LOKA Series Handheld High-accuracy Mobile GIS Solution

User Manual 1.0

Model Name:

Loka /XF300/XF200/ MG868H 、 MG858W 、 MG868N 、MG868T 、MG868HE、MG858E，MG838W

Beijing UniStrong Science & Technology Co.,Ltd.

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Preface

1.1 Introduction

Thanks for choosing Beijing UniStrong Science & Technology Co.,Ltd.(hereinafter referred to as Unistrong) LOKA series. It is late-model professional high-accuracy handheld GNSS. To reduce the risk of unsafe operation, please review carefully and understand all contents of this User Manual before using the device. This User Manual introduces the device functions and operation details, which consist of six parts.

(1) Preface: Briefly introduces the functions and features.

(2) Briefly introduces the device structure, keyboard and basic operation.

(3) Introduces the main functions .

(4) GNSS CONFIG APPLICATION: Introduces GNSS CONFIG application in detail.

(5) Q & A:Introduces problems and solutions .

(6) Notes for using the LOKA series

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1.3 About the device

LOKA series is high- sensitive GIS device. It has high accuracy GPS, high quality camera, and WiFi to access to internet. It is a multifunction PDA integrated high quality GNSS module, a data collector with highly human engineering design and a mobile device for harsh environment application.

It applies Windows Mobile 6.5 system which combined some friendly interface applications. Also it has open software platform to work with third party GIS applications and provides professional GIS solution.

(1) Professional GNSS module, Highly accuracy positioning.

The professional GNSS module makes the satellite searching faster and more accuracy positioning. Combined with EVEREST technology, LOKA series has good performance even in harsh conditions, such as, in shade of a tree or at the corner of buildings. Automatic tracking SBAS (MSAS/EGNOS/WAAS) satellite signal, without relying on self-built or billing reference station, it has real time dynamic differential measurement that can achieve the sub-meter and decimeter accuracy measurement , also has a millimeter accuracy static measurement function, which can fully meet your different requirements on precision. The GIS-Office let user to process data after measuring.

(2) High-End Configuration, High resolution LCD.

Applying high speed CPU and 3.7 inch high bright VGA LCD with 480*640 resolution ratio, LOKA series runs fast and easily read even in sunlight.

(3) Excellent outdoor performance.

GNSS board, measuring antenna and hand book controller are fully integrated into a ergonomic integration host. It has industrial protection and high capacity Lithium battery which make it has excellent outdoor performance that working in harsh field environments providing you with good support for a long time.

(4) Standard OS, a wild rage of extended support

Applying industrial PDA OS Windows Mobile 6.5 which has good extended support and excellent graphic interface, LOKA series can easily support third party navigation applications and GIS applications.

(5) Seamlessly access to CORS, good compatibility

High quality GPRS module can seamlessly access to CORS system or web reference station. The GPRS function makes LOKA series access to web and get accurate differential data.

(6)Flexible expansion application, compatible with hand book function

Applying Bluetooth, LOKA series can access to computer for data exchange and also can access to RTK host, and act as a RTK controller to carry out field work.

(7) Professional applications and support all industry applications

According to actual operational needs, users can use personalized custom software, such as : soil testing, forest pest and disease control, heritage, land and surveying, power line inspection management, etc.
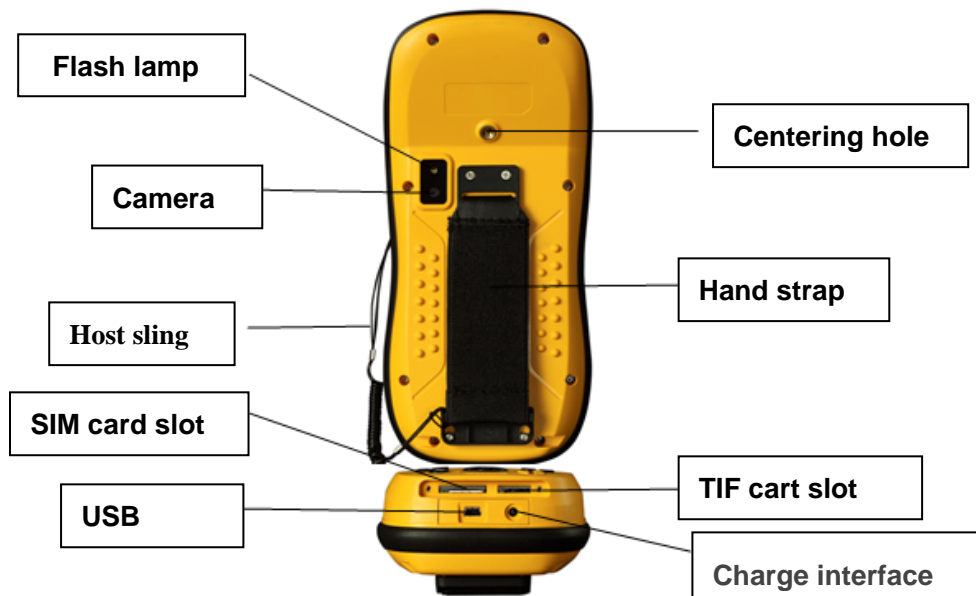
(8) SRA idea, quality assurance

SRA idea means Stability, Reliability and Advanced. SAR is UniStrong's design concepts and design ideas which has always been adhered to by UniStrong.

Briefly introduces the device

2.1 The device structure

Internal GNSS survey antenna

External GNSS antenna port

Touch screen

Windows button

Reset button

Touch pen

Other functions button

Power indicator

Power button

The front of device

Flash lamp

Camera

Host sling

SIM card slot

USB

Centering hole

Hand strap

TIF cart slot
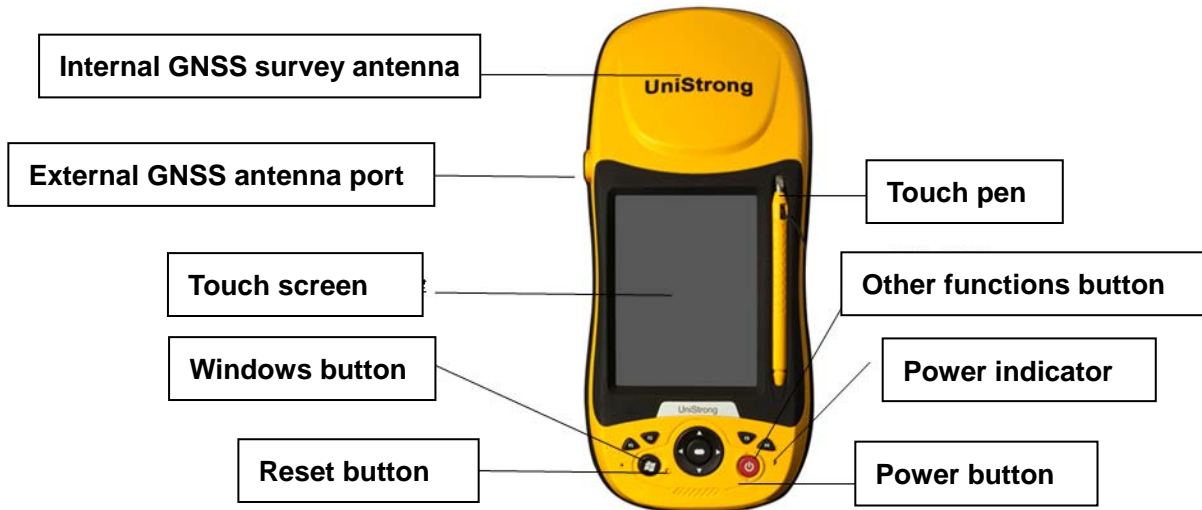
Charge interface

The back of device

Note: Some types of LOKA series can be charged through USB interface. Except this, there is no other charge interface.

2.2   Install and Dismantle SD Card and SIM Card

TIF card is necessary for extending data. For real-time differential function, SIM card

with GPRS function is indeed necessary. Card slot is in the bottom of the handset battery, which are all pop-up / snap-on types. Insert and dismantle cards according to the showing direction.

2.3 Power Supply

(1) Batteries

LOKA series devices use built-in rechargeable lithium batteries.

(2) Charge

The built-in lithium batteries must be charged before using. The charging time is 4 hours. The charger has overcharging protection. In order to extent the overall batteries life, please charge the batteries at the temperature between 0 to 45 degrees.

(3) Power indicator

Indicator	Status
No lights	The device is power off or normal working
Green light	The device is in standby
Green light flicker	Charging
Red light	The device is in the process of startup or shutdown.

2.4 Power on/off

(1) Starting up

 a) Pressing red Power button for 1 second to starting up.

 b) When the power indicator is green , loosen <Power> button. After power on, the screen displays Windows Mobile icon.

Note: If the device is already in use, but only in the midway is shut down (off screen), when you press <Power>, which will wake up the screen to run the previous interface.

(2) Power off

When the power indicator is red, long press <Power> for 3 to 5 seconds. Until the power indicator is black, the device is shutdown.

(3) Forced shutdown

'Reset' button is located in the right side of 'Windows' button. If the application of LOKA series appears unusual, you can use the touch pen to press the Reset button to force shutdown.

2.5 Touch screen calibration

If the touch screen of your device is not calibrated or when the screen is not very flexible for touching. Please calibrate the screen. Please get into screen setting page through setting mune->System->Screen. Click on the icon of the screen, and will appear the screen calibration interface. Please reference calibration guard .

2.6 Connecting to computer

LOKA series can connect to computer via USB cable. you can browse and copy files in the device through Microsoft ActiveSync synchronization application.

 Following these steps:

 1) Connecting to computer via USB cable

 2) Make sure that the collector and computer are synchronous.

3) Installing the application on the computer. If the application is applicable to mobile terminal, please copy the application to collector, click it to start installing. If you need to transmit data to the collector, please copy the data files to the corresponding file directory.
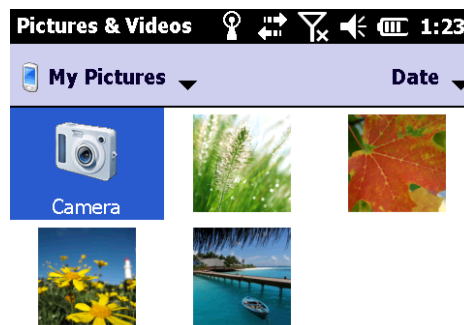
4) Selecting the application installation directory ('Flash Storage' is suggested), and then click 'Install'.

Note: Recommend to install the application in 'Flash Storage' and save data in TF card.

LOKA Series Device Main Functions

3.1 Camera

Select 'Start->Photos And Video', select 'Camera' menu or the 'Camera' icon to take a picture. Click again on the screen to select 'OK' to exit.

3.2 Bluetooth Connection

1) Select 'Start->Setting->Connections-->Wireless Manager', click the [icon] icon to active Bluetooth.

2) Select 'Start->Setting->Bluetooth', click the 'Add new device...', the system will search available Bluetooth ,you can connect the device in the refresh list, click 'Next' in the lower right corner, and then input password.

3) Click 'Next', input the password on the external Bluetooth device to complete the external Bluetooth connection.

Note: this password is available for Bluetooth connection, which can be settled freely ,like 1234,just keep the two passwords to be the same.

3.3 GPRS Connection

1) Make sure that the SIM card has been inserted in the device.

2) Select 'Start->Setting->Connecting->Connecting'.

3) Select 'Add A New Modem' in the 'Internet Setting'.

4) Input the connection name, slect 'Telephone line (GPRS)' modem, and then click 'Next'.
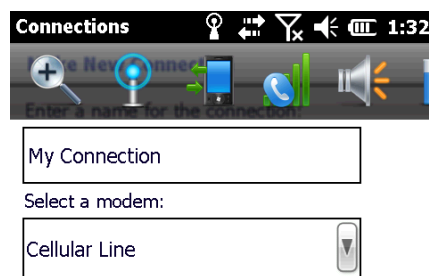
5) Input the connect name(get it from local service provider), click 'Next';

6) Click 'Done'.

7) Successfully added connection, press the new connection icon for a while by a touch pen.

8) After successful connection, there is a new Network icon on the top right corner of device's screen.

3.4 WIFI Connection

1) Select 'Start-> Setting-> Connecting-> WLAN'

2) Choose the connection in the available network list, following the prompt steps to input the network password to complete connection.
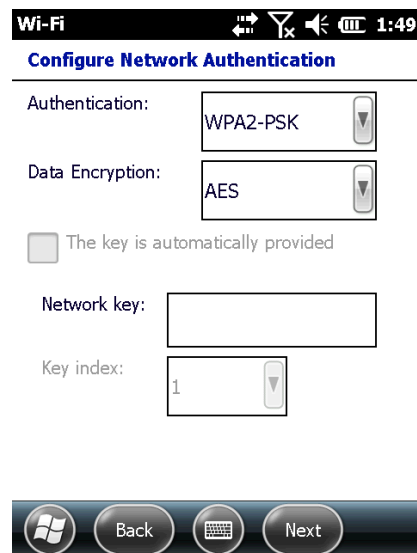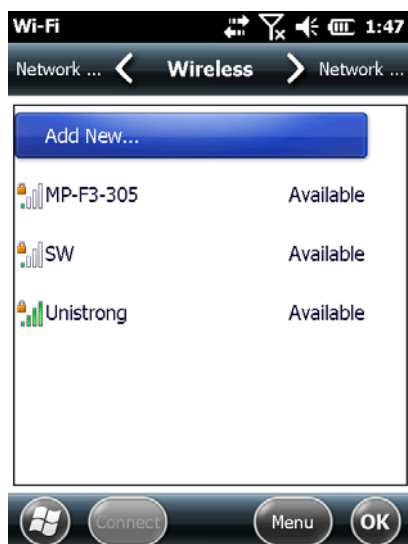
3.5 Touch pen response location

Select ' Start-> Setting-> System-> Screen', select button, adjust the touch pen response according to the guide.
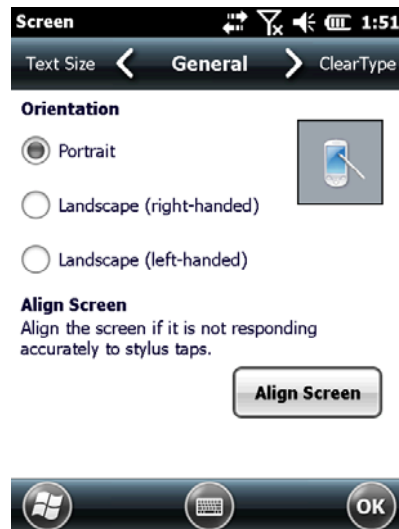
3.6 Adjust the Screen background Light

Select 'Start -> Setting ->System -> Background Light', set corresponding background
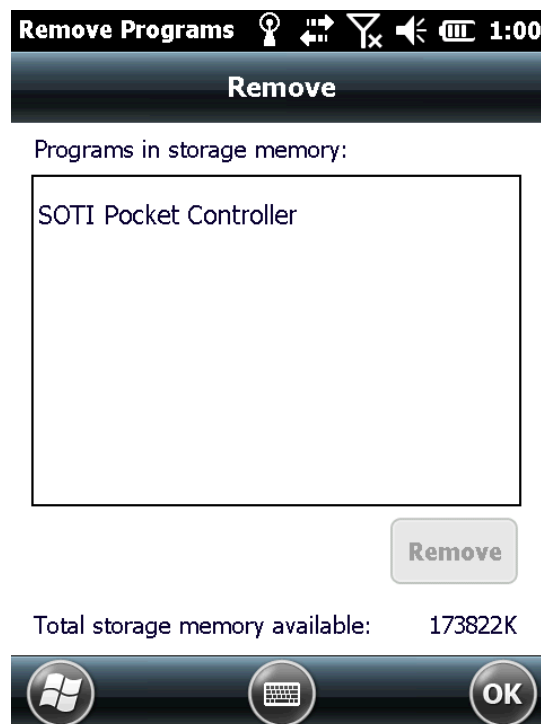
light according to the pop-ups.
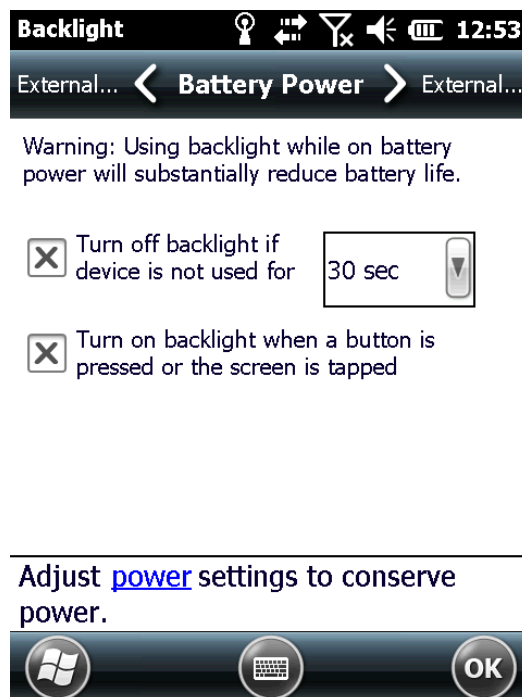
3.7 Automatic Shutdown Time

Select 'Start ->Setting -> Power ->Advanced', according to the pop-ups, set the

automatic shutdown time under different power status.

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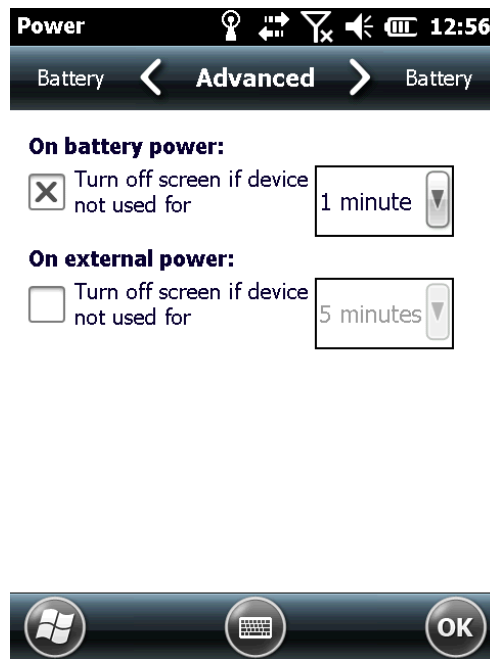
3.8 Uninstall Applications

Select 'Start -> Setting ->System -> Remove', remove the installed application according to the instruction.

4   GNSS Config Firmware

GNSS Config firmware is for GNSS of LOKA series device, its main functions are as below:

1)Setting function, including GNSS, Ntrip, differential modes and NMEA data output settings, etc.

2)View function, including satellite map of the sky, satellite information and location information, etc.

3)Survey function, including point survey and Static data measurement.

4.1 Install Applications

Before you install application, make sure that the computer has been installed the ActiveSync application. And then the device connect to the computer with data cable, communicating data through the ActiveSync. Copy the GNSS Config installation package to the memory of device, and double click the installation package. the system will automatically install the application.

4.2 Main Interface

Click the software icon, the main interfaces including: GPS latitude/ Longitude, Satellite Ephemeris and GNSS Config info. You can shift those interfaces by pressing the left direction button or right direction button.

GPS latitude/Longitude: including longitude, latitude, altitude, current GPS position and the number of satellite.
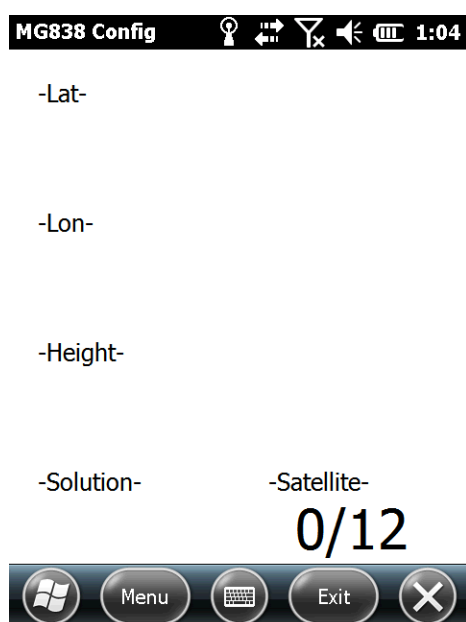
Satellite ephemeris interface: it shows the location of satellites, signal/noise ratio and

accuracy data, such as, PDOP, HDOP, VDOP, etc.
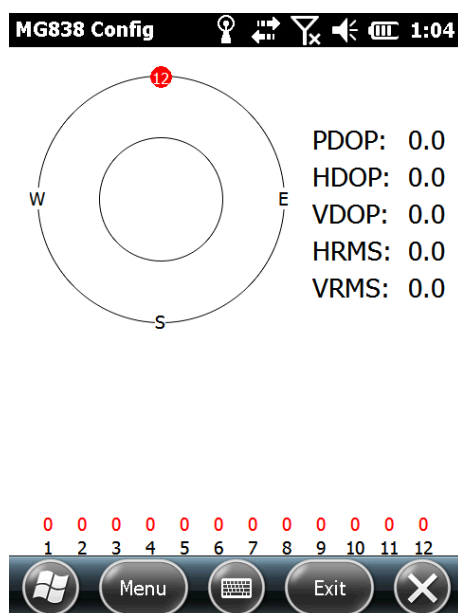
GNSS Config Info interface: it shows the firmware's version information, etc
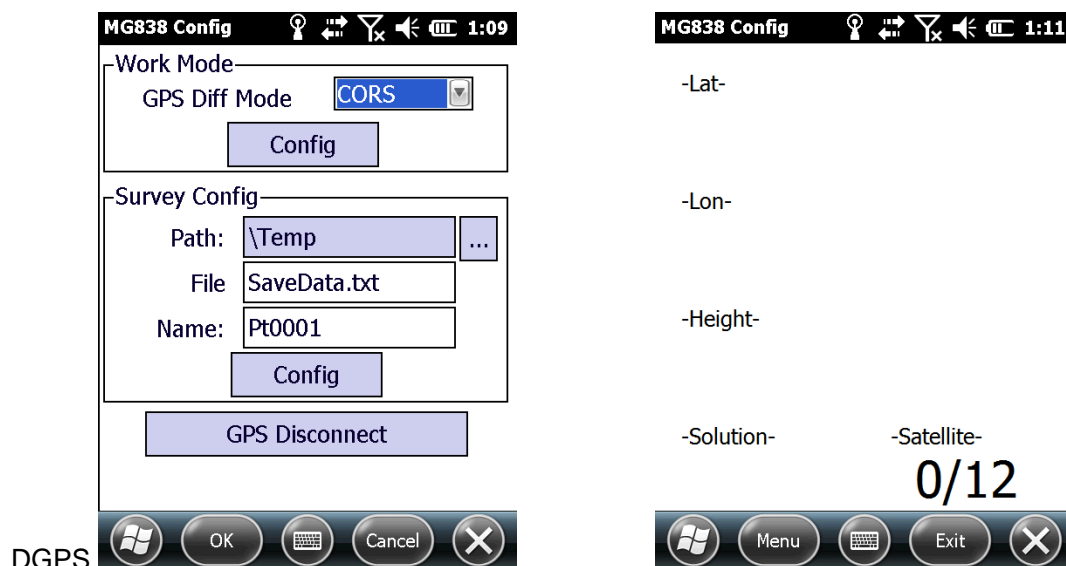

4.3   Work Mode Setting

The device has three work modes, including point positioning, SBAS work mode and CORS work mode. The point positioning mode is factory defaults. You can change the work mode according to the work needs.

Select   'Menu' ->   'Setting' to set work mode.

Single: Set work mode to point positioning mode. Select the 'Single' option in the

drop-down menu, and then click 'Set' to complete setting .

SBAS: Set the work mode to SBAS mode. Select the 'SBAS' option in the drop-down menu, and then click 'Set' to complete setting. The device interface display
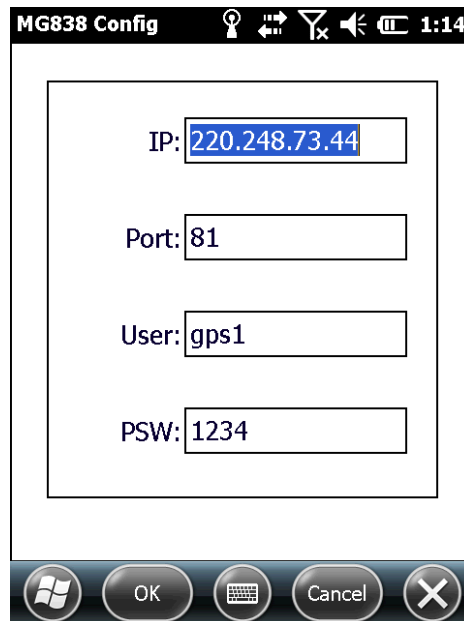

DGPS.

CORS: Set the work pattern to CORS mode. Select the 'CORS' option in the drop-down menu, and then click 'Set' to complete setting.
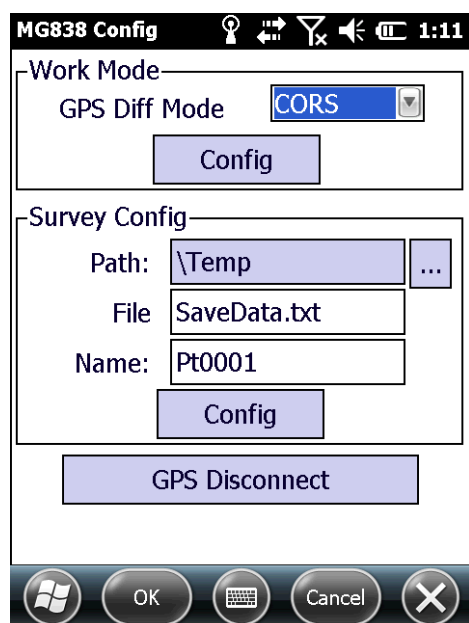

Click 'Menu' -> 'Ntrip', select 'Setting', input the VRS service IP address, port number, user name and password, and then click the 'OK' button at bottom left.

Click the 'Ntrip' pop-up menu, select 'Start GPRS' option, and then the system will automatically connect to the GPRS. After successfully connecting, the interface will show the icon.
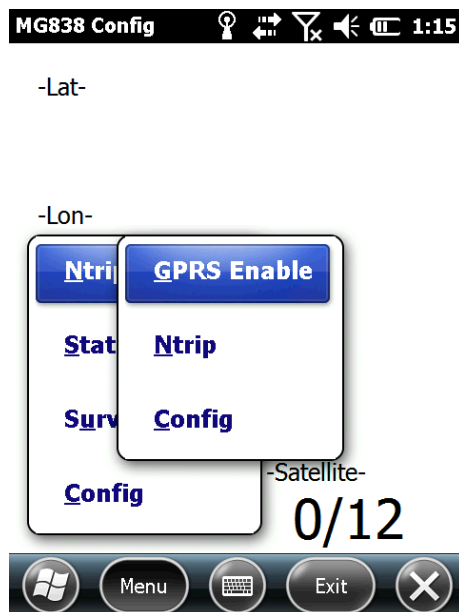

Select 'Ntrip' option in the menu, and then choose access point. If you don't know the access point, you can select the 'update' option and click the 'Start' button to get source list.
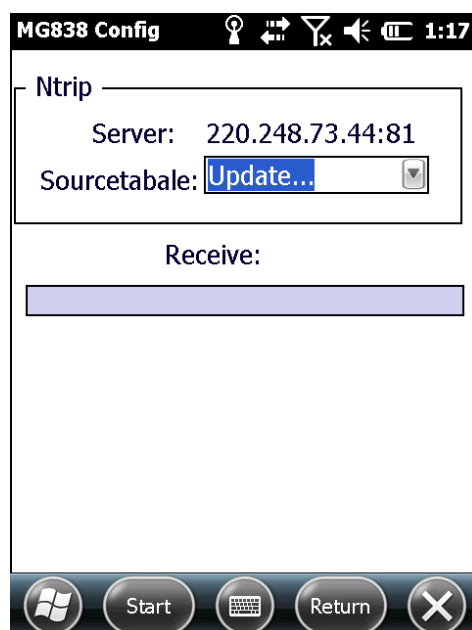
After getting source list, you can select the corresponding access point. Clicking the 'Start' button, the software will automatically login on internet through GPRS mode. After successfully setting ,the device's positioning status display for DGPS.

4.4 Static Record

Some customers in some industries who may need a static post-processing functionality. You can select 'Menu' -> 'Static Record' to choose the files path you needed, name the site, and click the 'Start ' button in the function interface to record, as shown below.
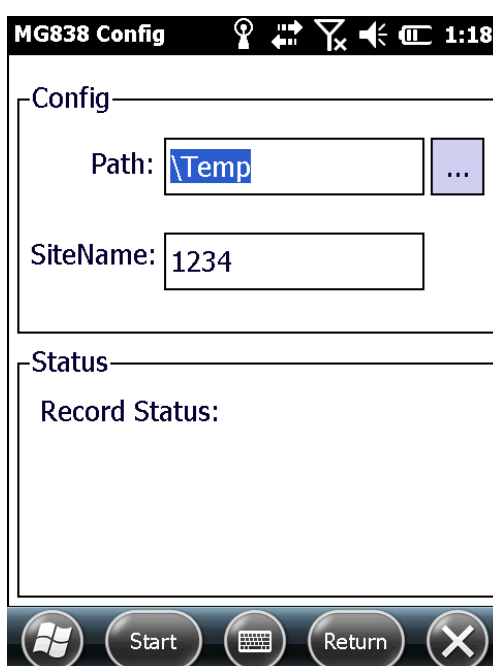
Note: the static record must be in good observation environment. Just only under the circumstance that the PDOP and satellite number meet the users' demand ,you can carry out the static record.

4.5 Point Collection

Select 'configuration' ->'Measurement configuration' to choose the point ,document name and point name.

Then enter into 'Point Collection' interface, click the 'Collect' button.

The point number is default for 10 seconds. After recording 10 points, the mean value coordinate is below. User can rename and add new information.

4.6 Configuration

After the device is set to DGPS state, please press GPS Disconnect button. User can carry out survey in the wild through applying 'com5,57600'data of third party software. Clicking again the GPS Disconnect button which can change the GPS configuration info.

4.7 Exit the Application

Pressed 'Exit ' button on the main interface, the screen will indicate that do you want to exit application? and power off. If you press 'YES', the application will exit. Meanwhile, the device will close part of power supply (in power saving mode).If you press 'NO', the application will exit, but the device will not power off. If you press 'Cancel', this operation is canceled. It is advised you to turn off the device if you don't use it for a long time. If not, the GPS module keep working behind the scenes which would lead to the battery power consumption run too fast.

5   Q & A

Problems	Reasons	Solution
Can not power on	The batteries runs out of power.	Charge
Unable to charge	。 The rechargeable battery's internal temperature has increased to the maximum allowed	Suspend the device before charging
		Keep away from external heat source (ie. sunlight). When the internal temperature has been reduced to the normal charging range, the device will automatically resume charging.
Screen goes blank	The device is shut down.	Turn on the device.
It is difficult to see screen.	The background light has been turn off.	Clicking the screen or pressing one button.
	The brightness of the backlight needs to adjust.	Select 'Setting' ->'System' -> 'Background Light', view backlight control, and then adjust the slider in the Brightness tab.
Touch screen has no response to the touch pen and fingers.	Adjustment of the touch screen is incorrect.	Re-adjust the touch screen
The ActiveSync can not connect to the device	ActiveSync settings is incorrect.	Installing the latest version of ActiveSync.
		Re-setting the computer's ActiveSync firmware.
		。Re-set the device's ActiveSync firmware.
Unable to go online	SIM card is installed	。Re-installing the SIM card.

	incorrectly	
	The phone has been turned off.	Turn on the phone by Wireless Manager.
	Your account balance is insufficient.	Ensure that your account has sufficient balance.
	Connection configuration is incorrect.	Re-set the internet.
	Mobile communication is not available.	Make sure that the device can receive the signal which is strong enough to establish a connection.
The device can not find any Bluetooth devices nearby.	The Bluetooth is closed.	Make sure that your device and the Bluetooth device are open.
	The Bluetooth device has not been found.	Make sure that the Bluetooth is able to be found.
	The devices are beyond the signal coverage.	Move the devices closer to each other, and then scan.
Unable to connect WIFI	The WIFI is closed.	Click the WIFI icon on screen or get into the Wireless Manager, then open the WIFI.

6 Notes

1) There are some special places, such as airfield, hospital and gas station, are not allowed to use electrical devices. Please obey the regulation and do not use this device.

2) For your safety, please do not operate this product when driving a car.

3) Do not put this product near car's airbag to avoid any safety problems.

4) For your safety, please do not use this product in lightning weather.

5) Although the product is waterproof, do not put this product in water or moisture environment for long time.

6) Please pay attention to the temperature range of this product, too high or too low temperature will affect its performance and life.

7) Do not knock, beat or shake the products acutely, so as not to damage electronic components inside the machine.

8) Please do not disassemble the products by yourself. If there is anything wrong, please keep the original status and return it for repair.

9) After the service life of the machine, please do not abandon everywhere, so as to avoid environmental pollution.

10) This is a grade A product. In the living environment, this product may cause radio interference. In this case, the user may be required to take the practical and feasible measures of interference.

This device complies with part 15B, of the FCC rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference

(2) this device must accept any interference, including interference that may cause undesired operation.

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.

WARNING:

Under normal use condition, the minimum distance for the user to keep away from the product is 20cm,the product should not be operated when a person is within 20cm of the product.

CE 0678

Canada Statement:

This device complies with Industry Canada RSS-210. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio RSS-210. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.