



Shanghai Mini Deer Robot Co., LTD.



specification

document number: _____

Product model number: R70 Smart

Product name: GNSS receiver

Preparation / Date:

Review / Date:

Approved / Date:



◆ R70 Smart GNSS Receiver

R70 Smart GNSS The receiver is a new multi-functional high-precision GNSS receiver independently developed by Mini Deer, with built-in GNSS high-precision board card, gyro module, 4G module, etc. It is suitable for precision agriculture, construction machinery, intelligent driving and many other application scenarios.

◆ Technical feature

- 1, high precision and low power consumption, using Beidou, GPS, GLONASS, Galileo, QZSS and other multi-star multi-frequency system, can ensure the positioning accuracy in a variety of complex environments;
2. Compatible with a variety of GNSS high-precision board cards, which can realize the single Beidou solution calculation;
- 3, wide voltage power supply, voltage range of 3-6V DC, with positive and negative polarity reverse connection protection;
- 4, integrated design, convenient installation, standard IP67 waterproof and dustproof design;
- 5, the integration of inertial navigation module, all the terrain can ensure the accuracy;
6. Use professional Dechi communication interface.



◆ Technical parameter

1. Signal tracking

1408 channel

BDS B1、B2、B3、B1C、B2a、B2b

GPS L1C/A、L1C、L2C、L2P (Y)、L5

GLONASS G1、G2、G3

Galileo E1、E5a、E5b、E6

QZSS L1、L2、L5

NavIC L5

SBAS L1C/A

Cold start time: <12S

Initialization time: <5s (typical value)

RTK initialization reliability:> 99.9%

Recapture: <1s

2. Accuracy index

point positioning:

Plane surface: 1.5m

Elevation: 2.5m

RTK accuracy:

Plane: $\pm (8 + 1.010^{-6} D)$ mm Note 1

Elevation: $\pm (15 + 1.010^{-6} D)$ mm

Speed accuracy: 0.03 m/s



Gyro GNSS fusion roll or pitch accuracy: 0.4°

Gyro GNSS fusion heading accuracy: 0.5°

3. Electrical parameters

Power consumption: 3.0W

Power supply voltage: 36V DC

4. Physical properties

Operating temperature: $-45^{\circ}\text{C} \sim +75^{\circ}\text{C}$

Storage temperature: $-55^{\circ}\text{C} \sim +85^{\circ}\text{C}$

Dimensions: 141mm 55mm

Indicator light: 1 power supply light, 1 difference signal light, 1
satellite light

Protection level: IP67

Impact and vibration: 2m drop resistance

Weight: 450g

5. Data interface

Data output: NMEA-0183, binary code

Data refresh rate: output, 100 Hz IMU original output, 50Hz RTK
positioning result output

Baud rate: 9600~460800

Dechi connector: including one power supply, two RS232, one CAN,
one USB

Differential format: RTCM3.0/3.2



Communication: Full netcom 4G module

Data link antenna: 1

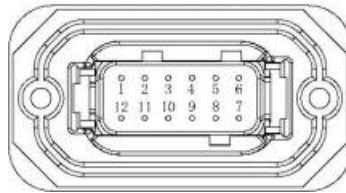
GNSS antenna interface: 1 out

6,4G frequency band

B1/2/3/4/5/7/8/12/13/20/38/40/41

Note 1: D is the baseline distance in mm

◆ Interface definition

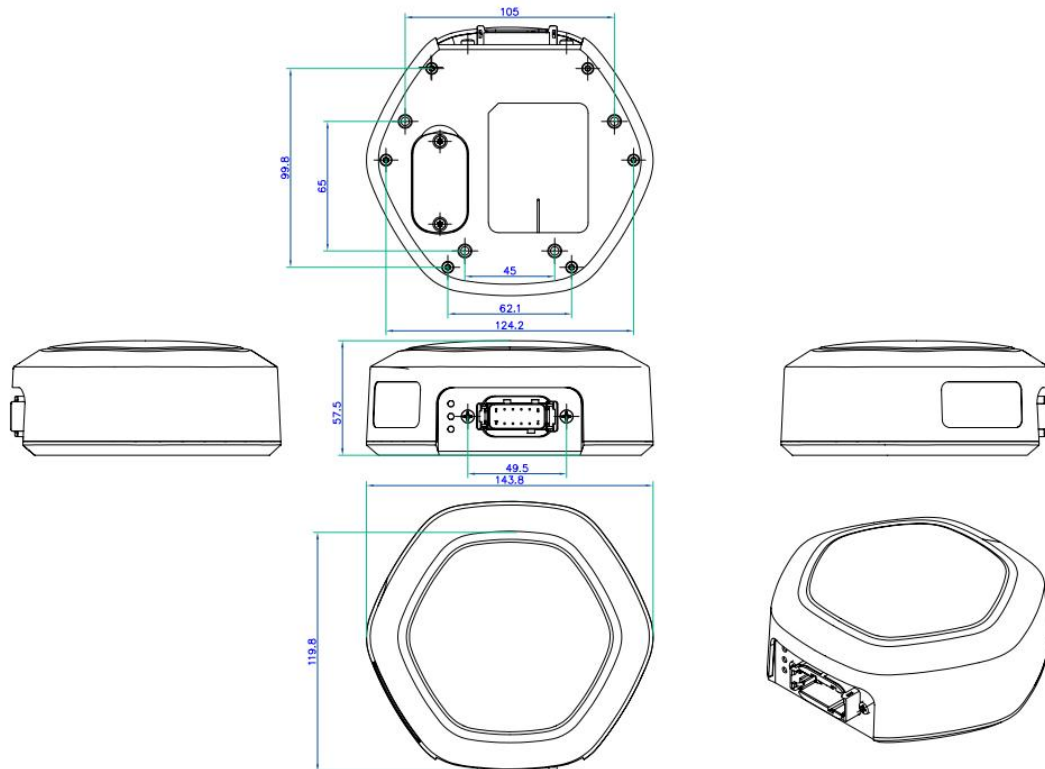


PIN	definition	port
1	TX	COM
2	RX	
3	USB-D+	USB
4	USB-D-	
5	POW	36V DC
6	POW	
7	GND	



8	GND	
9	CL	CAN
10	CH	
11	RX	CONFIG
12	TX	

◆ Outline dimension





◆ Notice

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, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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 equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.