



# Bullet™ 360T/F Multi-GNSS Active Timing Antenna

## Multi Constellation

The Bullet™ 360T/F is an L1 single frequency, ruggedized, weatherproof multi-GNSS antenna. The product supports GPS, Galileo, Beidou and GLONASS constellations. When used with a GNSS receiver, such as Protempis' RES360™ module, the system offers unparalleled accuracy to meet the stringent synchronization needs of the next generation networks in various industry verticals including 5G X-Haul, Smart Grid, Data Center, SATCOM, Calibration Services, and Industrial Automation.

## Designed for Urban Environment

The Bullet™ 360T/F active antenna is designed for long cable runs and noisy RF environments. In challenging urban RF environments, the high antenna gain will significantly improve the performance of GNSS receiver. The Bullet360T/F was specifically designed for long duration installation in congested cell-site environments. The low noise, high gain amplifier is well suited to address attenuation issues associated with applications requiring longer cable runs.

## Anti-Jamming

The Bullet 360T/F antenna protects GNSS receivers from interference and intentional jamming. The filtering apparatus implemented in the antenna improves immunity to other RF signals for reliable performance in hostile RF jamming environments.

## Install it anywhere

The antenna is housed in weatherproof packaging designed to withstand exposure to shock, vibration, extreme temperatures, rain, snow, and sunlight. The dome is all plastic and the threaded socket in the base of the antenna. The socket accepts either a 1"-14" straight thread (typical marine antenna mount) or a 3/4" pipe thread. The TNC or F antenna connector is located inside the threaded socket, which allows the antenna cable to be routed inside a mounting pole and protects the cable connection.



## Key Features

- ▶ Active Antenna with built-in LNA. Available with either TNC or F connector
- ▶ Multi-constellation – GPS, GLONASS, Galileo & Beidou
- ▶ High Gain, low noise, high out-of-band Rejection. Robust anti-jamming design
- ▶ Built-in lightning protection that meets/exceeds of handling IEC 61000-4 specifications
- ▶ Ruggedized IP67 enclosure and supports extended temperature environments.
- ▶ Wide operating voltage range



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## Overall Specification

Characteristics	Specifications	
Frequency Range	L1: 1561- 1602 MHz	
Peak Gain	1561 MHz	34.0±3.0 dB
	1575.42 MHz	35.4±3.0 dB
	1602 MHz	33.5±3.0 dB
Output VSWR	2.5 (typical)	
Noise Figure	3.5 dB (typical) (Pre-Saw)	
Operation Voltage	3.0-5.0 V	
Current	9.0±3 mA	

## Regulatory & Standards

- Multiple installation options and pole diameters ½ to 3 ½ inch.
- 3.05" D x 2.61" H (77.5mm x 66.2mm)
- Connector: TNC coaxial threaded socket 50-ohm impedance  
F coaxial threaded socket 75-ohm impedance

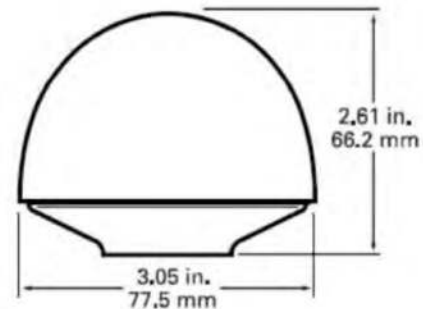
## Weight

- 182g±10g

## Specification

Operating Temperature.....-40°C to +90°C  
 Storage Temperature.....-40°C to +90°C  
 Vibration.....10 – 200 Hz Log sweep  
 3g (Sweep time 15 minutes) 3 axes  
 Shock.....50g vertical, 30g all axes  
 Humidity Soak..... High temperature 85°C, Humidity  
 95% Time 96H  
 Corrosion Salt Resistant.....5% Salt spray tested, 96 hours

## Mechanical



www.stepglobal.com  
 +61 3 9551 7334  
 sales@stepglobal.com

1 Arco Lane  
 Heatherton, Vic 3202  
 Australia

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