

User manual



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1. Product Introduction

RTK Position Ground Device is mainly used as an accessory to the CROSS STARS III UAV. RTK Position Ground Device mainly provides RTCM data for the aircraft and sends the data to the ground Communication Integration Device through wireless communication. The RTK Position Ground Device can work continuously more than 8 hours with Lithium-Ion Rechargeable Battery RTK-BAT-6700.

2. Product Main Characteristics

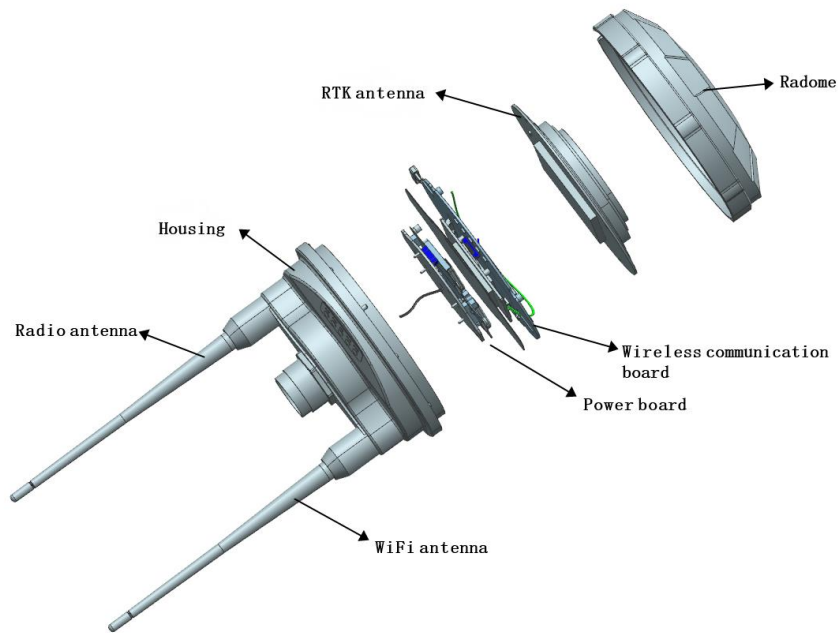
- Send data through wireless communication, make sure the long-distance transmission of positioning data;
- Simple operation, only need to supply power to RTK Position Ground Device, and RTK Position Ground Device can work by itself without any other operation;
- The state visible. There are LED indicators, which can easily tell you the current status of RTK Position Ground Device;
- There are 4 power LED, which can clearly display the remaining power of the battery;
- Lithium-Ion Rechargeable Battery RTK-BAT-6700 with BMS function which with short circuit protection, overvoltage protection, undervoltage protection, overcurrent protection, etc.

3. Product Description

As an important accessory of the CROSS STARS III UAV, RTK Position Ground Device and Lithium-Ion Rechargeable Battery RTK-BAT-6700 work together to make up the RTK position system.

The RTK Position Ground Device`s introduction as below:

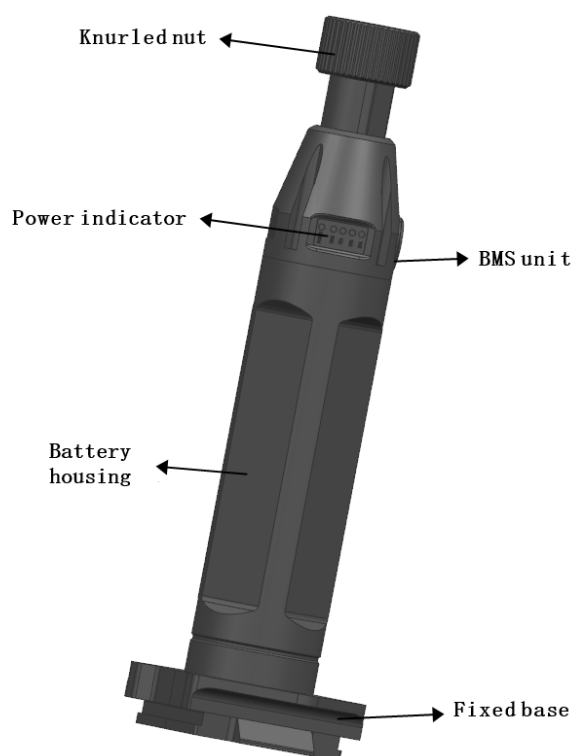
Weight: 926g, size: $\Phi 160 \times 280$ mm, the body can be disassembled into the following components, as shown in the figure below:



1. **Radome:** The sealing ring in it which can effectively prevent dust and rain. The plastic material which has no impact on the satellite signal received by the antenna.
2. **RTK antenna:** The combined antenna can receive GPS L1/L2, BD B1/B2/ B3, GLONASS G1/G2 and other satellite signals, with strong comprehensive signal quality.
3. **Wireless communication board:** Through the wireless module to transfer the RTK signals to the CROSS STARS III UAV.
4. **Power board:** The power supply for the whole equipment`s requirements.
5. **Housing:** Integrated design, providing installation support for internal circuit board and RTK antenna.
6. **Radio antenna:** Send out the electromagnetic signals from the radio module with a certain frequency(903-927.2MHz).
7. **WiFi antenna:** Send out the electromagnetic signals from the WiFi module with a certain frequency.

The Lithium-Ion Rechargeable Battery RTK-BAT-6700`s introduction as below:

The weight: 919g, size: 280*100*80mm, RTK-BAT-6700 can be divided into the following components, as shown in the figure as below:



1. **Knurled nut:** It is connected with RTK Position Ground Device to fix RTK Position Ground Device and RTK-BAT-6700 together.
2. **Battery housing:** Metal integrated shell with lithium-ion battery cell and BMS protection board installed inside.
3. **Power indicator:** The LEDs indicates the current remaining capacity of the battery.
4. **BMS Unit:** The function such as balance the battery cells, overvoltage protection, undervoltage protection, short-circuit protection, etc.
5. **Fixed base:** It can easily fix the battery on the tripod.

4. Product Parameter Description

RTK Position Ground Device is a special supporting ground equipment for CROSS STARS III UAV. It is convenient to carry, simple to assemble, operate and easy to understand the status display, and can provide the RTCM data for UAV reliably.

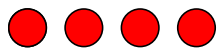
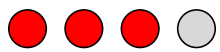
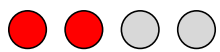
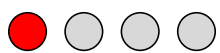

RTK Position Ground Device DGNS-GH Product parameter table

Num	Item	Parameter
1	Overall weight	1845g
2	Size	Φ160*362mm
3	Positioning accuracy	Horizontal: 1cm+1ppm
		Vertical: 1.5cm+1ppm

4	GNSS signal support	GPS L1/L2, BD B1/B2/B3, GLONASS G1/G2
5	Communication distance	≥1km
6	Wireless frequency	WIFI: 5.18-5.24GHz(MIC) 5.18-5.24GHz,5.745-5.825GHz(CE/UKCA/FCC) 2.412-2.462GHz(FCC) 2.412-2.472GHz(CE/UKCA/MIC) SRD Radio: 903-927.2MHz
7	Battery mode	4S2P
8	Input power	DC20-28V/30W or DC14.8V (supplied via built-in battery)
9	Battery capacity	6700mAh,99.16Wh
10	Operating temperature	-20°C ~ +55°C

5. Additional Information

Power display: 4 indicators

	Battery remaining 100%
	Battery remaining 75%
	Battery remaining 50%
	Battery remaining 25%
	Battery remaining 0%

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

NOTE: 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.

FCC Statement: 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.

The equipment complies with FCC Radiation exposure limit set forth for uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.