

GPS Antenna

| GP - 313P™



Built to take advantage of the GLONASS system/constellation of satellites as well as standard GPS, this robust external antenna is packaged in a low-profile water-resistant housing.

External GPS/GLONASS antennas provide increased flexibility and installation options as well as the potential for enhanced reception of GPS/GLONASS signal for those products with built-in GPS/GLONASS antennas.

Specifications

Feature	Implementation
GNSS	GPS+GLONASS
Power Supply	Supply voltage: 3.0V~4.3V typical: 3.3V
Power Consumption	Acquisition: 26mA @VCC=V_BCKP=3.3V (GPS) Tracking: 22mA @VCC=V_BCKP=3.3V (GPS) Acquisition: 30mA @VCC=V_BCKP=3.3V (GPS+GLONASS) Tracking: 26mA @VCC=V_BCKP=3.3V (GPS+GLONASS) Standby: 1mA @VCC=V_BCKP=3.3V Backup: 7uA @V_BCKP=3.3V
Receiver Type	GPS L1 1575.42MHz C/A Code GLONASS L1 1598.0625~1605.375MHz C/A Code
Sensitivity	Acquisition: -148dBm Re-acquisition: -160dBm Tracking: -165dBm

TTFF (EASY enabled)	Cold start: 15s typ. @-130dBm Warm start: 5s typ. @-130dBm Hot start: 1s typ. @-130dBm
TTFF (EASY disabled)	Cold start (Autonomous): 35s typ. @-130dBm Warm start (Autonomous): 30s typ. @-130dBm Hot start (Autonomous): 1s typ. @-130dBm
Horizontal Position Accuracy (Autonomous)	<2.5m CEP @-130dBm
Max Update Rate	Up to 10Hz, 1Hz by default
Accuracy of 1PPS Signal	Typical accuracy <15ns (Time service is not supported) Time pulse width 100ms
Velocity Accuracy	Without aid: 0.1m/s
Acceleration Accuracy	Without aid: 0.1m/s ²
Dynamic Performance	RG 58 or others
Serial Port	UART Port: TXD1 and RXD1 Supports baud rate from 4800bps to 115200bps, 9600bps by default UART port is used for NMEA output MTK proprietary commands input and firmware upgrade
Temperature Range	Normal operation: -20°C ~ +70°C Storage temperature: -45°C ~ +110°C
Physical Characteristics	Size: 108 ×108 ×100mm Weight: Approx. 300g (without cable)

Antenna Mounting Considerations

CAUTION

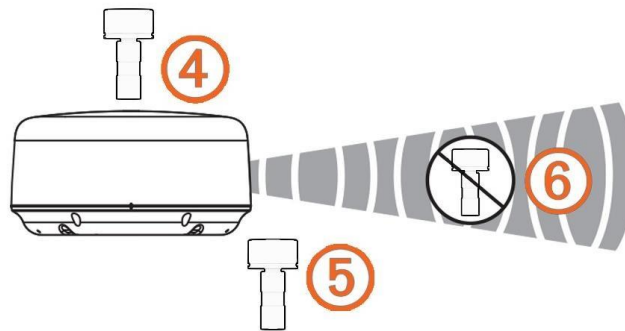
Do not install or store the antenna near strong magnets, including speakers. A strong magnetic field can damage the antenna.

You can mount the antenna on a flat surface or attach it to a standard 1 in. OD, 14 threads per inch, pipe-threaded pole (not included). You can route the cable outside of the pole or through the pole. For best performance, consider these guidelines when selecting the antenna mounting location.

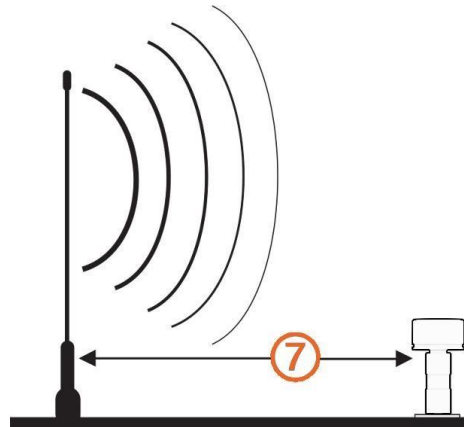
- To ensure the best reception, the antenna should be mounted in a location that has a clear, unobstructed view of the sky in all directions ①.



- The antenna should not be mounted where it is shaded by the superstructure of the boat ②, a radome antenna, or the mast.
- The antenna should not be mounted near the engine or other sources of Electromagnetic Interference (EMI) ③.
- The antenna should not be mounted near known ferrous metal objects such as a toolbox or compass.
- If a radar is present, the antenna should be mounted above the path of the radar ④. If necessary, the antenna may be mounted below the path of the radar ⑤.



- The antenna should not be mounted directly in the path of the radar ⑥.



- The antenna should not be mounted within 1 m (3 ft.) of a VHF radio antenna or the path of a radar ⑦.

Testing the Mounting Location

1. Temporarily secure the antenna in the preferred mounting location and test it for correct operation.
2. If you experience interference with other electronics, move the antenna to a different location, and test it again.

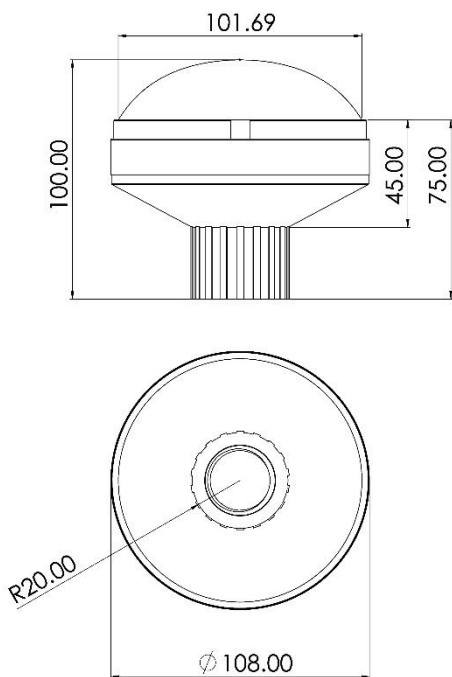
3. Repeat steps 1–2 until you observe full or acceptable signal strength.
4. Permanently mount the antenna.

NOTICE

If you are mounting the bracket on fiberglass with screws, it is recommended to use a countersink bit to drill a clearance counterbore through only the top gel-coat layer. This will help to avoid cracking in the gel-coat layer when the screws are tightened.

Dimensions

| Unit: mm



Eight-Strand Cable Wiring Table			
DB9 Pin No.	Wire Color	Signal	Comment
4	Red	Input Power	6-24 V
5	Black	GND	
1	Orange	232 TX	
2	Blue	422 TX-	
6	Yellow	422 TX+	
9	White	Control 2	Baud Rate Set
8	Green	Control 1	Baud Rate Set
-	Gray	GND-232	

Compatible Products



RS-422 TO USB CONVERTER

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