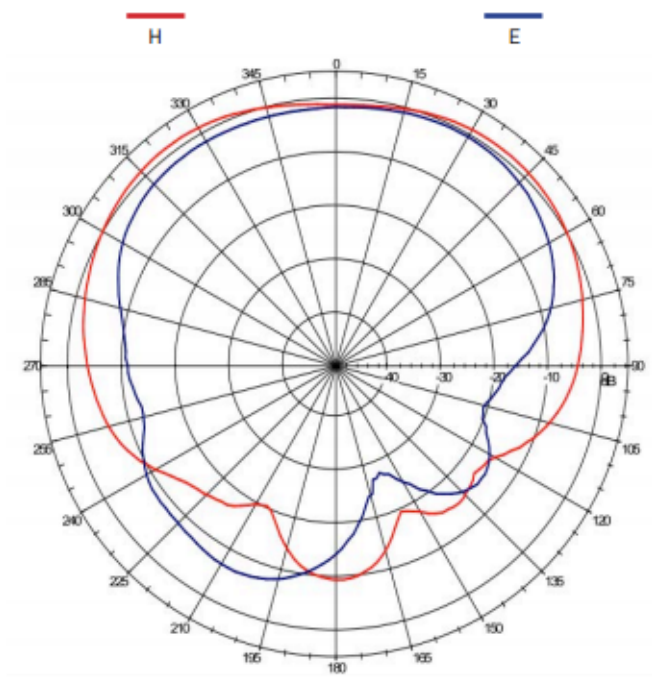
Far-field amplitude of H.nsi



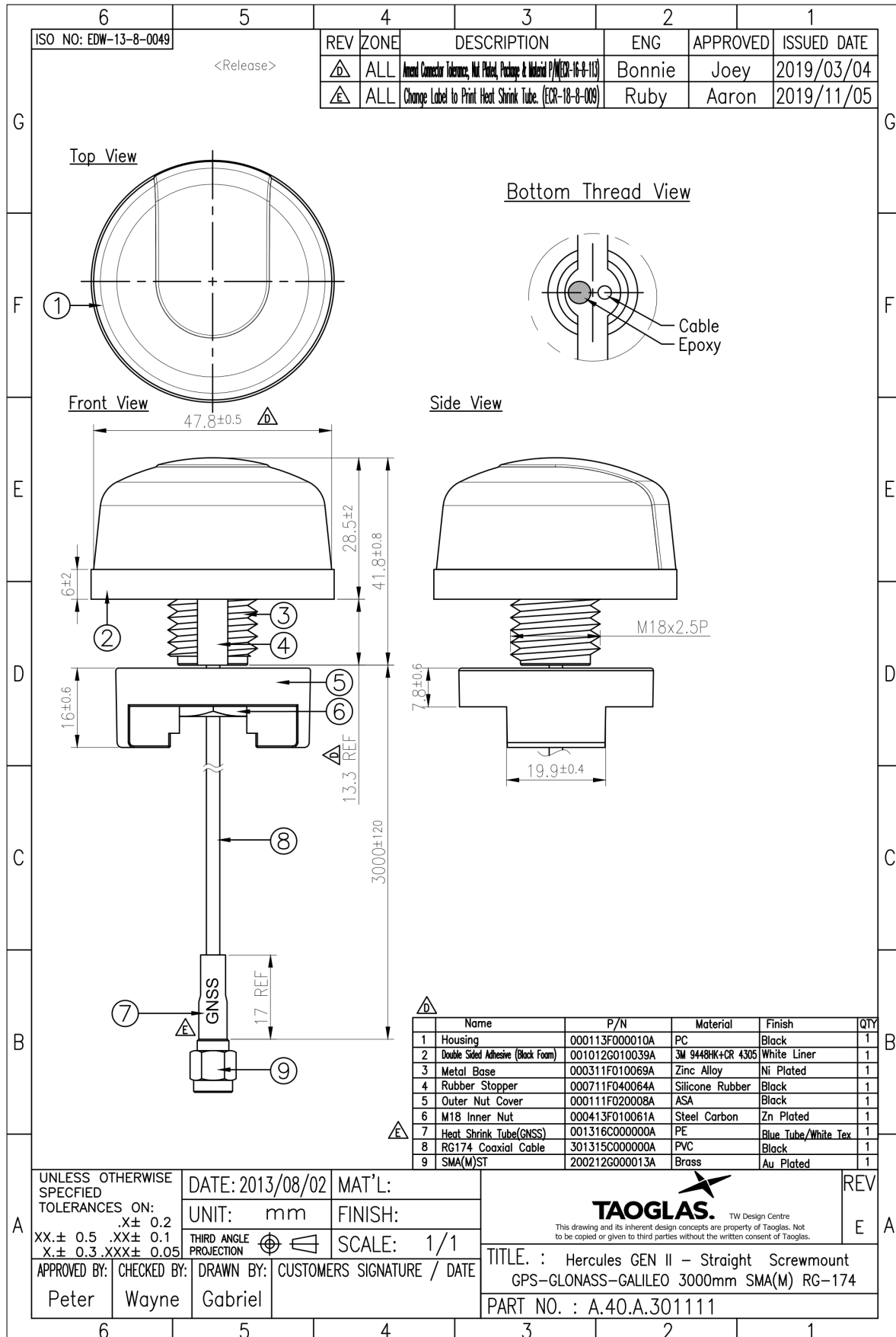


4.3 1602MHz

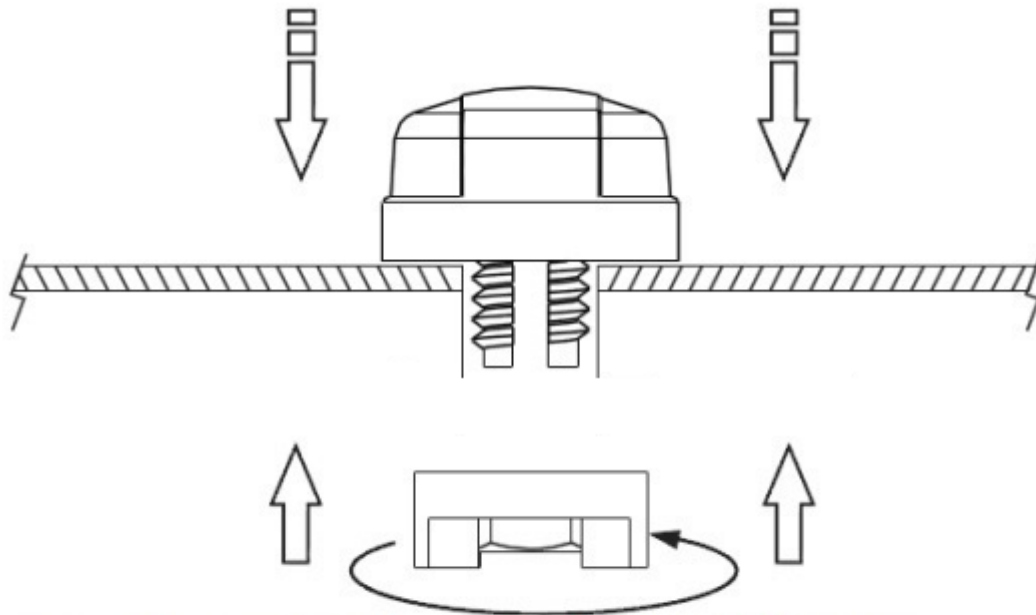
Far-field amplitude of H.nsi



# 5. Mechanical Drawing (Units: mm)



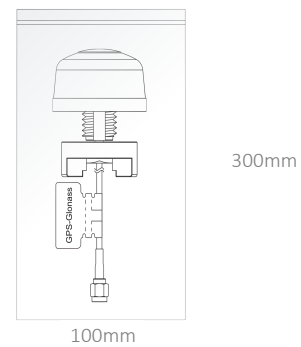
## 6. Installation



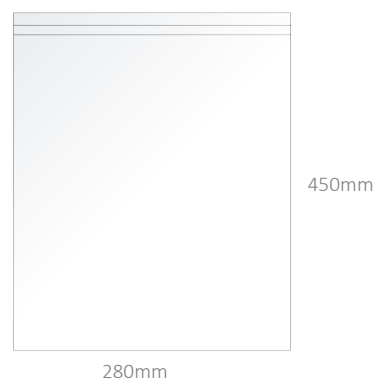
Recommended torque for Mounting is 24.5N·m  
 Maximum torque for mounting is 29.4N·m

## 7. Packaging

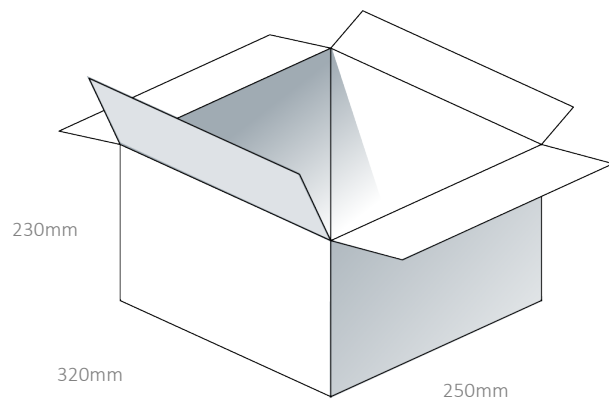
1pc A.40.A.301111 per PE Bag  
 Dimensions: 100\*300mm  
 Weight: 151g



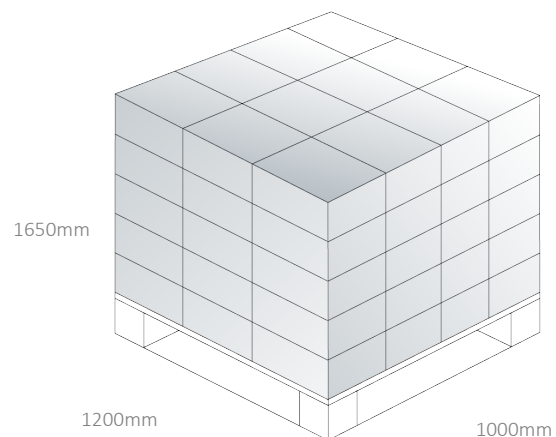
10 pcs A.40.A.301111 per Large PE Bag  
 Dimensions: 280\*450mm  
 Weight: 1.524Kg



60pcs A.40.A.301111 per carton  
 Dimensions - 320\*250\*230mm  
 Weight – 9.8Kg



**Pallet Dimensions:**  
 1200\*1000\*1650mm  
 60 Cartons per Pallet  
 12 Cartons per Layer, 5 Layers



Changelog for the datasheet

**SPE-13-8-053 – A.40.A.301111**

**Revision: J (Current Version)**

Date:	2021-02-09
Changes:	Updated IP rating
Changes Made by:	Erik Landi

**Previous Revisions**

**Revision: I**

Date:	2021-02-09
Changes:	Updated waterproof rating
Changes Made by:	Jack Conroy

**Revision: D**

Date:	2016-06-01
Changes:	Amended Packaging and Info
Changes Made by:	Aine Doyle

**Revision: H**

Date:	2020-03-27
Changes:	Updated Packaging and Template
Changes Made by:	Jack Conroy

**Revision: C**

Date:	2014-08-26
Changes:	Removed Saw info
Changes Made by:	Aine Doyle

**Revision: G**

Date:	2019-11-07
Changes:	Amended Drawing
Changes Made by:	Jack Conroy

**Revision: B**

Date:	2014-08-11
Changes:	Updated Torque Info
Changes Made by:	Aine Doyle

**Revision: F**

Date:	2019-01-22
Changes:	Amended Drawing
Changes Made by:	Jack Conroy

**Revision: A (Original First Release)**

Date:	2013-07-26
Notes:	
Author:	Wayne Yang

**Revision: E**

Date:	2018-12-12
Changes:	Amended Heatshrink Drawing
Changes Made by:	Jack Conroy



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