



# 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

IP69K Waterproof Rating

Dimensions: Ø48\*29mm

Cable: 3m RG-174

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

Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein. Reproduction, use or disclosure to third parties without express permission is strictly prohibited.



## 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 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 rating, plus an additional IP69K rating for waterproof resistance against high pressure water jets used in cleaning.

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.

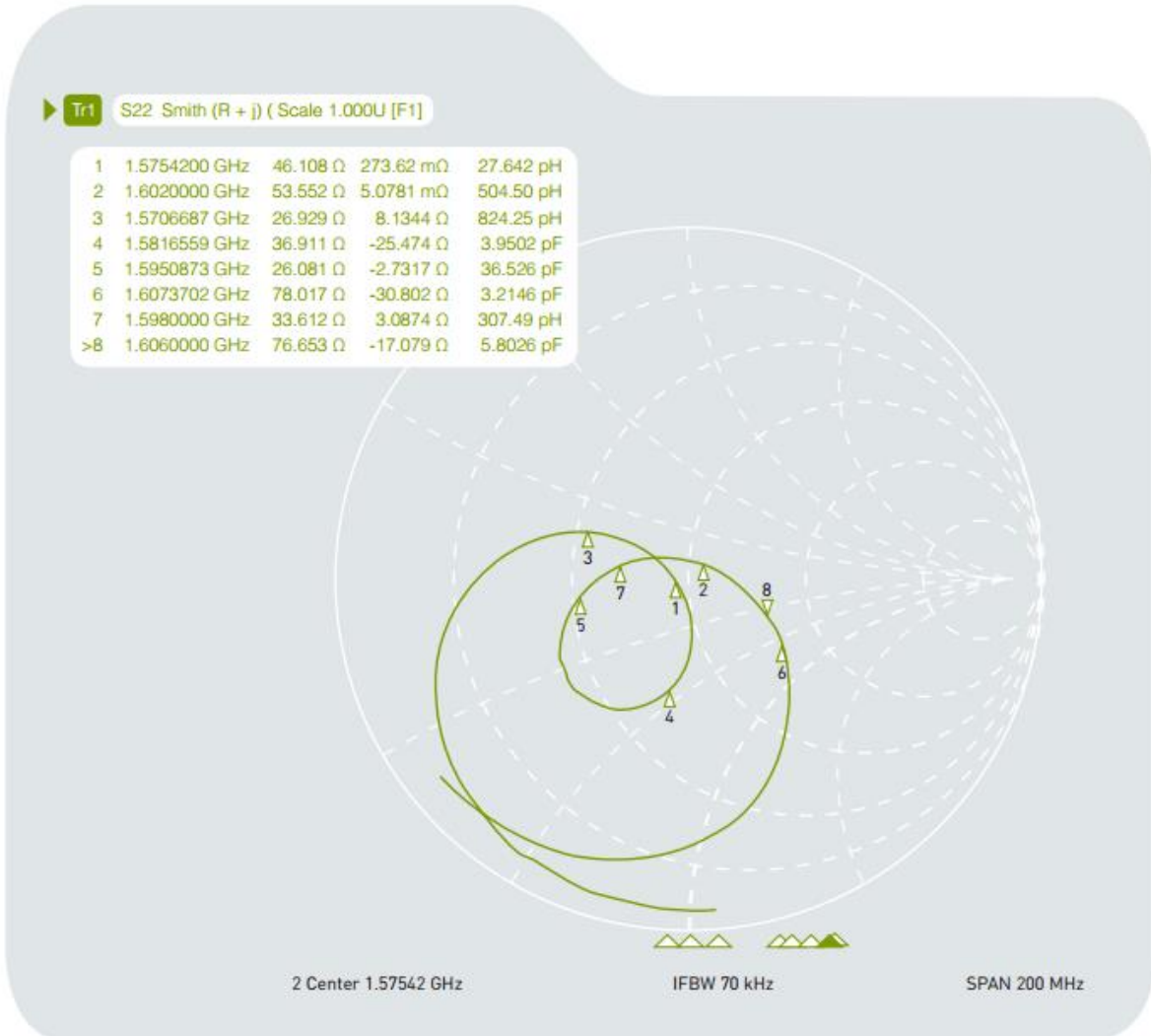
Mechanical	
Dimensions	Ø49mm Height 28.5mm
Cable type	RG-174
Cable length	3000mm
Casing	UV Resistant PC
Connector	SMA Male Straight
Recommended Mounting Torque	24.5N·m
Maximum Mounting Torque	29.4N·m
Environmental	
Temperature Range	-40°C to 85°C
Waterproof	IP67 and IP69K
Thermal Shock	100 cycles -40°C 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



### 3.2 Smith Chart



## 4. Radiation Patterns

### 4.1 Test Setup

H-Plane

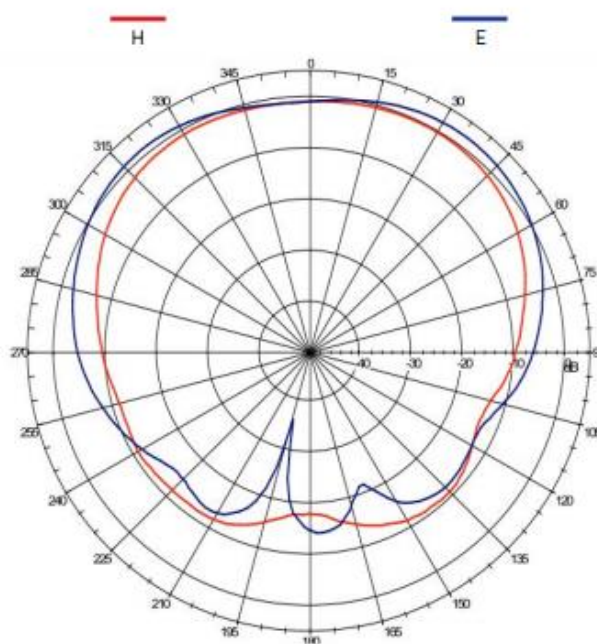


E-Plane



### 4.2 1575.42MHz

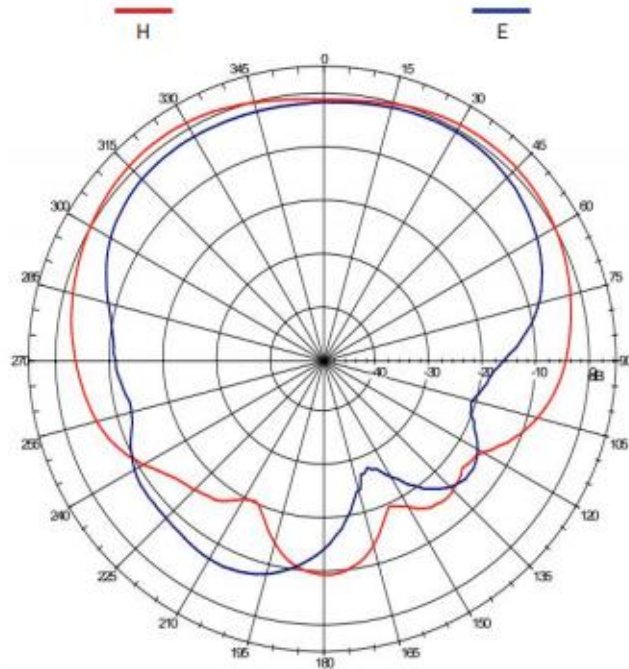
Far-field amplitude of H.nsi



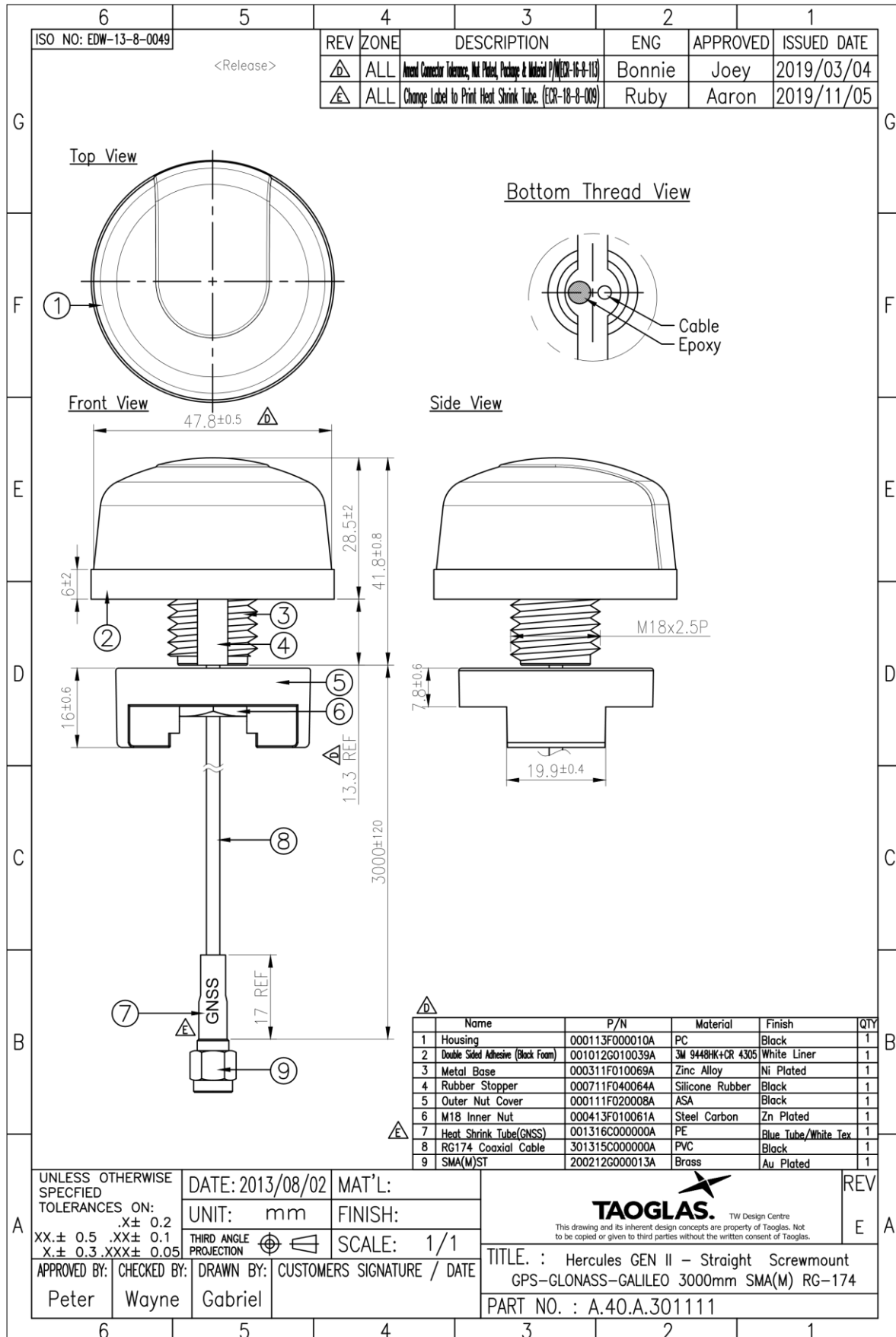


4.3 1602MHz

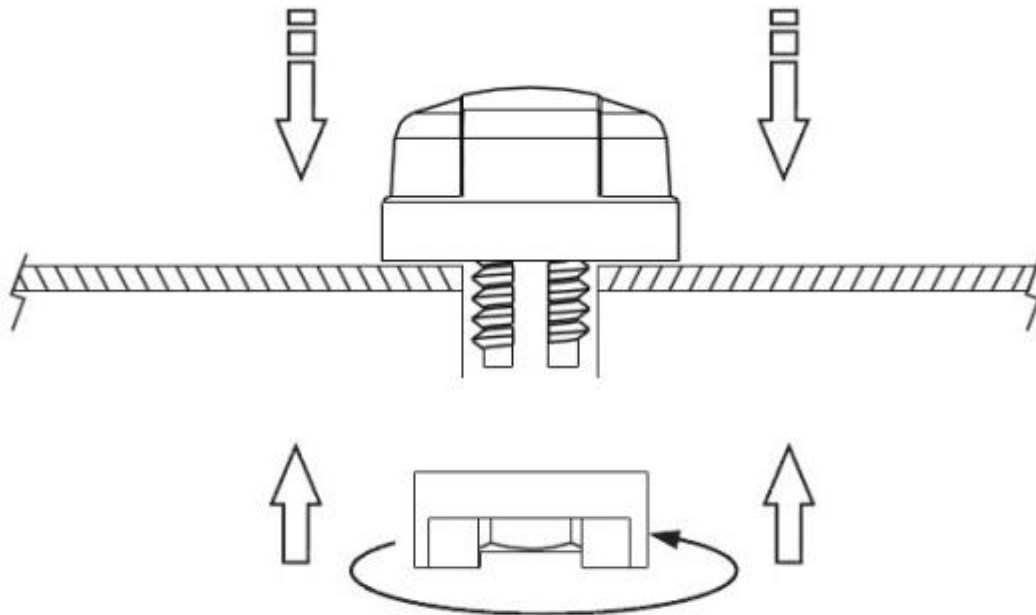
Far-field amplitude of H.nsi



# 5. Mechanical Drawing (Units: mm)



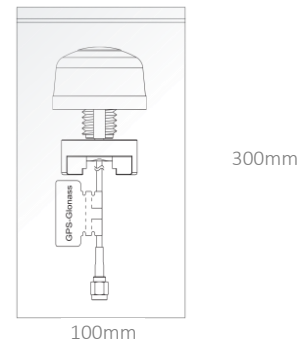
## 6. Installation



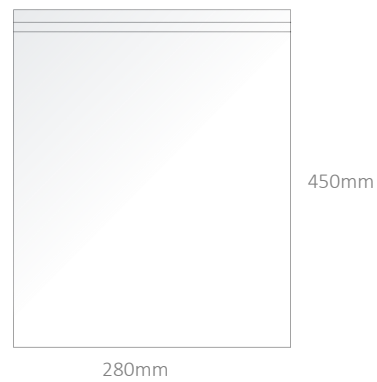
Recommended torque for Mounting is 24.5N·m  
 Maximum torque for mounting is 29.4N·m

## 7. Packaging

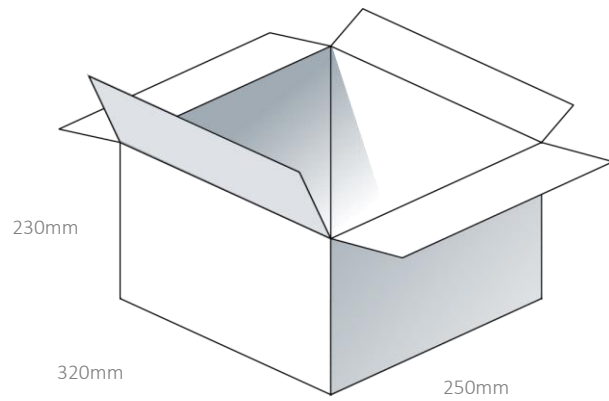
1pc A.40.A.301111 per PE Bag  
 Dimensions: 100\*300mm  
 Weight: 151g



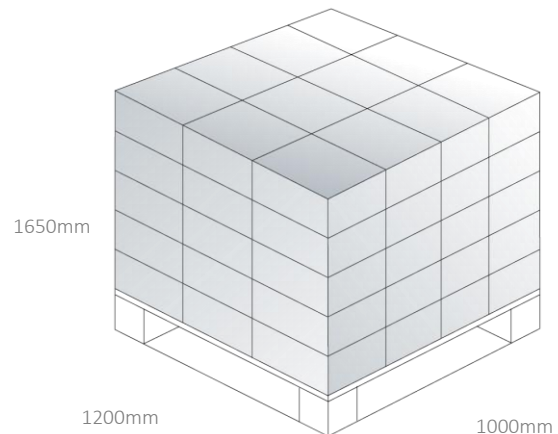
10 pcs A.40.A.301111 per Large PE Bag  
 Dimensions: 280\*450mm  
 Weight: 1.524Kg



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: H (Current Version)**

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

**Previous Revisions**

**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

**Revision: D**

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

**Revision: C**

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



**TAOGLAS**®

[www.taoglas.com](http://www.taoglas.com)





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.