

# Bullet II HE GPS Antenna

## *Jam-Resistant Active GPS Antenna*

### Key Features and Benefits

- High performance in any environment
- Waterproof, weather-proof
- Resists harsh RF jamming
- Proven extra rugged, reliable

Whatever the environment—wet, cold, sunny, hot, harsh RF jamming—Trimble's Bullet™ II HE GPS antenna can take it, year after year. Designed primarily for stationary applications, the Bullet II HE (hostile environment) provides a perfect solution for manufacturers who need a fixed-site, rooftop GPS antenna. This antenna is also a high-quality solution for adding GPS RF signals to marine GPS navigation systems.

The antenna is housed in completely waterproof packaging designed to withstand exposure to shock, excessive vibration, extreme temperatures, rain, snow and sunlight. The enclosure is all plastic, including the threaded socket in the base of the antenna used for pole mounting, so there is no danger of corrosion.

The enclosure is a textured off-white color and is both weatherproof and waterproof. The threaded socket accepts either a 1"-14 straight thread (typical marine antenna mount) or a 3/4" pipe thread. The F-type antenna connector is located inside the threaded socket, which allows the antenna cable to be routed inside the pole and protects the cable connection for added reliability.

The Bullet II HE antenna is an active GPS antenna with 35-dB preamp and dual band-



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pass filters. The high-gain preamp allows the Bullet II HE to be used with up to 75 feet of RG-59 cable. The bandpass filters improve immunity to other RF signals for reliable performance in hostile RF jamming environments.

For over 15 years, Trimble has been producing GPS antennas renowned for their survivability in tough environments. The Bullet II HE is the third generation of the proven Bullet antenna family (more than

40,000 delivered) and offers all the reliability and performance benefits that this exceptional field experience provides.

In unforgiving environments, an antenna failure could be disastrous. Don't risk it. Select a proven, stress-tested, GPS antenna—the Trimble Bullet II HE GPS antenna.

# Trimble

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### ENVIRONMENTAL SPECIFICATIONS

|                        |  |                   |
|------------------------|--|-------------------|
| <b>Operating Temp:</b> | -40° C to +85° C                         |                   |
| <b>Storage Temp:</b>   | -55° C to +100° C                        |                   |
| <b>Vibration:</b>      | 0.04 <sup>2</sup> /Hz                    | 10 Hz to 500 Hz   |
|                        | 0.03g <sup>2</sup> /Hz                   | 500 Hz to 850 Hz  |
|                        | 0.02g <sup>2</sup> /Hz                   | 850 Hz to 1200 Hz |
| <b>Shock:</b>          | 40 g (11 m/sec sawtooth)                 |                   |
| <b>Humidity:</b>       | 95% R.H., non-condensing                 |                   |
| <b>Salt fog:</b>       | Mil. Std. 202F, Method 101D, Condition B |                   |
| <b>Waterproof:</b>     | Submersion to 1 meter                    |                   |

### PHYSICAL CHARACTERISTICS

|                    |                                       |
|--------------------|---------------------------------------|
| <b>Dimensions:</b> | 3.04" D x 2.94" H (77.3 mm x 74.6 mm) |
| <b>Weight:</b>     | 3.5 oz (100 grams)                    |
| <b>Enclosure:</b>  | Textured, off-white plastic           |
| <b>Connector:</b>  | F-type                                |
| <b>Mounting:</b>   | 1"-14 thread or 3/4" pipe thread      |

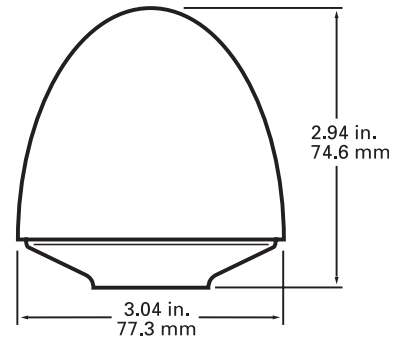
### TECHNICAL/PERFORMANCE SPECIFICATIONS

|                            |   |
|----------------------------|---|
| <b>Prime power:</b>        | +5 Volts DC (±10%)                          |
| <b>Power consumption:</b>  | 22 mA, 0.11 watt (nominal)                  |
| <b>Output impedance:</b>   | 50Ω   |
| <b>Frequency:</b>          | L1 (1575 MHz)                               |
| <b>Polarization:</b>       | Right-hand circular polarization (RHCP)     |
| <b>VSWR:</b>               | 2:1   |
| <b>Axial ratio:</b>        | 2 dB @ zenith      10dB above 10° elevation |
| <b>Gain:</b>               | 35 dB (nominal)                             |
| <b>Noise:</b>              | 2.75 dB (nominal)                           |
| <b>Pass-band width:</b>    | 50 MHz                                      |
| <b>Filtering:</b>          | -20 dBm @ 1626 MHz<br>-10 dBm @ 1500 MHz    |
| <b>Azimuth coverage:</b>   | 360° (omni-directional)                     |
| <b>Elevation coverage:</b> | 0° to 90° elevation (hemispherical)         |

### CABLE SPECIFICATIONS

|                             |                                       |
|-----------------------------|---------------------------------------|
| <b>Type:</b>                | RG-59                                 |
| <b>Impedance:</b>           | 75Ω                                   |
| <b>Capacitance:</b>         | 16.5 pF/foot (54.1 pF/meter)          |
| <b>Vel. of propagation:</b> | 84%                                   |
| <b>Shielding:</b>           | Foil and copper braid (100% coverage) |
| <b>Connectors:</b>          | Waterproof F-type                     |
| <b>Signal attenuation:</b>  | <10 dB for cable and connectors       |

### DIAGRAM



### ORDERING INFORMATION

You may visit our website for current information, part numbers, and ordering information at: <http://www.trimble.com/oem/timing.htm>

Specifications and descriptions are subject to change without notice.



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