

## Create Static Station Mode

Static station mode is used for control network deployment and control point encryption.

Click the [Create] button, select [Static] for [Type], and configure the relevant parameters to complete the configuration. The default sample interval is 10s and the default file format is RINEX3.02, as shown in Figure-9.



Figure-9

## Survey

Menu bar on the left → [Survey], the main interface switches to point measurement mode.

In the point measurement mode, you can select the first configuration button in the right toolbar of the interface to configure the required measurement parameters, as shown in Figure-10.

In the main interface, you can switch the type of measurement points ( Control Point, Continuous Point, Rapid Point, Topographic Point, Eccentric Point), enter the required number of observation points and other parameters, and then click [Start survey] to collect the required type of points, as shown in Figure-11.



Figure-10



Figure-11

## Parameter Calculation

### Point Correction

The first time you go to a survey area, you need to do point correction if you want the measured point to match the known point coordinates. If you are using Qianxun SI network operation mode and your project coordinates match the CGCS2000 coordinates broadcasted by Qianxun SI, you can skip this step.

The left menu bar → [CRS] → [Site Calib], you can enter the point correction parameter calculation interface, as in Figure-12.

Select the plane coordinates of known points in N pairs of survey area and the latitude and longitude coordinates under the ellipsoid corresponding to known points, click [Calculate] to solve the plane correction and elevation fitting parameters, and click [Apply] to apply the calculation results to the current project coordinate system parameters and update all the measurement results, as in Figure-13.



Figure-12



Figure-13

### Station Shift

Site panning is required when a base station is moved or a reboot of a base station started at an unknown point. If you are using Qianxun SI FindCM service, you can skip this step, and you can directly turn on the power to measure every day.

Menu bar on the left → [CRS] → [Station Shift], you can enter the site shift selection interface.

Select the coordinates of known points in the measurement area and the coordinates of latitude and longitude of the corresponding measurement points to find out the translation amount, and click [OK] to apply the current translation parameters to the corresponding base station of the currently selected measurement point and update all the mobile stations measured under the base station synchronously, as in Figure 14.



Figure-14

## Data Export

The left menu bar → [Data] → [Export] to export the current measurement results.

In the point library, select the desired point location, export file type, and file format to export.

The exported data is stored in the Survey-Mate/RTK/project name/report directory by default, and you can choose the export directory by yourself, as in Figure-15.



Figure-15

## Host Web

When you work separately from your teammates and need to change the base station configuration without PAD, you can use the "RTK Web" application in PAD system or cell phone webpage to enter the 1.1.1.1 host webpage interface to configure the equipment. Some models of cell phones need to turn off the 4G network and use Wi-Fi to connect to the receiver, as shown in Figure-16.



Figure-16

## Update

The RTK product suite is available for free lifetime firmware/software upgrades to support new features and fix bugs. upgrades include RTK host firmware, PAD system, and App software. Upgrade method:

You can contact our technical support staff to obtain the latest version of the installation package, using USB offline upgrade. When upgrading, connect the RTK host computer through the standard Type-C cable, put the upgrade installation package into the RTK memory, APP upgrade package into the PAD memory, restart the receiver / click the APP installation package in the PAD to upgrade.

## Caution

**Charging:** The battery holder charge is used in an environment of 0~40°C. It is recommended to be used in a well-ventilated, non-direct sunlight environment.

**Maintenance:** The lithium battery should be charged with 50%~80% of power for a long time without use, and removed from the instrument and stored in a dry and cool environment, and charged once every three months to avoid irreversible capacity loss.

## Technical Support

If you have any technical questions, you can send an email to [overseas@wz-inc.com](mailto:overseas@wz-inc.com) for technical support.

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

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.

RF Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 30cm between the radiator & your body.

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.

Qianxun SI RTK Quick Start

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## Product Introduction

The Qianxun SI Survey RTK product suite consists of a Qianxun SI Survey RTK Receiver and related accessories.

### Note

This instruction is applicable to Q300 and Q600 products.

### Indicator Description

Indicator	Description
Satellite Status	Blue light flashes when searching for stars, always on after finishing positioning.
Power Status	Power light blinks when the power is <10%.
Data Status	Green light blinks 2s for differential data in dynamic RTK mode. Static mode blinks at sampling frequency interval.

### Key Description

Key	Description
Startup & Shutdown	Press and hold for 3s to turn on, long press for 3s to turn off.
Inquiry	Click the key to check the battery status.
Mode Switch	Double-click the button to switch modes and click to confirm.

## Turn on the device

It is suggested to charge the device for the first time before using it.

Turn on the RTK host and controller → Press the "APP" button in the controller to start the measurement software. The first time you use it, a privacy agreement will pop up, accept it and use it.

## Connecting Instruments

Click the device icon button in the upper right corner of the app to enter the device connection interface. In the device connection interface, you can choose to connect the device after using Wi-Fi search, as in Figure 1.



Figure-1

Note: Qianxun SI survey RTK products start with "QX" by default, such as QX21000034.

## Activation

### Host Registration

When you use the device for the first time, you need to use the registration code to open the authorization to use the device. Please apply for the registration code from the distributor who purchased the device.

Registration method: App upper right corner device icon → click [Device] in the device information after the [Regist] button can be entered, prompt.

### Service Activation

If you have purchased a star-based service, you need to use the authorization code to open it in order to achieve high-precision positioning operation without network on a single device.

In the device information, you can click the [Regist] button after [XStar] to activate the star-based service, please consult the manufacturer's technical staff for service coverage.

Star-based service needs to update the key file once every six months, and you can select the locally imported key file by [Select file].

## New Project

When you enter the App, Qianxun SI has automatically created a project for you. The default project name is controller system time, the coordinate system is WGS84, the projection is horizontal axis Mokato.

If necessary, you can go to the left menu bar to create a new project or modify the project information and the required coordinate system parameters, as in Figure-2.



Figure-2

## Data Import

In the point library, you can select the required data format and file to import data, as shown in Figure 3-6.



Figure-3



Figure-5



Figure-4



Figure-6

## Work Mode Configuration

The first time you turn on the machine, it will automatically enable "Radio", you can directly carry out survey operations.

If there is no network on site or you have other needs, you can configure as follows: Enter the device configuration interface through the left menu bar → [Device Config] You can configure rover station, base station and static station as required.

### Create Rover Station Mode

Click the [Create] button, [Type] select [Rover], and choose the data chain mode.

**PAD Network:** Insert SIM card in PAD and connect Qianxun SI high-precision positioning service for measurement operation. This mode is applicable to the scene with network.

**Radio:** Some models have radio function, at this time you need another RTK to be the Base station and broadcast differential data to the mobile station via radio for measurement operation. This mode is suitable for all outdoor work scenarios, such as Figure-7.

**Star-based:** Some models are equipped with star-based function. Star-based service does not depend on network and does not need to set up a reference station, and can achieve centimeter-level positioning by a single machine. The satellite-based service needs to be opened according to the area, and high-precision operation can be realized within the coverage of the satellite-based, please consult customer service or authorized distributors for details.

**Base Station:** some models have built-in transmitting radio/external radio function, which can be matched with mobile station to form radio 1+1 operation.



Figure-7

### Create Base Station Mode

Some models have base station function. Click [Create] button, [Type] select [Base], configure radio related parameters and click OK to finish the configuration. If there is a known point, you can select [Known Point] mode, enter the ground point coordinates and antenna slope height to start, as in Figure-8.



Figure-8



### Qianxun SI Warranty Card

#### The "3 Guarantees" Rights and Benefits

1. within 7 days from the date the product is delivered to the user, there is a non-human "functional/performance failure", and after the detection by Qianxun SI designated maintenance service organization is true, you can choose to replace the host or return the product free of charge.
2. within 1 year from the date the product is delivered to the user, there is a non-human "functional/performance failure", after the Qianxun SI designated maintenance service agency detects it is true, you can choose to repair or replace the host free of charge.
3. 1 year warranty for the host machine, 1 year warranty for the I/O, and 3 months warranty for the accessories for non-human reasons from the date the product is delivered to the user.

#### Warranty Service

1. if the product host meets the warranty conditions, according to the warranty card and the purchase invoice can enjoy warranty services, if you can not provide proof of purchase and warranty card, the time of arrival and signature as the starting standard for warranty.
2. non-warranty products, Qianxun SI designated maintenance service institutions to do out-of-warranty fee repair processing.
3. the same fault after the repair of the product by Qianxun SI designated maintenance service institutions after the inspection is true, enjoy 3 months warranty service.
4. for products requiring repair or testing, the transportation, delivery and disposal costs incurred in the process of sending the product to Qianxun SI designated repair service organization for repair or testing shall be borne by the user.
5. for products requiring repair or testing, the user is requested to back up the data in the machine in a timely manner, Qianxun SI is not responsible for any loss caused by data loss.
6. the product is free of charge for parts used normally in the repair during the warranty period.



## Warranty Card

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7. the ownership of the parts replaced in the repair belongs to Qianxun SI.
8. Qianxun SI is not responsible for accessories, software or applications that are not standard with the product and not certified by the company.

#### Cases without the implementation of the three guarantees

1. the product has no purchase invoice and warranty card, and the sales information cannot be found in Qianxun SI and the date of delivery is more than 12 months.
2. the Qianxun SI XSite service included in the product is activated.
3. the product host and accessories have been subject to: damage caused by abnormal or incorrect use, improper storage under abnormal conditions, unauthorized disassembly or alteration, accidents, improper installation.
4. damage caused by improper use, such as liquid injection, external damage, etc.
5. damage caused by failure to use the product in accordance with the requirements of the product's instruction manual, repair and maintenance or outside transportation.
6. damage to the product caused by external including but not limited to satellite systems, geomagnetic, static electricity, physical pressure and other non-normal unpredictable factors.
7. damage caused by force majeure such as earthquakes, floods, war and other reasons.
8. not in line with the relevant provisions of the three guarantees.