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## Mini Deer Robot R70 Smart GNSS Receiver



## Product Specifications

**Document Number:** Product model number: R70 Smart

**Product Name:** GNSS receiver

**Manufacturer:** Shanghai Mini Deer Robot Co., LTD.

**Address:** Building 505, No.1, China Beidou Industrial Technology Innovation West Hongqiao Base (Gaoguang Road Park), No.99, Lane 215, Gaoguang Road, Qingpu District, Shanghai

## Product Information

The R70 Smart GNSS Receiver by Shanghai Mini Deer Robot Co., LTD. is a high-precision GNSS receiver suitable for various applications such as precision agriculture, construction machinery, and intelligent driving. It features multi-star multi-frequency system support including Beidou, GPS, GLONASS, Galileo, QZSS, and more to ensure accurate positioning in complex environments.

## Technical Features

1. High precision and low power consumption
2. Compatible with various GNSS high-precision board cards
3. Wide voltage power supply range of 36V DC
4. Integrated design with IP67 waterproof and dustproof rating
5. Inertial navigation module for accuracy in all terrains
6. Professional Dechi communication interface

## Technical Parameters

- Signal Tracking: 1408 channel
- Cold Start Time:

## Product Usage Instructions

1. **Power Supply:** Ensure the voltage supplied is within the range of 36V DC with correct polarity.
2. **Installation:** Mount the receiver securely using the integrated design for easy installation.
3. **Communication:** Utilize the professional Dechi communication interface for data exchange.
4. **Maintenance:** Regularly check for dust or water ingress, and ensure proper

functioning of all components.

## **Shanghai Mini Deer Robot Co., LTD.**

### **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 36V 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 terrain can ensure the accuracy;
6. Use a professional Dechi communication interface.

### **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

## **Accuracy index**

### **point positioning:**

Plane surface: 1.5m Elevation: 2.5m

### **RTK accuracy:**

- **Plane:**  $\pm (8 + 1.010 \cdot 10^{-6} D)$  mm Note 1
- **Elevation:**  $\pm (15 + 1.010 \cdot 10^{-6} D)$  mm
- **Speed accuracy:** 0.03 m/s
- Gyro GNSS fusion roll or pitch accuracy:  $0.4^\circ$
- Gyro GNSS fusion heading accuracy:  $0.5^\circ$

## **Electrical parameters**

- Power consumption: 3.0W
- Power supply voltage: 36V DC

## **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

## **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,

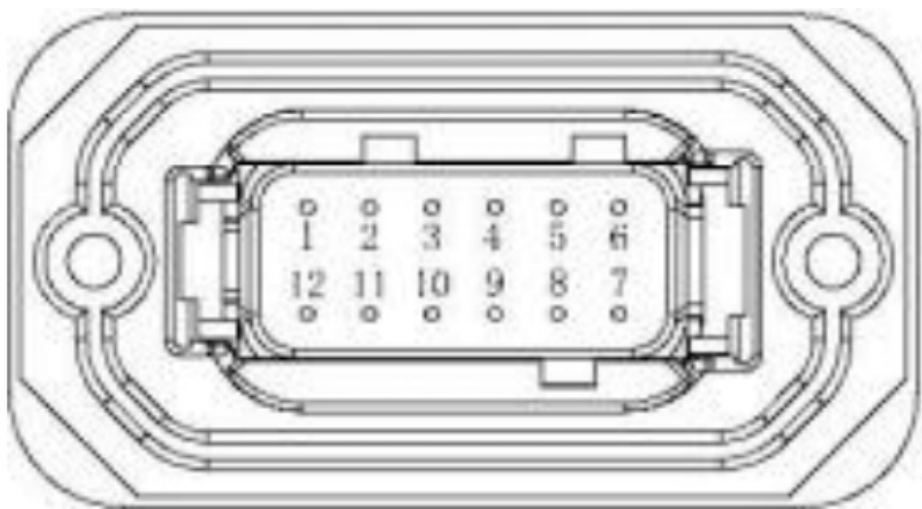
**one USB**

- 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**

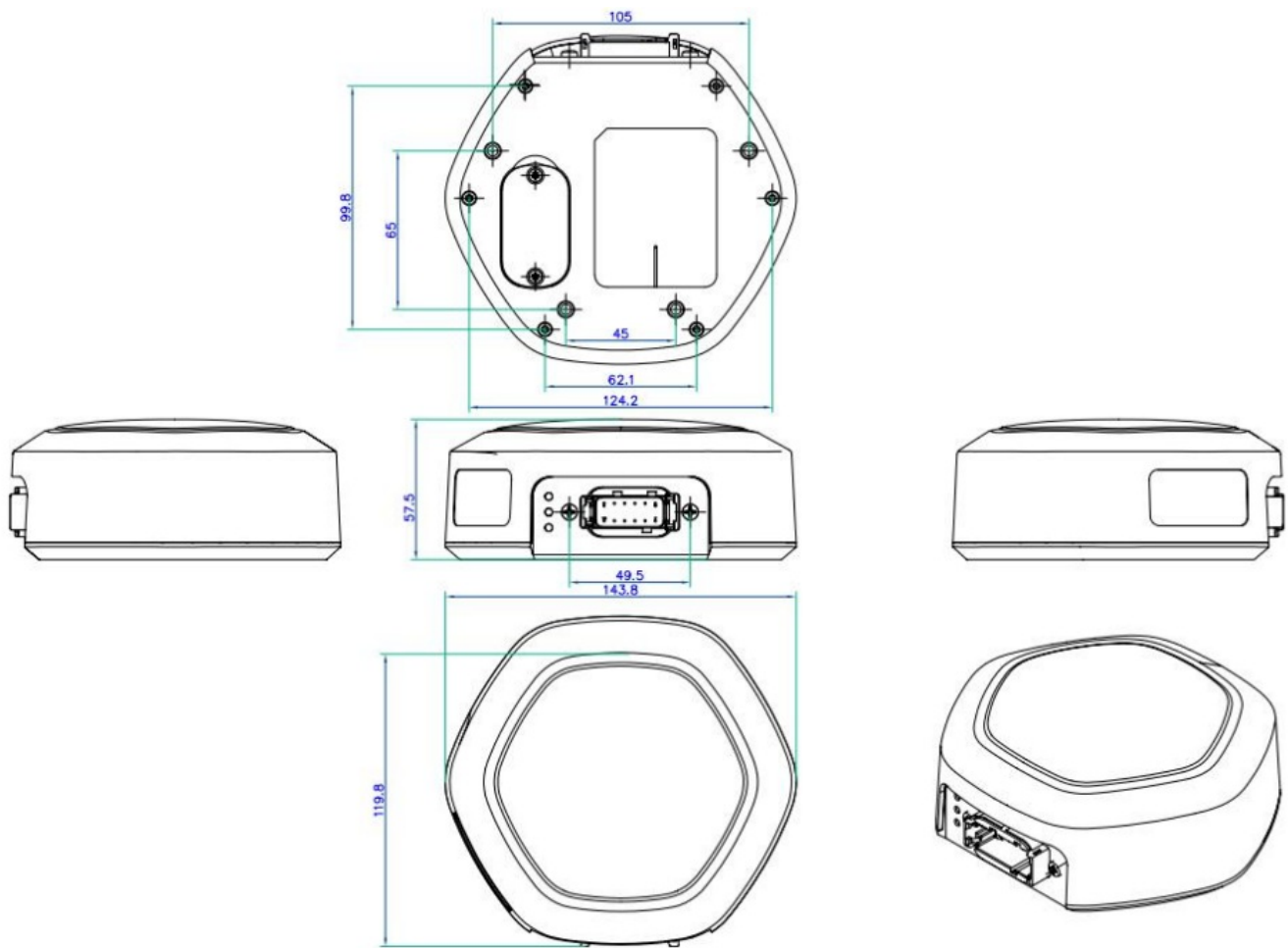


PIN	definition	port
1	TX	COM
2	RX	
3	USB-D+	

4	USB-D-	USB
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.

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## **FAQs**

**Q: What is the purpose of the R70 Smart GNSS Receiver?**

**A:** The R70 Smart GNSS Receiver is designed for high-precision positioning in applications such as precision agriculture, construction machinery, and intelligent driving.

## **Documents / Resources**



[Mini Deer Robot R70 Smart GNSS Receiver \[pdf\]](#) Owner's Manual  
2BKEC-R70SMART, 2BKECR70SMART, r70smart, R70 Smart GNSS Receiver, R70 Smart, GNSS Receiver, Receiver

## References

- [User Manual](#)

Mini Deer

Robot

2BKEC-R70SMART, 2BKECR70SMART, GNSS Receiver, Mini Deer Robot, R70 Smart, R70 Smart GNSS Receiver, r70smart, Receiver

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