



# Bullet™ 720 Dual-Band Multi-GNSS Active Antenna

## Dual Band

The Bullet™ 720 is a ruggedized weatherproof dual-band (L1 & L5) multi-GNSS active antenna. It is designed with a high out-of-band rejection filter and a built-in LNA to compensate for feedline losses and provide improved performance in harsh GNSS environments.

Additionally, Bullet 720 offers the benefits of using the higher power L5 signals (twice as much power as L1). With its greater bandwidth and advanced signal design, it lowers the risk of interference and improves multi-path protection. The dual-band capability of the Bullet 720 allows GNSS receivers to compensate for ionosphere errors allowing the reduction of the timing error under clear skies to a few nanoseconds.

When used with a dual-band GNSS receiver, such as Protempis' RES720 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 applications.

## Multi-GNSS

The Bullet 720 is an active Antenna that supports GPS L1 & L5, Galileo E1 & E5, Beidou B1 & B2C, GLONASS G1 and IRNSS bands.

## Anti-Jamming

The Bullet 720 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.

## High Out-Of-Band (OOB) Rejection

Bullet 720 provides class-leading out-of-band rejection characteristics of >75dB for L1 and > 65dB for L5 band. It provides significant improvements in performance and robustness in environments with high interference and multipath.



## Key Features

- Dual Band (L1 and L5) Active Antenna with built-in LNA.
- Multi-constellation – GPS, GLONASS, Galileo & Beidou
- High Gain, low noise, high out-of-band rejection
- Built-in lightning surge 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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Characteristics	Specification		
Frequency Range	L1: 1559-1610 MHz L5: 1164-1214 MHz		
Gain	1559 MHz	40.8±3.0 dB	
	1575.42 MHz	42.9±3.0 dB	
	1610 MHz	37.9±3.0 dB	
	1164MHz	40.1±3.0 dB	
	1176.45 MHz	39.3±3.0 dB	
	1214 MHz	36.0±3.0 dB	
Output VSWR	2.0 typ.		
Noise Figure	3.5 dB typ. (Pre-Saw)		
Filter Out of Band Attenuation	F1= 1561 MHz	F1-50 MHz	>75 dB
	F2= 1601.5 MHz	F2+50 MHz	>83 dB
	F3= 1176.45 MHz	F3-50 MHz	>85 dB
	F4= 1201.5 MHz	F4+50 MHz	>81 dB
Polarization	RHCP		
Axial Ratio	3.0 dB typ.		
Impedance	50 ohms		
Operation Voltage	2.7V - 9V		
Current	26.0±3.0 mA (5.0±0.1V)		
	25.0±3.0 mA (3.0±0.1V)		

## Package

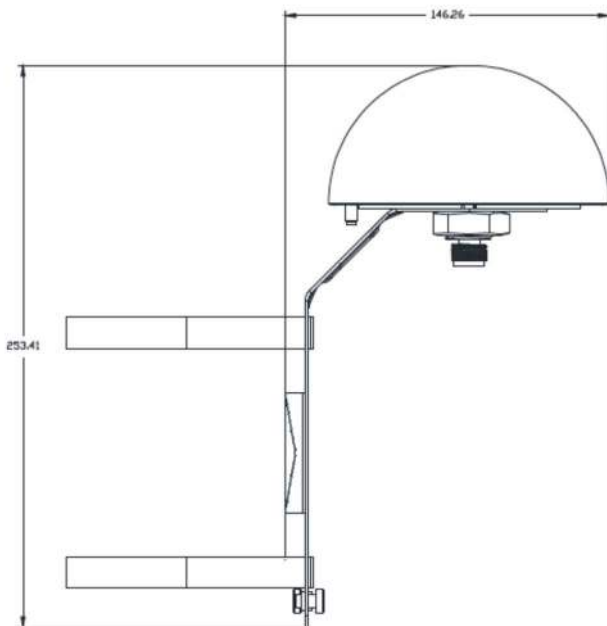
- Multiple installation options and pole diameters ½ to 3 ½ inch.
- 126.6 x 126.6 x 90.52 mm (L x W x H)
- Connector: N-type Jack

## Weight

- 530 g (Antenna only)
- 930 g (Antenna with brackets)

## Environmental Data, Quality & Reliability

- Operating temp. -40 °C to +85 °C
  - Storage temp. -55 °C to +105 °C
  - Humidity 5%-95% (non-condensing)
  - RoHS compliant (lead-free)
  - Green (halogen-free)
  - V0 Flammability Rated
  - ETSI-RED Compliant
  - Weatherproof with IPX7 compliance
  - Surge Protection: IEC-61000-4-5 compliant
1. Survivability < 28V
  2. From 2.7 - 2.9V, the gain will be 3 dB lower than specified.



Please go to [www.stepglobal.com](http://www.stepglobal.com) for the latest documentation and tools, part numbers and ordering information.

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