



## GPS Hardmount Antenna

5V, 28dB, TNC Connector



*Revision 3*

*The specifications in this document are subject to change without Notice.  
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## **Key Features**

- Waterproof (submersible to 1 meter) and environmentally sealed
- Proven extra rugged, reliable
- Available in 'TNC' connector
- Very good ground plate and easier mounting with TNC cable right angle
- Designed for vehicles
- RoHS-Compliant (Pb-free)



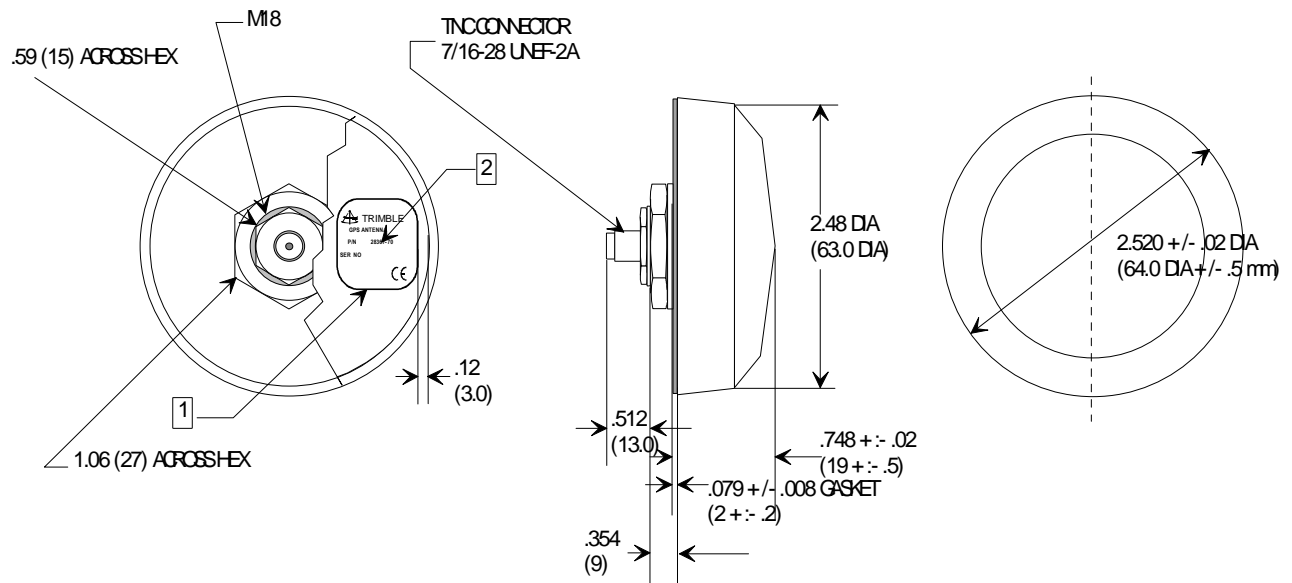
## **Presentation**

Housed in a compact, low-profile package, the Hardmount Antenna is well-suited to mobile positioning applications. The Hardmount Antenna is a miniature patch antenna with a 25 dB preamplifier. The antenna is designed for installation on vehicles with a 0.75 inch mounting hole. The antenna comes complete with gasket and mounting nut. The antenna may be installed on flat surfaces up to 0.1 inch thick.

## **SUMMARY OF THE CHARACTERISTICS**

SPECIFICATION	
Weight:	6.4 oz. (180g)
Dimensions:	2.48" dia. x 1.6" ht. (63mm dia. x 40.5 mm ht.)
Connector:	TNC
Mounting:	0.75 inch threaded mount
Operating Temp:	-40°C to + 85°C
Storage Temp:	-40°C to + 100°C
Prime Power:	4.75 $\pm$ 0.5 V
Humidity:	20% to 95% R.H.
Waterproof:	Submersible to 1 meter
Frequency:	L1 (1575.42 MHz)
Power Consumption:	40mA max
Impedance:	50 OHMS
Polarization:	RHCP
VSWR:	2.0 max
Vibration:	10~200 Hz. Log. sweep 3
Axial Ratio:	90° : 3.0 dB min. 20° : 6.0 dB min
Gain:	28.0 dB
Noise:	2.0 dB max (+23°C) 2.5 dB max. (+80°C)

## Mechanical



### 1.0 APPLICATION

THIS SPECIFICATION APPLY FOR THE ELECTRICAL AND MECHANICAL CONDITIONS OF GPS ANTENNA

### 2.0 SYSTEM

THIS ANTENNA SYSTEM CONSISTS OF TWO FUNCTIONAL BLOCKS LISTED BELOW.

- 2.1 RECEIVING ANTENNA
- 2.2 LNA

### 3.0 GENERAL

#### 3.1 ENVIRONMENTAL CONDITIONS

3.1.1 OPERATING TEMPERATURE	-40°C TO +85°C
3.1.2 STORAGE TEMPERATURE	-40°C TO +100°C
3.1.3 RELATIVE HUMIDITY	20 % TO 95 %

#### 3.2 ELECTRICAL SPECIFICATIONS

3.2.1 INPUT VOLTAGE	4,75 V +/- 0,5 V
3.2.2 POWER CONSUMPTION	40 mA MAX
3.2.3 OUTPUT CONNECTOR	TNC

#### 3.3 MECHANICAL SPECIFICATION

3.3.1 MOUNTING	NUT MOUNT
3.3.2 WATERPROOF	IMMERSION TO 1 METER WATER FOR 24 HOURS
3.3.3 SHOCK	50G : VERTICAL AXES 30G : ALL AXES
3.3.4 VIBRATION	10~200 Hz. LOG.SWEEP 3.0G (SWEEP TIME/ 15 MIN), 3AXIS
3.3.5 CONFIGURE AND DIMENSION	SEE ATTACHED FIGURE
3.3.6 WEIGHT	180 g MAX

<b>4.0</b>	<b>ANTENNA</b>	
<b>4.1</b>	<b>FREQUENCY RANGE</b>	<b>1,575,42+/- 1.023 MHz</b>
<b>4.2</b>	<b>GAIN</b>	<b>90° : 3.0dBi MIN 20° : -5.0dBi MIN (MOUNTED ON THE 65mm X65 mm SQUARE GROUND PLANE)</b>
<b>4.3</b>	<b>POLARISATION</b>	<b>RHCP</b>
<b>4.4</b>	<b>AXIAL RATIO</b>	<b>90° : 4.0dB MAX 10° : 6.0Dbn MAX (MOUNTED ON THE 65mm X65 mm SQUARE GROUND PLANE)</b>
<b>5.0</b>	<b>LNA</b>	
<b>5.1</b>	<b>FREQUENCY RANGE</b>	<b>1,575,42 +/- 1.023MHz</b>
<b>5.2</b>	<b>GAIN</b>	<b>27dB MIN</b>
<b>5.3</b>	<b>NOISE FIGURE</b>	<b>1.8dB MAX (+25°C +/- 5°C) 2.3dB MAX (+80°C)</b>
<b>5.1</b>	<b>OUT OF BAND RELECTION</b>	
		<b><math>f_o=1,575,42</math> MHz      7dB MIN</b>
		<b><math>f_o\pm 20</math> MHz      7dB MIN</b>
		<b><math>f_o\pm 30</math> MHz      12dB MIN</b>
		<b><math>f_o\pm 50</math> MHz      20dB MIN</b>
		<b><math>f_o\pm 100</math> MHz      30dB MIN</b>
<b>5.1</b>	<b>OUTPUT IMPEDANCE</b>	<b>50Ω</b>
<b>5.2</b>	<b>OUTPUT VSWR</b>	<b>2.0 MAX</b>
<b>6.0</b>	<b>TOTAL SPECICATIONS (THROUGH ANTENNA, LNA, CABLE AND CONNECTOR)</b>	
<b>6.1</b>	<b>FREQUENCY RANGE</b>	<b>1,575,42 +/- 1.023MHz</b>
<b>6.2</b>	<b>GAIN</b>	<b>28dBi MIN (-40°C ~+ 85°C)</b>
<b>6.3</b>	<b>NOISE FIGURE</b>	<b>2.0DbMAX (+23°C) 2.5dB MAX (+80°C)</b>
<b>6.1</b>	<b>OUTPUT IMPEDANCE</b>	<b>50Ω</b>
<b>6.2</b>	<b>OUTPUT VSWR</b>	<b>2.0 MAX</b>