S-RTK100

Portable RTK Module

2022. 10   V1.0

FOXTECH

Content

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Introduction

      S-RTK100 is a high-precision satellite receiver, supporting the world's major GNSS and multi-channel receive. Using multiple data transmission paths, as well as high-performance sensors, S-RTK100 can provide real-time differential data, so that it obtains centimeter-level three-dimensional positioning data, to provide accurate and reliable system solutions for high-precision application needs. The S-RTK100 can be assembled with the SLAM100, mounted on a backpack, or used alone as a mobile RTK device, providing flexible applications and high accuracy positioning data acquisition.

      S-RTK100 supports 4G communication, so that users can obtain data stably. S-RTK100 has high level protection ability, with good waterproof and dust-proof performance, small size and light weight, easy to carry, easy to set up and use.

Package

No.	Item	Description	Qty
1	S-RTK100	/	1
2	Aviation Cable	/	1
3	Memory Card	High Speed SDHC 32GB	1
4	Card Reader	High Speed Reader (SD+TF)	1

Description
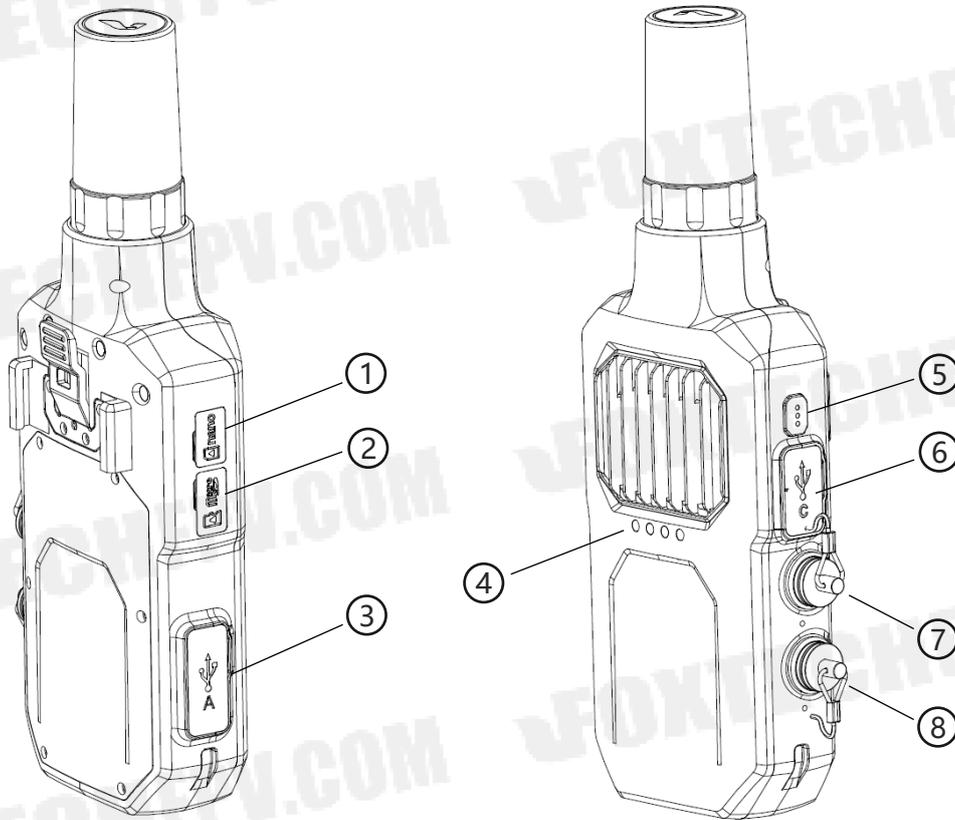
① Nano-SIM Slot　　　⑤ Mode Switch

② Micro-SD Slot　　　⑥ Type-C (20V)

③ USB-A　　　　　　⑦ Aviation Plug-1

④ Indicator　　　　　⑧ Aviation Plug-2

Specification

Hardware

Physical Parameter	Material	Plastic, Aluminum Alloy
	Size	196 mm×80 mm×39 mm
	RTK Module Weight	203g
	Bracket Weight	20g
Environment Parameter	Protection Level	IP54
	Working Temp	-20°C~50°C
	Storage Temp	-20°C~55°C
Power	Type-C Exterior Power	20V
	Aviation Plug Power	12V-20V

NOTE

● The S-RTK100 is splash, water, and dust resistant with all ports and protective covers securely attached, and has been tested under controlled laboratory conditions to achieve an IP54 rating in accordance with IEC 60529:2013. Splash, water and dust resistance is not permanent and protection may deteriorate due to daily use. Do not use the S-RTK100 in bad weather conditions such as rain, snow or lightning.

● The protection level of the S-RTK100 will not be guaranteed when either port and the protective cover are open, and care should be taken to protect against water and dust during use.

● Please refer to the instruction manual for cleaning and drying instructions; damage due to immersion in liquids is not covered by the warranty.

Performance Specification

GNSS Bands	BDS B1/B2 GPS L1/L2 GLONASS L1/L2 Galileo E1/E5b*
Single Point Positioning (RMS)	Horizontal: 1.5m Elevation: 3.0m
DGPS(RMS)	Horizontal: 0.4m Elevation: 0.8m
RTK(RMS)	Horizontal: 1cm+1ppm Elevation: 1.5cm+1ppm
Data Type	NMEA-0183， Unicore*
Data Update Rate	20Hz
Time Precision Rate(RMS)	20ns
Speed Precision Rate(RMS)	0.03m/s

4G Module

L610-CN-62	Support MAIN_ANT、 FDD/TDD/GSM、 BLE

Basic Feature

LTE FDD	Band 1/3/5/8
LTE TDD	Band 34/38/39/40/41
GSM	900/1800MHz

Transfer Rate

LTE FDD Rel.13	10Mbps DL/5Mbps UL
LTE TDD Rel.13	8.2Mbps DL/3.4Mbps UL
GPRS	85.6kbps DL/85.6kbps UL(multi-slot class 12)

Antenna Specification

Four-arm sinuous antenna

Connector Type	SMA-J
Size	27.5 mm×56 mm
Weight	15.3g +/-1 g
Color	Black

Indicator Description

GNSS   Bluetooth   4G   Power
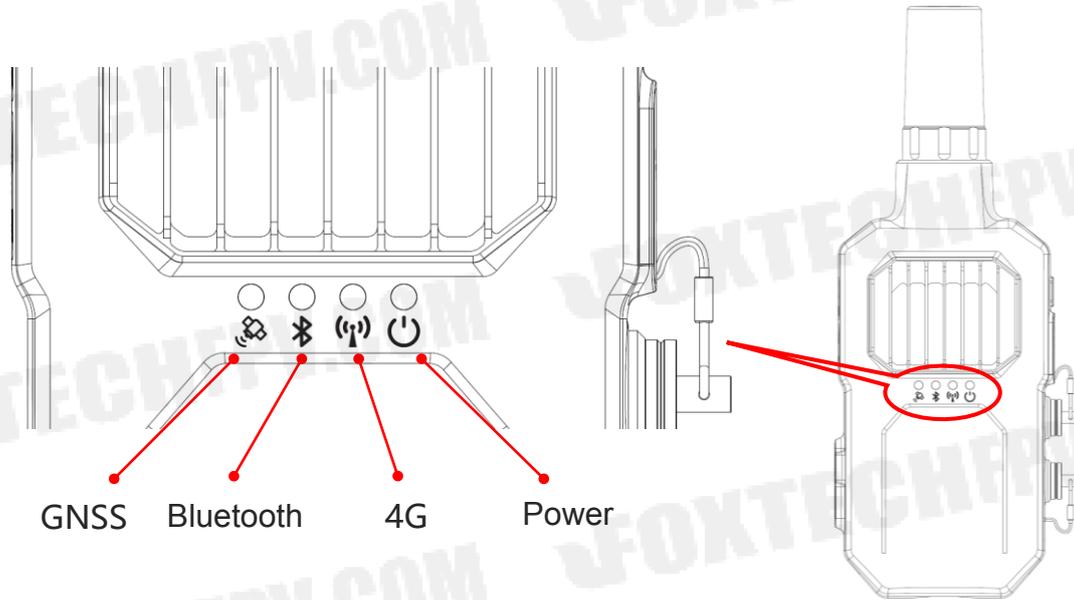
| Indicator	Feature	Definition	Light				Note
			Red	Green	Blue	Yellow	
GNSS	Locate	Search Satellite	Flash				
		Single Point Positioning	On				
		Pseudo-Range Positioning				Flash	
		Float-Point Positioning		Flash			
		Absolute Point Positioning		On			
		Base Station Mode			On		
		Board Setting Succeeded	Flash Slowly				
Bluetooth	Bluetooth	Preparing	Flash				
		Initialized, disconnect	On				
		Connected		On			
4G	Communicate	Data Not Ready	Flash				
		Read SIM Card Succeeded		Flash			
		4G Connected		On			
		Differential Data		Flash Fast			
Power	Power	No SD Card	Flash				
		USB Connected	On				
		Working Normal		Flash			
		SD Card Writing Error			On		

Assembly

S-RTK100 With SLAM100

①Mount the S-RTK100 plate on the back of SLAM100 using six flat-head screws coming with S-RTK100.
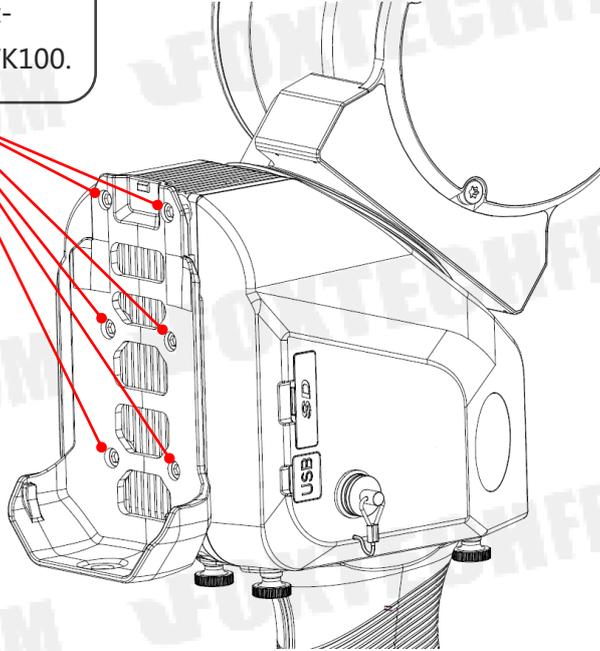
②Insert the S-RTK100 downwards into the plate and tighten.
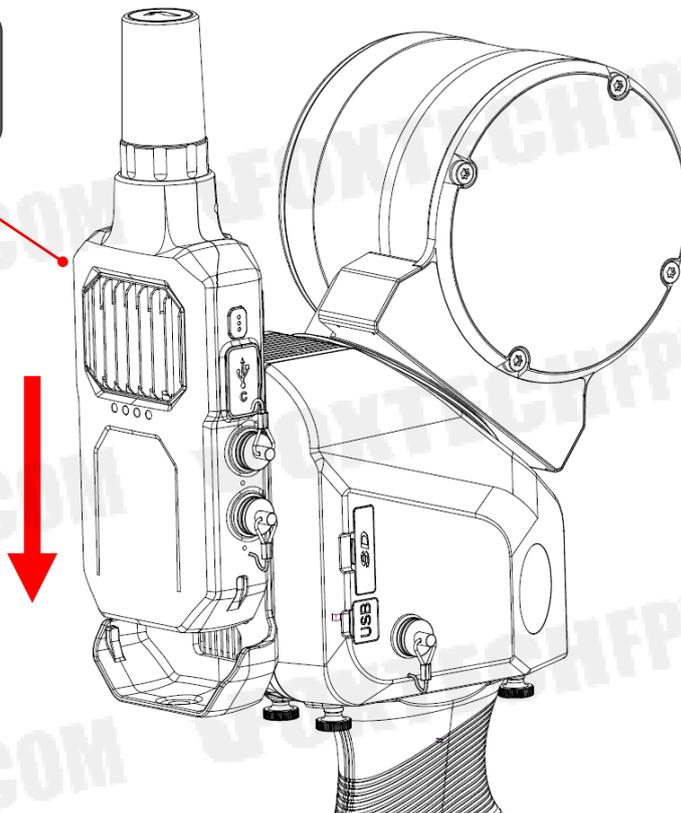
③Connect SLAM100 with S-RTK using any of the two aviation ports. Align to the red mark of the aviation port.

Aviation Port
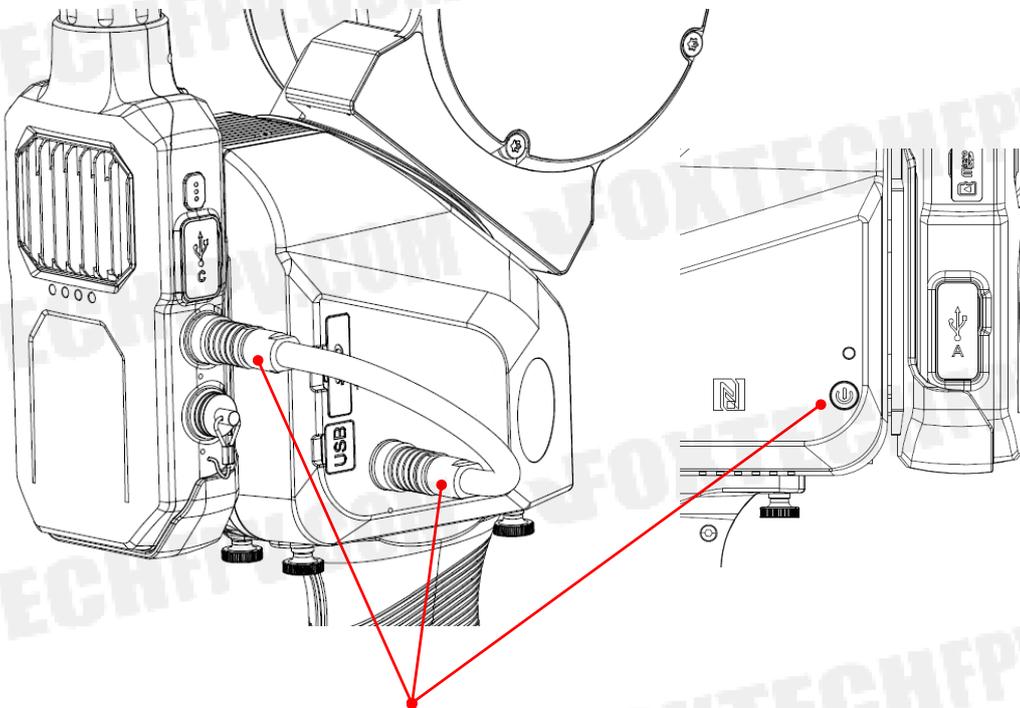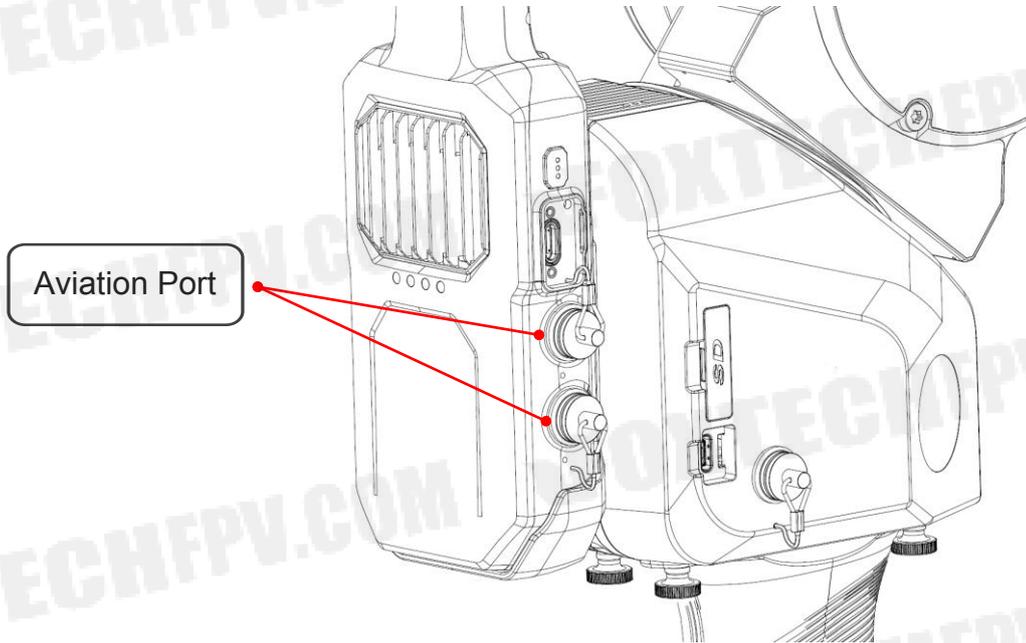
④Make sure the power supply of SLAM100 is normal. Long press on the Power button to turn on SLAM100 and after which the SLAM100 will be on and enter working mode.

Detach S-RTK100

Press down the clip on the back of S-RTK100 and pull it out upwards (Do not pull the antenna).
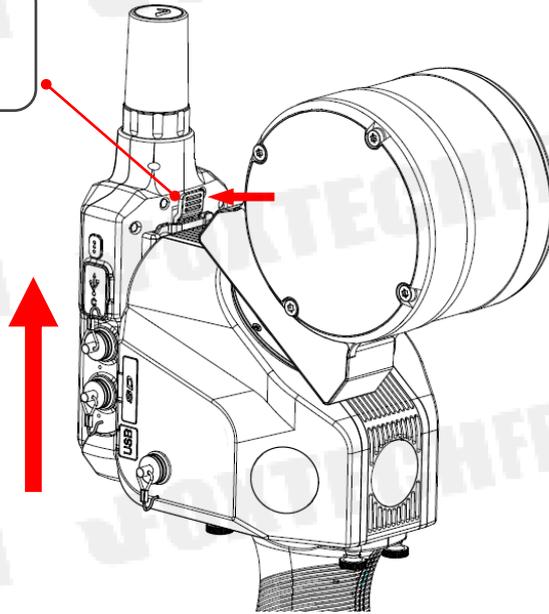
Use S-RTK100 Separately

Working Mode

1) S-RTK100 support PD Power Bank for power supply. The device will automatically on once connected to the power bank.
   ①Take off the Type-C cover;
   ②Connect the S-RTK100 and the power bank with type-C wire.
2) The power bank should support 20V power supply standard (the same as power bank for SLAM100);
3) There is a 1/4 inch screw interface on the bottom of S-RTK100 for centering rod mounting with an adapter. (The adapter and centering rod are not included in the standard package, please reach to our sales if you need.)

Type-C Interface

PD Power Bank

Mode Switch: Doting by default

1/4 inch screw interface on the bottom

5/8 to 1/4 Adapter

Centering Rod
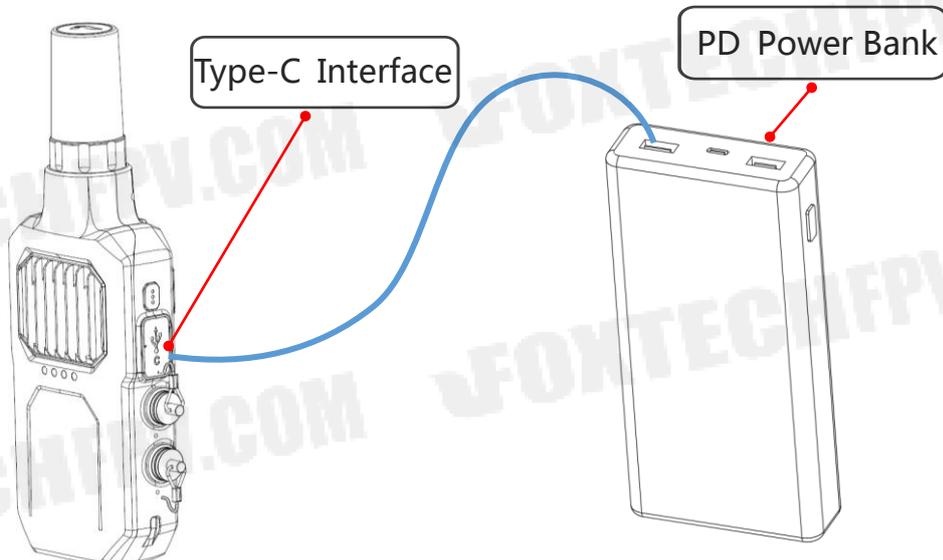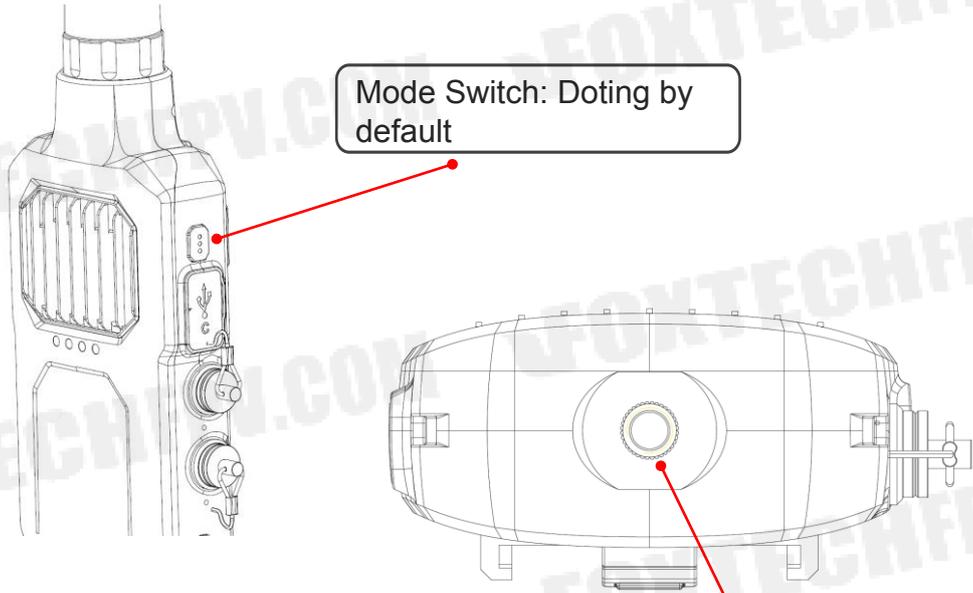
Power Bank Recommendation

Name	Spec	Model
PD Power Bank	20000mAh Support PD 20V 2A	\

Notice

Requirements Of The Power Bank

①Support 20V Output;

②Output Power is higher than 40W;

③It is recommended to use the original wire for power supply.

Notice

Please insert the 4G-NanoSIM card and the TF card into S-RTK100 before use.

Bluetooth Connection

The bluetooth of the phone should be on before connecting with S-RTk100. After opening SLAM GO APP, connect with SLAM100 and enter standby page. Enter SETTING>GENERAL SETTINGS>S-RTK100 SETTING and select the right S-RTK100 bluetooth on the pop-up window to connect.

S-RTK100 Bluetooth Connection

Notice

After connecting S-RTK100 with SLAM100:

① Make sure powering on the S-RTK100 in environment where has GNSS signal (Open area);
② It will need about 5 min to run the time calibration and star search automatically after powering on;
③ SLAM100 can work normally after the GNSS indicator flashes green light or constantly on.

Note

① Use the S-RTK100 satellite signal receiver in the corresponding frequency band according to local radio regulations, and comply with local radio laws and regulations.

② Do not disassemble the antenna of this equipment.

③ Make sure the S-RTK100 is vertical to the ground (antenna up) when using and placing.

④ Avoid using the S-RTK100 in an environment of obstruction or radio interference.

⑤ Avoid block to the antenna when using;

⑥ Keep away from liquid such as water, oil, etc;

⑦ Avoid lightning.

Appendix

More Combination

S-PACK100+S-RTK100+SLAM100
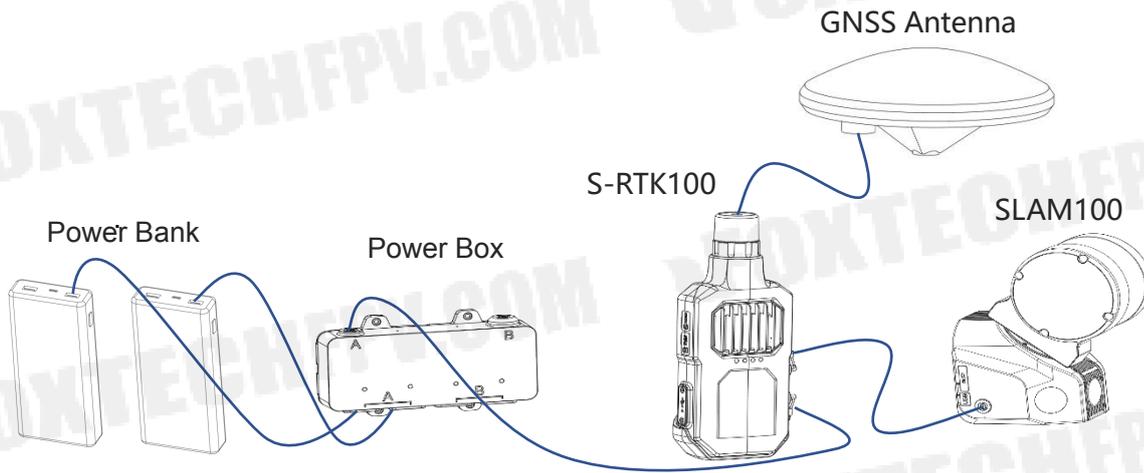
Endurance

Endurance Test (For Reference Only)

Power Bank	Qty	Device	Endurance
12000mAh	×1	RTK100	10h
12000mAh	×2	RTK100	20h
12000mAh	×1	SLAM100+RK100	3h
12000mAh	×2	SLAM100+RTK100	6.5h

NOTE

● The results is gotten under room temperature and for reference only;
● The results may affected by discharge circle times of the power bank and temperature variance, etc.

Clean & Maintenance

①Using soft brush to sweep off dust or dirt on the surface of S-RTK100;
②Using a spray bottle with 30% alcohol content to softly wet a non-woven fabric (microfiber cloth is better but don't use tissues), and then clean the S-RTK100 body gently to remove liquid or other stains.
③ Please use lint-free cloth (no cotton swab) to clean the corner or interfaces,

NOTE

● Do not spray directly onto the device.

Storage

NOTE

● S-RTK100 is sophisticated electronic equipment, so please notice the following requirements when store:

①Away from magnetic field;
②Do not drop;
③Do not squeeze;
④Away from damp environment.

Please store S-RTK100 or other electronic equipment in safe and dry environment where there is no sunlight when it is not going to be used for an extended period. The suggested storage temperature is 5~28℃.