GPS antenna instructions

I. Product overview

GPS antenna is a device used to receive GPS satellite signals, which is widely used in vehicle navigation, smart phone positioning, intelligent logistics, smart wear, vehicle tracking and other fields. GPS antennas are classified into active and passive antennas according to their functions and application scenarios. The active antenna integrates signal amplification circuit, which is suitable for the environment where the signal is weak or the interference is large, while the passive antenna has a simple structure and is suitable for the occasions where the positioning accuracy is not high.

2. Technical specifications

(1) Working frequency band:

- GPS L1 band: 1575.42±10MHz.
- Antenna gain: 31.73dBi.

(2) Polarization mode:

- Right-handed circular polarization (RHCP).

(3) Impedance and standing wave ratio:

- Impedance: 50Ω.
- Output standing wave ratio: ≤1.5.

(4) Low Noise Amplifier (LNA) :

- Gain: 28±2dBi.
- Noise coefficient: ≤2.0dB (typical value).

(5) Environmental adaptability:

- Operating temperature: -40℃ ~ +80℃.
- Storage temperature: -45℃ ~ +85℃.
- Waterproof rating: IP67.

(6) Other features:

- Antenna pattern beam width, low elevation signal reception effect is good.
- The appearance is made of UV-resistant and anti-aging engineering plastics.

3. working principle

The GPS antenna receives the weak electromagnetic wave signal emitted by the satellite, amplifies the signal using the internal low noise amplifier (LNA), and then transmits the amplified signal to the GPS receiver. The active antenna is integrated with signal amplifier circuit and power module, which can further improve the sensitivity of signal reception and anti-interference ability.

4. Application scenarios

(1) Vehicle navigation: Used for vehicle navigation system to provide real-time positioning and navigation guidance.

(2) Smart phone: Integrated in smart phone, support positioning function.

(3) Intelligent logistics: Embedded logistics transport vehicles to achieve visual management of logistics processes.

(4) Smart wear: such as children's watches, elderly locators, etc., to provide real-time positioning.

(5) Vehicle tracking: It is used for real-time tracking and monitoring of private cars, official cars and other vehicles.

5. Installation instructions

(1) Installation position: Select an open and unobstructed area to avoid metal shielding to ensure that the antenna can receive satellite signals normally.

(2) Power connection: The active antenna needs an external power cable, and the passive antenna only needs a signal cable.

(3) Waterproof: After securing the antenna, waterproof the antenna base and cable connection.

(4) Installation fixture: Use U-shaped fixture or pole to fix, pole diameter range of φ30 ~ 60mm.

6. Precautions

(1) Avoid use in an environment with strong electromagnetic interference.

(2) Periodically check the antenna connection and waterproof condition to ensure its normal operation.

(3) In bad weather or complex environments, the signal reception effect may be affected.

FCC Warning Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1)This device may not cause harmful interference.

(2)This device must accept any interference received, including interference that may cause undesired operation.