



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

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

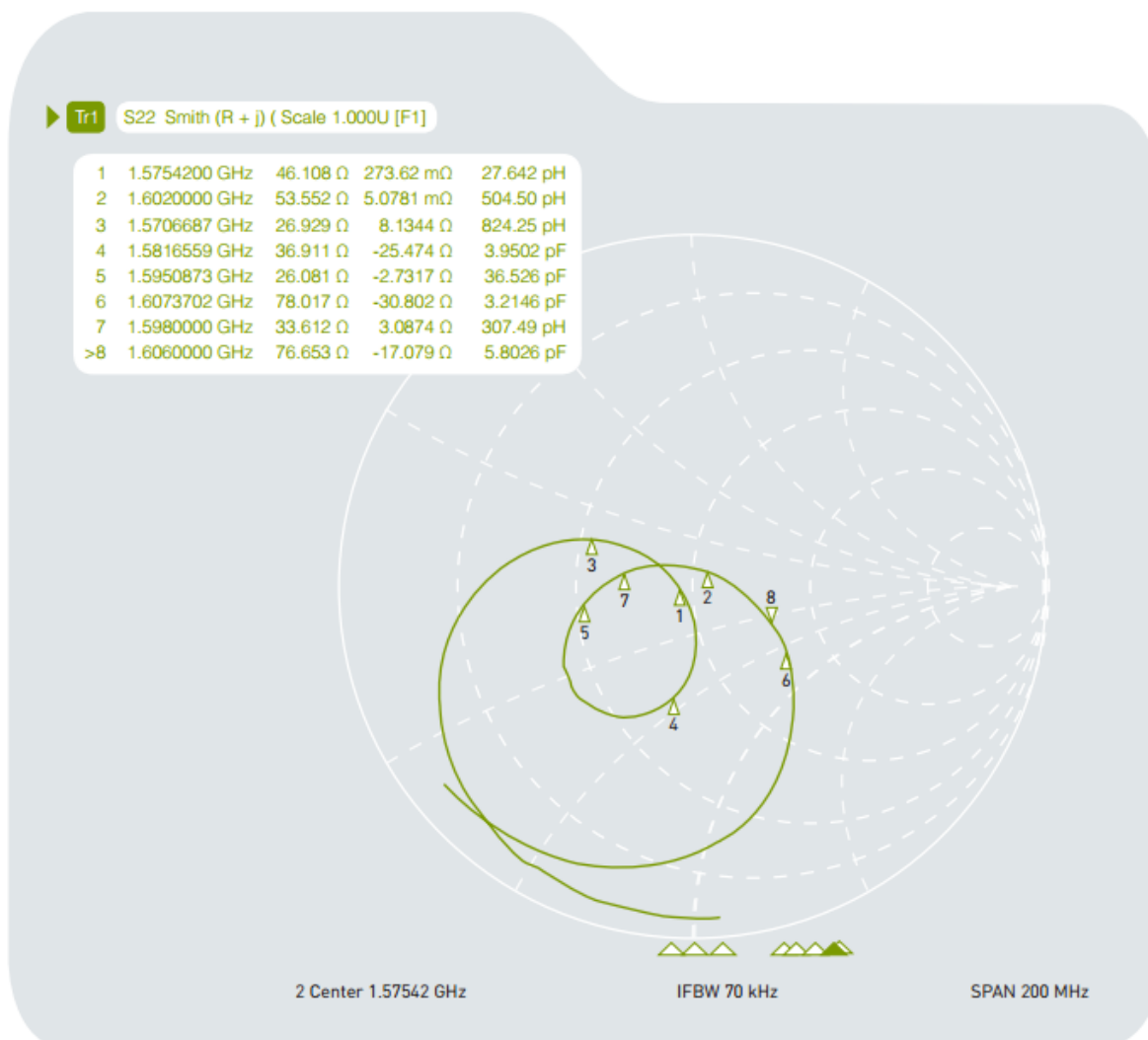
Mechanical	
Dimensions	Ø49mm Height 28.5mm
Cable type	RG-174
Cable length	3000mm
Casing	UV Resistant PC
Connector	SMA Male Straight
Recommended Mounting Torque	24.5N·m
Maximum Mounting Torque	29.4N·m
Environmental	
Operation Temperature Range	-40°C to 85°C
Storage Temperature Range	-40°C to 85°C
Waterproof	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

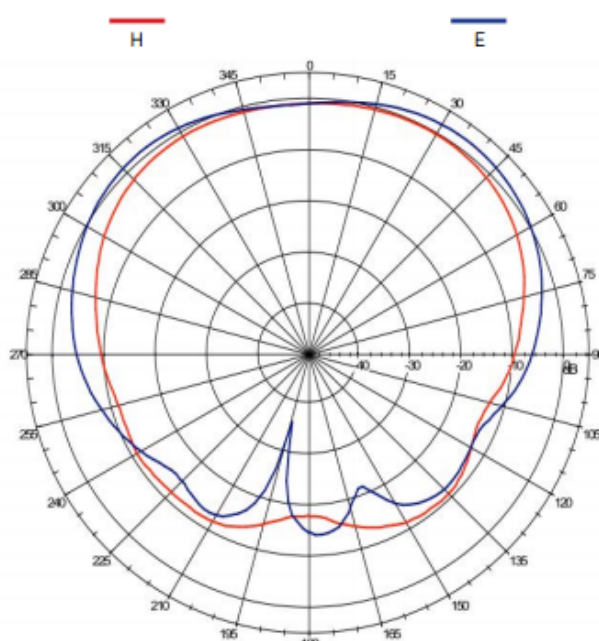


E-Plane

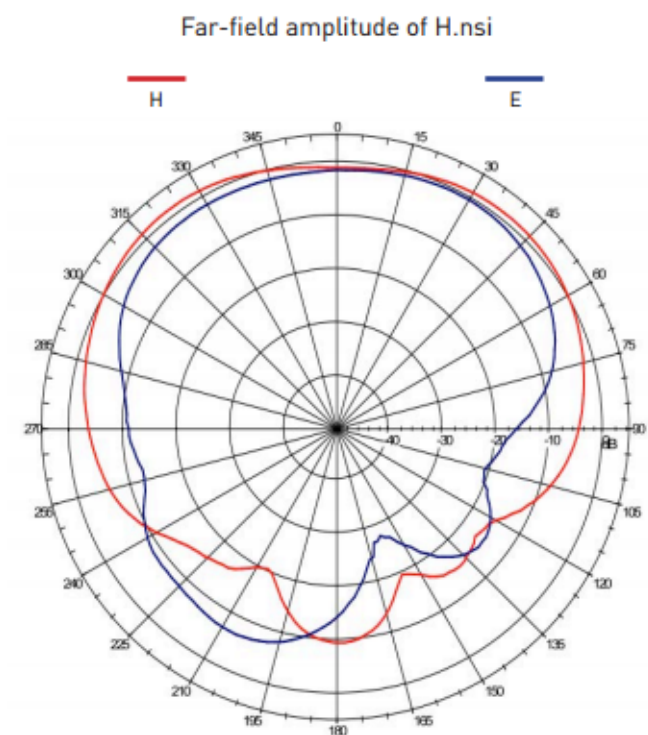


4.2 1575.42MHz

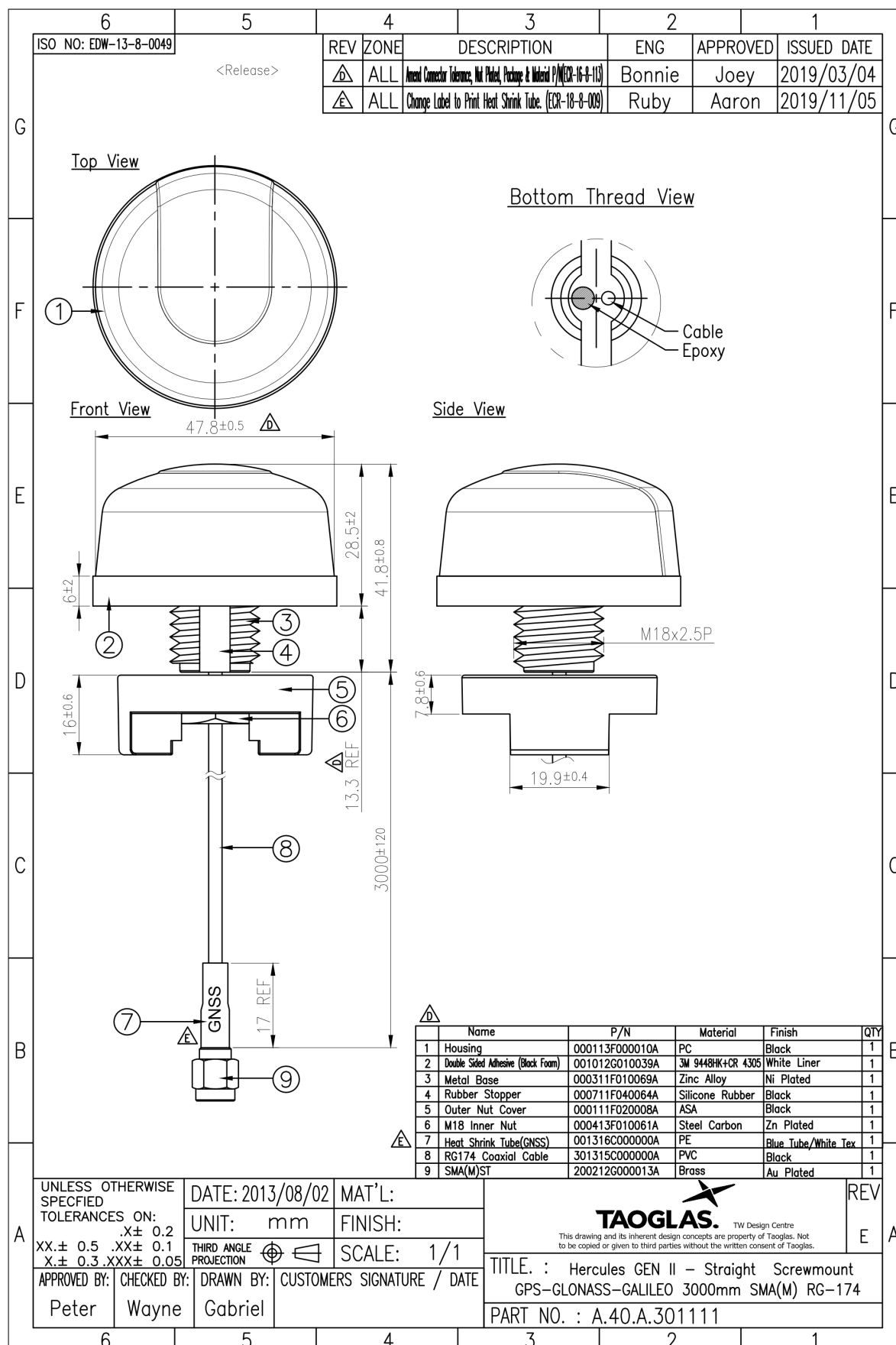
Far-field amplitude of H.nsi



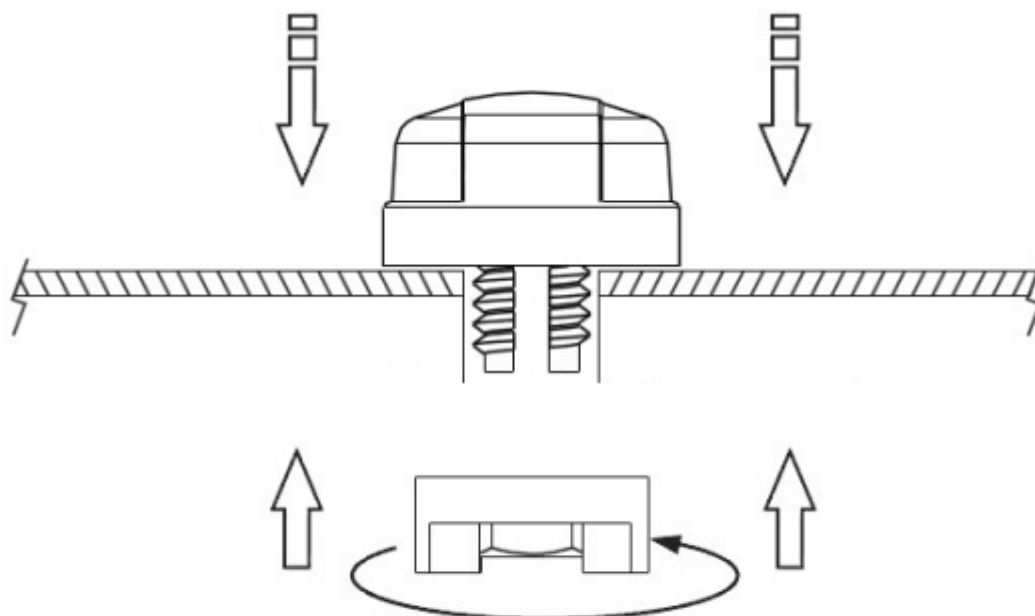
4.3 1602MHz



5. Mechanical Drawing (Units: mm)



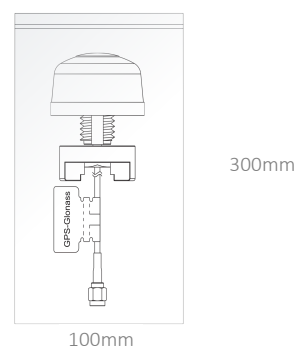
6. Installation



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

7. Packaging

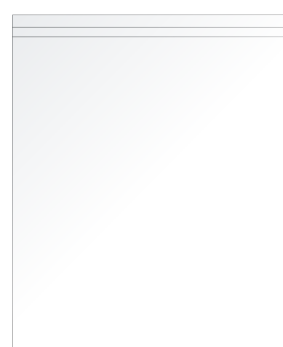
1pc A.40.A.301111 per PE Bag
Dimensions: 100*300mm
Weight: 151g



100mm

300mm

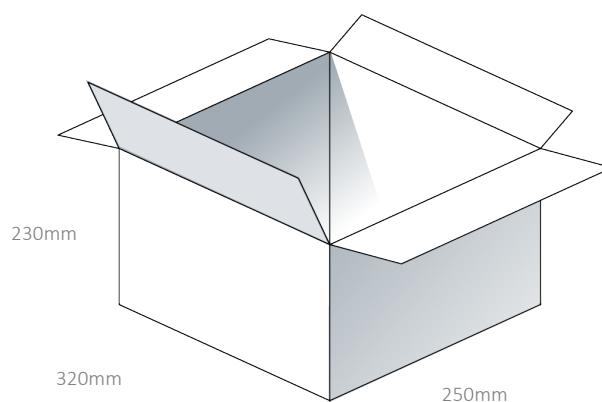
10 pcs A.40.A.301111 per Large PE Bag
Dimensions: 280*450mm
Weight: 1.524Kg



280mm

450mm

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

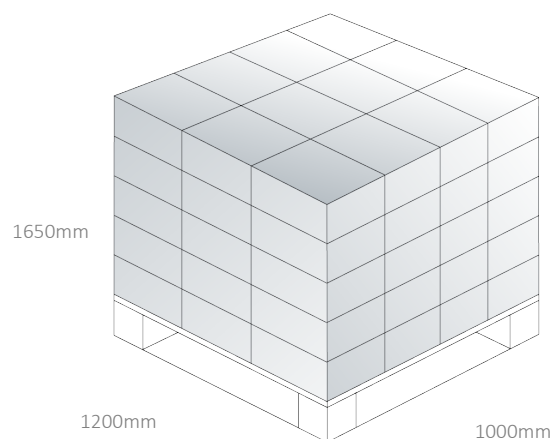


230mm

320mm

250mm

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



1650mm

1200mm

1000mm

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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