



## TRIMBLE GPS ANTENNAS

### GPS ANTENNAS FOR EMBEDDED SYSTEMS

#### BENEFIT HIGHLIGHTS

- Active GPS antennas include low noise amplifier
- Three form factors: Magnetic Mount, Unpackaged, and Bulkhead
- Various connector options
- 3 V or 5 V supply voltage
- Ideal for complete solutions

#### KEY FEATURES

- Magnetic Mount, Unpackaged, and Bulkhead micropatch active GPS antennas
- Internal low noise amplifier (LNA)
- Waterproof, corrosion-resistant (packaged versions only)
- Mounting / Connector choices:
  - Magnetic mount: MCX, SMA, SMB connectors
  - Unpackaged: H.FL right-angle connector
  - Bulkhead: TNC connector
- Specifications:
  - Frequency range: 1,575.42 MHz
  - Gain: up to 28 dBi @ 25 °C
  - Output Impedance: 50 Ω
  - LNA Noise Figure: as low as 1.5 dB @ 25 °C

#### YOUR CHOICE OF GPS ANTENNAS

Trimble offers a variety of active micropatch antenna products for use with Trimble's GPS receivers to suit many applications.

All packaged antennas are waterproof and corrosion resistant. All antennas include an internal low noise amplifier (LNA) to provide sensitive performance in the toughest environments (-40 °C to +85 °C with high humidity).

Trimble's antenna products are built with the best components and meet the highest production quality standards.

Are you designing a system with a Trimble GPS receiver? Are you looking for top-tier positioning performance, accuracy, and sensitivity? These antennas complete your GPS solution from Trimble.

#### FORM FACTORS OF YOUR CHOICE

Trimble GPS antennas are available in several form factors, providing choices of housing, mounting and connectors, as well as choice of supply voltage (3 V or 5 V).

**Magnetic Mount** antennas, with their small size and slim profile, are designed for quick and convenient installation on, or inside, vehicles or equipment. The tough plastic housing and magnetic base enable them to withstand exposure to shock, vibration, and weather extremes. Available in both 3 V and 5 V models, they additionally provide a choice of connector type.

The 3 V **Unpackaged** antenna is embeddable within devices and systems. It has the lowest power consumption (5 to 13 mA), an H.FL right-angle connector, and an 85 mm cable.

**Bulkhead** models, in both 3 V and 5 V, are designed for drill-through mounting on vehicle roof and trunk panels. The tough plastic housing and the feedthrough threaded nut mount enable these units to withstand exposure to shock, vibration, and weather extremes. These models feature a TNC connector.

#### SUPPLY VOLTAGES TO SUIT RECEIVERS

The 5 V antennas are designed for use with Trimble's Lassen SK II GPS receiver and with receivers from other manufacturers.

The 3 V antennas, which are ideal for GPS devices requiring lower power consumption, are designed for use with receivers from other manufacturers and with the following GPS receiver modules from Trimble:

- Condor
- Copernicus
- Lassen iQ
- Lassen LP
- Lassen SQ
- Silvana



# TRIMBLE GPS ANTENNAS

## GPS ANTENNAS FOR EMBEDDED SYSTEMS

### MODEL COMPARISON

Differentiating Features and Key Specifications.<sup>1</sup>

MODEL TYPE	MOUNT	DIMENSIONS	WEIGHT	CABLE LENGTH	SUPPLY VOLTAGE	POWER CONSUMPTION	OUTPUT CONNECTOR	CABLE TYPE	PART NUMBER
<b>Magnetic Mount</b> 66800-XX	Magnetic	37.4 mm x 34 mm x 12.9 mm	25 g (without cable)	5 m	5 V	30 mA max	SMB <sup>2</sup>	RG-174	66800-00
					3 V	20 mA max 15 mA typ	SMA <sup>2</sup>	RG-174	66800-50
							SMA <sup>2</sup>	RG-174	66800-52
<b>Unpackaged</b> 66801-XX	Embedded	22 mm x 21 mm x 7.5 mm	20 g	85 mm	3 V	5 mA to 13 mA	H.FL <sup>3</sup>	RF-MF507	66801-00
<b>Bulkhead</b> 70228-XX	Threaded Nut Mount	64.5 mm dia x 40 mm	150 g	N/A	5 V	35 mA max	TNC	N/A	70228-70
					3 V	35 mA max	TNC	N/A	70228-00

1. Standard models; special order models are available.

2. Straight plug.

3. Right-angle H.FL plug (HFL-LP-DFS111-A).

### ELECTRICAL SPECIFICATIONS ELECTRICAL SPECIFICATIONS

Differentiating Features and Key Specifications.

	3 V VERSION	5 V Version
<b>Supply Power</b> Magnetic Mount DC Levels Consumption	3.0 V ±0.3 V 20 mA max 15 mA typ	5.0 V +0.5 V or -0.75 V 30 mA max
<b>Supply Power</b> Unpackaged DC Levels Consumption	3.0 V ±0.3 V 5 mA to 13 mA max	N/A
<b>Supply Power</b> Bulkhead DC Levels Consumption	3.0 V ±0.5 V 35 mA max	5.0 V +0.25 or -0.75 V 35 mA max
<b>Frequency Range</b>	1,575.42 MHz ±1.023 MHz	
<b>Gain</b> Magnetic Mount & Unpackaged	27 dBi ±3dBi @ typical temperature ±4dBi @ operating temperature	
<b>Bulkhead</b>	28 dBi ±3dBi @ typical temperature ±4dBi @ operating temperature	
<b>Output Impedance</b>	50 Ω	
<b>LNA Noise Figure</b> Magnetic Mount & Unpackaged	27 dBi ±3dBi @ typical temperature ±4dBi @ operating temperature	
<b>Bulkhead</b>	1.8 dB max (25 °C) 2.3 dB max (85 °C)	3.3 dB max (25 °C) 3.8 dB max (85 °C)

Gain is for when antenna module is mounted on 60 mm x 60 mm ground plane.

Max is at operating temperature (-40 °C to +85 °C).

Typ is at typical temperature (25 °C ±5 °C).

### ENVIRONMENTAL SPECIFICATIONS

Temperature

Typical . . . . . 25 °C ±5 °C

Operating . . . . . -40 °C to +85 °C

Storage . . . . . -40 °C to +100 °C

Humidity . . . . . 20% to 95%

Waterproofing . . . . . Waterproof (JIS D0203 S2)

(Magnetic Mount & Bulkhead only)

Shock

Vertical axis . . . . . 50 G

All axis . . . . . 30 G

Vibration

10 Hz to 200 Hz . . . . . Log sweep 3.0 g

(Sweep time: 15 minutes) 3 axis

Magnetic Mount Pulling Force

Pulling Force . . . . . 29.4 N

Withstand . . . . . Up to speed of 180 Km/h

Cable Pulling Force . . . . . 49 N minimum (room temp)

### ORDERING INFORMATION

MODEL TYPE	PART NUMBER	ORDER QUANTITY			
Magnetic Mount	66800-00	20	80	400	400 x n
	66800-40				
	66800-50				
	66800-52				
Unpackaged	66801-00	1	120	480	400 x n
Bulkhead	70228-70	1	96	480	400 x n
	70228-00				400 x n

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