



GeoPro K2 Series

Hardware Operating Instructions

About

Welcome to use GeoPro K2 series. This book describes how to install, set up and use GeoPro K2 series, including GeoPro K2E and GeoPro K2G. For GeoPac, the embedded multi-function GNSS data collecting & processing software, please refer to *GeoPac User's Manual* for more information.

Please read the instructions before start!

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For more information, please visit: www.geosun-gnss.com.

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Overview

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CHAPTER

- **GeoPro K2 Series Overview**
- **Innovative Technology**
- **Configuration Advantages**
- **Notice**

GeoPro K2 Series Overview

Specially designed for industrial users, GeoPro K2 series industry-grade GIS data collector is small in size and easy to carry. The rugged design of GeoPro K2 series makes it withstand 1.5 meters natural fall and meets IP67 standard, which makes your fieldwork easy and safe even in extreme conditions. Furthermore, the large capacity Li-Ion battery provides up to 8 hours of continuous operation.

GeoPro K2 series offers overall GNSS/GIS solutions, which is compatible with international main-stream GIS platforms especially Geosun GIS, while supporting large-size image data (up to 10GB) and hundreds megabyte level vector data loading. GeoPro K2 series, with independent intellectual property, offers high-accuracy real-time differential and kinematic survey for post-processing. Based on Windows CE operating system, Geosun can offer users customized applications or functions according to different requirements.

GeoPro K2 series includes GeoPro K2E and GeoPro K2G, whose configurations are shown in the following table, in which √ means configured, × means not available:

Module		GeoPro K2E	GeoPro K2G
Camera	3 Megapixel	×	×
	5 Megapixel	√	√
Bluetooth		√	√
GPRS		√	√
3G/WCDMA		×	×
Electronic Compass		√	√
3.5 Inches Touch Screen		√	√
Battery Number		2	2

Note: You can find the product nameplate after removing the battery, the first four characters of the SN show the product type, such as “GK2E” for GeoPro K2E, and “GK2G” for GeoPro K2G.

Innovative Technology

■ Flexible, Diversified Wireless Communication Technology

■ GPRS Data Transmission

With mature GPRS data transmission technology, the data transmission and communication is not restricted by operation distance, which is especially suitable for urban or mountainous area where the broadcasting signal is subject to be blocked.

■ Integrated Bluetooth Wireless Communications

Built-in Bluetooth communication modules easily realize short distance wireless data transmission.

■ Integrated Three-dimensional Electronic Compass

The built-in electronic compass plays an effective assistance to the GPS fieldwork, which helps GeoPro K2 series to provide the accurate direction for users even with poor satellite signals or in low-speed or static status.

■ Intelligent Speech Technology

Support intelligent judgement, voice prompt, status warning and etc.

■ Intuitive Digital Image

The embedded digital camera can capture the related image on-site directly for convenient attribute annotation while the built-in microphone supports audio annotation. And the Geosun GeoPac software installed inside will automatically match the image with current GPS position for convenient background application.

■ U Disc File Management Mode

Easy U disc storage style is adopted for file management. Without any special software, just the plug-and-play operation enables users to download and manage the handheld files conveniently.

■ Smart Charging

Power adapter provides 5.2V/2A output. Smart charging module is designed to help identify the charging status. And the K2 series handheld will automatically shut down after fully charged.

Configuration Advantages

■ Professional Software Support

GeoPac software of Geosun is a professional GNSS data acquisition, processing and management software suite, which adopts unique high-accuracy data processing algorithm and contains many optional application modules. With GeoPac, you can easily handle the point, line, plane, annotation and image, realizing seamless integration of fieldwork and office work.

■ Integrated Handheld Design

Highly integrated industry design and all built-in key components, ABS + PC shell, withstand 1.5 meters natural fall. Industrial three proofing standard: waterproof, shockproof and dustproof.

■ High-end Configuration

3.5 inches sunlight readable color touch screen. The built-in Micro SD card slot supports massive storage expansion up to 32GB. And USB data download is supported.

■ Standard Li-Ion Battery with Large Capacity

3.7 V/4200mAh large capacity battery are equipped as standard configuration, which can support continuous operation up to 8 hours in GPS mode while 6 hours in GPS + GPRS mode (with only one battery inside).

■ Data Communication

Support GPRS wireless communication which breaks distance limitation. Enabling data transmitting and receiving freely in areas where GPRS is available.

■ Operation Mode

Touch screen and keyboard, easy to operate.

Notice

Although GeoPro K2 series handheld is made of corrosion-resistant and impact-resistant materials, this kind of sophisticated instrument still needs careful usage and maintenance. Please preserve the handheld in dry environment as possible. To improve its stability and service life, the handheld should avoid being exposed to extreme environment, such as damp, high or low temperature, corrosive gas or liquid and etc.

To ensure the continuity and quality of satellite tracking, the space over observation site should be as open as possible, without large obstacles over 15 °elevating angle. To reduce various electromagnetic interference to GNSS satellite signal, please make sure no strong electromagnetic interference in 200m range around the observation site, such as TV tower, microwave station, high-voltage transmission. To avoid or to reduce the occurrence of multipath influence, the site should be set far away from the terrain and ground features where the electromagnetic wave signal reflection is strong, such as high buildings, large area waters, etc.

Warnings:

- This equipment contains ESDS (Electrostatic Discharge Sensitive Device), with level C electrostatic anti-interference test. To touch, move or plug the equipment, please follow the ESD (Electro-Static Discharge) instruction.
- Must be used and preserved in the stipulated temperature range. For details, please refer to the chapter [Technical Parameters](#).

GeoPro K2 Series Introductions

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CHAPTER

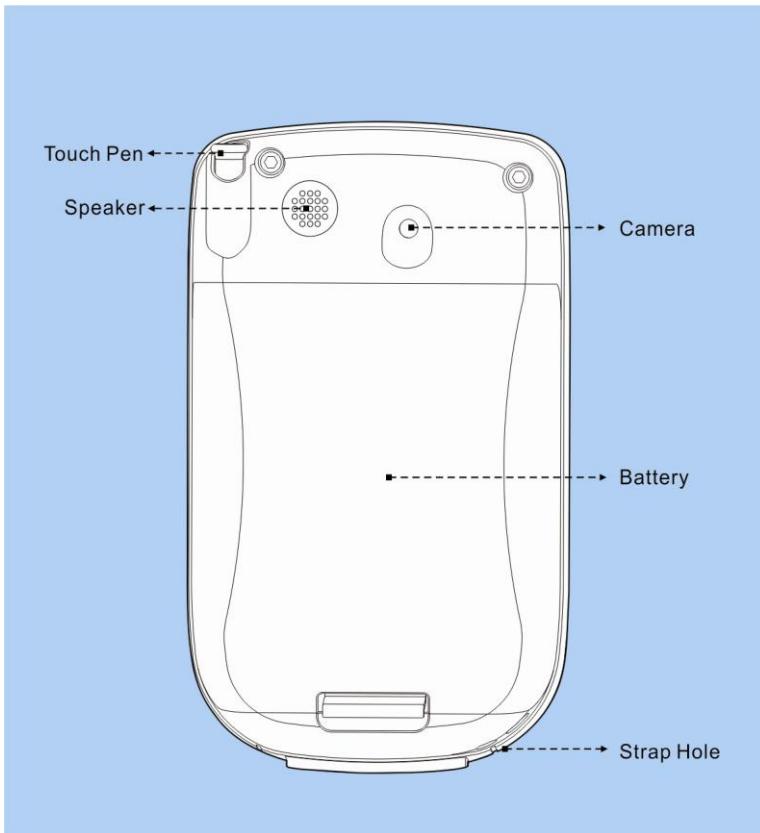
- Front View
- Back View
- Interfaces
- Standard Configuration List

Front View



- Built-in GPS Antenna
- Touch Screen: 3.5 inches sunlight readable color touch screen
- Microphone: Support on-site audio collection for attribute annotation
- Power: Press this button for 2 sec to turn on the handheld, or 3 sec to turn off it
- ESC: Exit the current window
- OK: Confirm the information of the current window

Back View



- Touch Pen
- Speaker: Voice reporting
- Camera: on-site image collection for attribute annotation
- Li-Ion Battery: 3.7V/4200mAh
- Strap Hole: hold the strap to prevent the handheld from slipping

Note: There may be no voice or the voice may be hoarse when the speaker gets water inside. But this will not affect the instrument performance as the handheld is entirely waterproof even for the part connecting with the speaker. However, please dry the speaker in time.

Interfaces



- Mini-USB Port: Connecting PC for data transmission
- Debug Serial Port: For the E-boot writing by factory
- Power Interface: For charging
- Micro SD Card Slot: For installing Micro SD card, supports massive storage expansion up to 32 GB

Note: Close the plug to avoid water and dust when you don't use the interfaces.

Standard Configuration List

Configuration Item	Number	Picture
GeoPro K2 Series Handheld	1	
Charger	1	
Universal Adapter	1	
USB Data Cable	1	
Battery	2	
Micro SD Card (2G Byte, Flash)	1	
Touch Pen	2	
Geosun GEO CD (Containing all Geosun GEO catalogues, software, manual, video)	1	
GeoPro K2 Series Bag	1	

Basic Operations

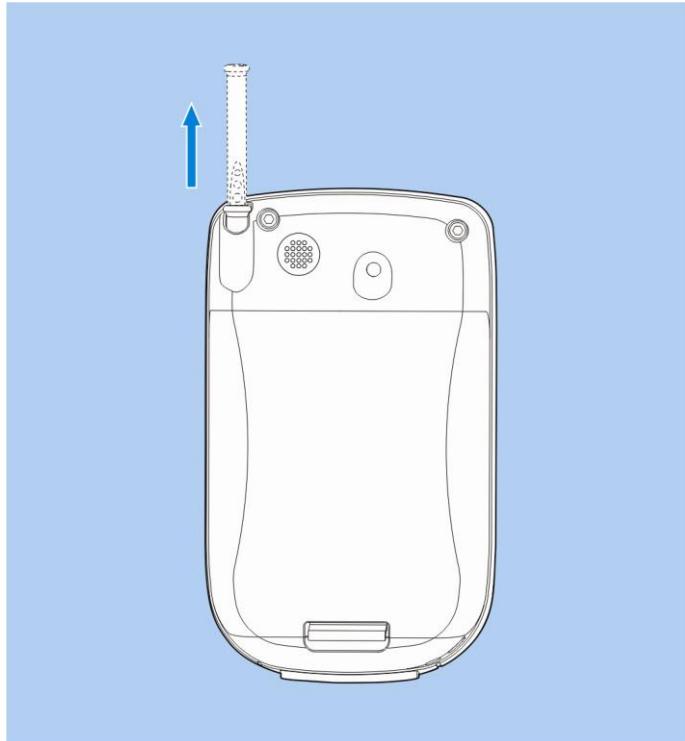
3

CHAPTER

- **Taking Out and Putting Back the Touch Pen**
- **Power On**
- **Power Off**
- **Stylus Property Settings**
- **Power Management**
- **Installing Micro SD Card**
- **Installing SIM Card**
- **Serial Port Settings**
- **Bluetooth Settings**
- **Using the Electronic Compass**
- **Restoring WinCE System**
- **Installing, Uninstalling or Updating GeoPac Software**
- **Upgrading the Firmware**

Taking Out and Putting Back the Touch Pen

1. The touch pen is in the pen slot at the back of the handheld. Lightly pull the touch pen cap, and take it out, as shown below:



2. To put back the touch pen, let the cap toward the outside, and then push it until the top of the pen reach the end of the slot.

Note: Please take out and put back the touch pen gently!

Power On

1. Press the power button for 2 seconds, the handheld will turn on and load WinCE system automatically, as shown right:

The startup process lasts for about 30 seconds, please be patient.



2. When the startup process is completed, the desktop of WinCE system will be shown as right:



Power Off

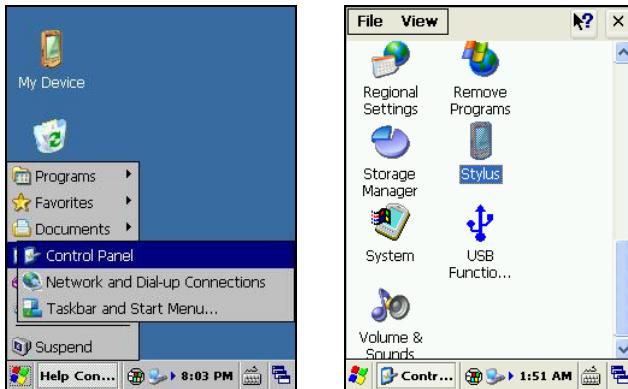
There are two ways to turn off the handheld:

1. Press the power button for more than 3 seconds.
2. Tap *Start>Suspend* menu item in WinCE system desktop.



Stylus Property Settings

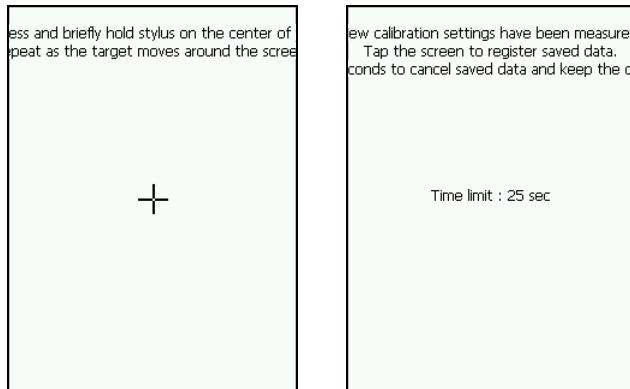
1. Tap *Start>Control Panel* menu item to open *Control Panel* dialog box.
2. Tap *Stylus* icon in *Control Panel* dialog box to open *Stylus Properties* dialog box.



3. Set up double-tap speed. Double tap the grid pattern to set double-tap speed and double tap file icon to test the double tap setting in *Double-Tap* page.



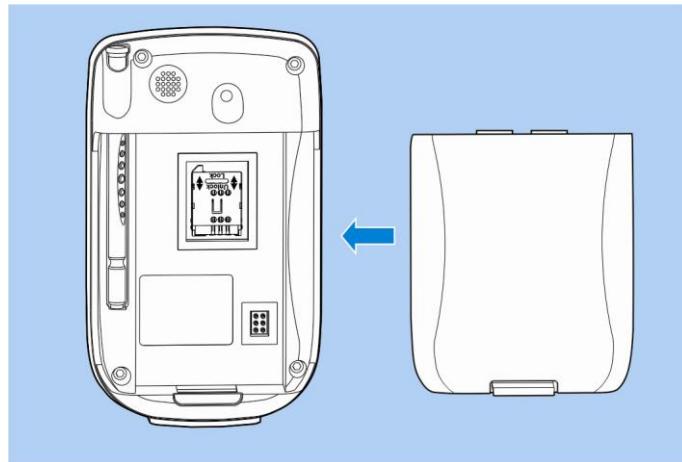
4. Calibrate the touch screen. Tap the *Recalibrate* button to open *Calibration* page. Follow the instructions on the top of the screen to calibrate the touch screen.



Power Management

Installing and Removing the Battery

1. Insert the raised parts of battery into the corresponding slot.



2. Press down the end with plastic spring of the battery until you hear the sound of lock.
3. To remove the battery, pull up the plastic spring of the battery until you hear the sound of popup, and then gently take out the battery.

Note: The battery life will be reduced with temperature decreasing and charge times increasing. Typically, a new 4200 mAh battery can support continuous work for about 8 hours. The working time may be different depending on the communication configuration, the status of screen backlighting, etc.

Warning:

1. Don't put battery in fire or use metal short-circuit electrode. Please use the special battery and charger from manufacturer only.
2. Stop using the battery once you find it heated abnormally, distorted, leaked, or smelly. Please replace it by a new one.
3. If the battery life significantly is shortened, please stop using and change a new one as the battery has aged.

Charging

Special charger should be used for In order to help users to know the charge status, GeoPro K2 series of K2 series, and only in certain temperature range (0 °C~40 °C).

Methods and requirements: Commonly there will be some power left in the battery before users start to use it. Please firstly run out of all the power before first charging. Please charge the handheld for 8 hours for the first three times (in power off status), and later on 4 to 5 hours charging (in power off status) is enough. When the handheld is not used for a long time, please make sure the battery is charged once a month to keep its performance.



Warning: Do not disassemble or replace the battery by yourself. Please go to the maintenance station or contact the dealer if there is any problem about battery.

Smart Charging

In order to help users to know the charge status, GeoPro K2 series offers the smart charging tool in the embedded GeoPac software. For more details, please refer to *GeoPac User's Manual*.

Checking the Remaining Power

Tap the *Start>Settings>Control Panel>Power* properties item to check the remaining power. If the remaining power shown in *Main battery* area is 100%, but on the task bar, the battery icon is along with a lightning bolt signal, then it means the battery is not yet fully charged. If the charging is stopped at this time, the remaining power (shown in this dialog box) may be reduced to 85%.



Only when the power part shown in *Main battery* area is as *Good* and 100%, the battery is really fully charged.



Note: This is because the charging voltage detected by WinCE is a little higher than the real battery voltage. Constant pressure charging is important for full charging. Please complete the whole charging process to ensure the working time.

Power Saving Mode

In default condition, screen backlighting will be turned off automatically if no operation (press keys or tap touch screen) has been carried out for 1 minute. The system will enter the standby mode if no operation has been carried out for 30 minutes, and be power off if no operation has been carried out for 2 hours.

Installing Micro SD Card

1. Open the rectangular soft plug at the button of the handheld, you can find Micro SD slot.
2. Put the Micro SD card upside down (the metal surface upward), then push the card into the slot till the card is completely inside the slot, and then close the plug.

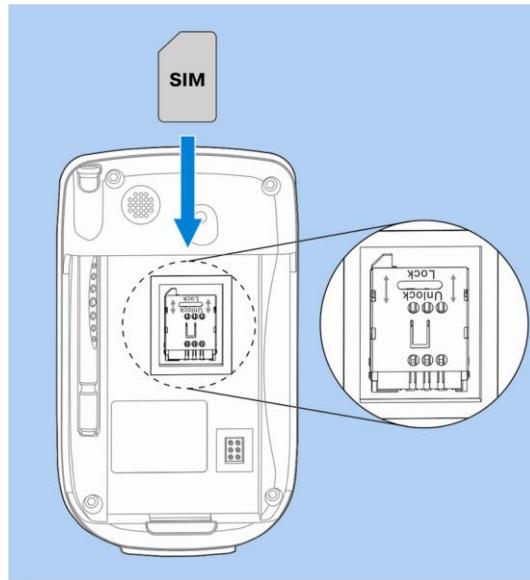


3. You can remove the Micro SD card by lightly pressing the card to make it half pop-out automatically, and then pull it out gently.

Note: Micro SD card (TF card) is a small-size external flash memory card. It is usually used in cell phone, PDA etc. Ordinary SD card is larger than Micro SD card, and is not suitable for K2 series handheld. Please be sure not to mix them up.

Installing SIM Card

1. Take down the battery.
2. Push the metal cover gently following the arrow direction of UNLOCK to open the metal cover, and then insert the SIM card into the SIM card slot, as shown below:



3. Push the metal cover back gently following the arrow LOCK direction to lock the SIM card.
4. Install the battery to finish.

Serial Port Settings

Double tap the *Communication Mode Settings* icon  in the *Control Panel*, then the *Communication Mode Settings* dialog box appears, as shown below:



Users can define the function of COM1 as Radio (PC) or Bluetooth in this dialog box.

Bluetooth Settings

Tap the *Bluetooth Settings* tag in the *Communication Mode Settings* dialog box, the *Bluetooth Settings* interface appears, as shown below left. To use Bluetooth , you need to tap the *Power On* button in the *Bluetooth Power* area, to turn on the power of Bluetooth . Thus the *Turn On* buttons of Bluetooth is activated.

Tap the *Turn On* button in the *Bluetooth* area you can enable the Bluetooth. When the Bluetooth is enabled, you can tap the *Turn Off* button in the *Bluetooth* area to disable it.

Bluetooth Settings

When the Bluetooth is enabled, the icon  appears in the task bar, as shown below left. Double tap the *Bluetooth Device Properties* icon , the *Bluetooth Management* interface pops up as shown below right.



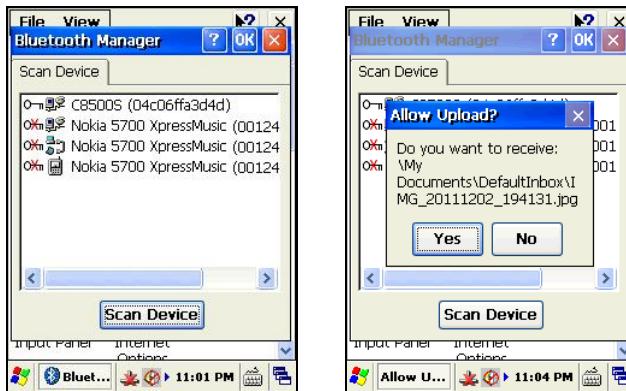
Tap the *Scan Device* button, the handheld begins to scan Bluetooth devices within 10 meters, and show them in the *Scan Device* page, as shown below left. Double tap the device to connect, select the *Trusted* menu item in the appeared menu, as shown below right.



The *Bluetooth Manager* dialog box appeared, as shown below left, tap the *OK* button. Input the matching password (user-defined) in the appeared dialog box, tap the *OK* button, and then wait for inputting the matching password in the other device.



When the other device finished confirmation, the symbol  turns to , which means the matching is successful, as shown below left. After successfully set up the matching, if a file is transmitted from the other device, the Bluetooth file transmission window pops up automatically, as shown below right. Tap the *Yes* button to start download. The file will be saved to *My Device\My Documents\DefaultInbox*.



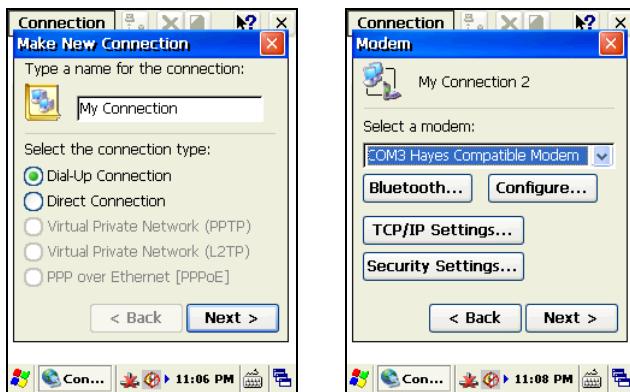
Bluetooth Dial-up Connection

Usually, while scanning the devices, several items will be shown for the same device, for example, the Nokia device shown in the left picture below. To implement its Bluetooth Dial-up function, please double tap the item with the icon ahead, and then select the *Trusted* menu item, and input the matching password.

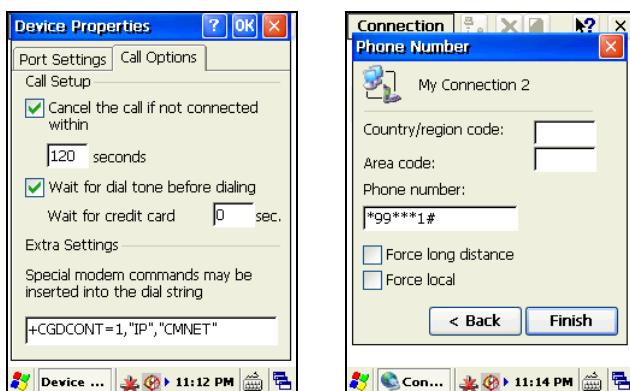
1. When the matching is successful, double tap the icon item, and select the *Active* menu item in the popped up menu. Then the icon will turn to . Now please tap the *OK* button.



2. Select *Start > Settings > Network and Dial-up Connections > Make New Connection*, the *Make New Connection* dialog box pops up as shown below left. Input the connection name, Select *Dial-Up Connection*, and tap the *Next* button. Then the *Modem* dialog box will pop up, as shown below right.

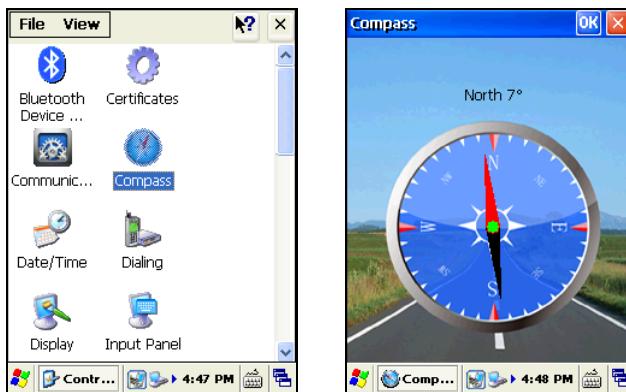


3. Select the matching device in the *Modem* dialog box, and tap the *Configure* button. Then a Bluetooth authority request will appear in the other device. When the request is accepted by the other device, the *Device Properties* dialog box pops up. In the *Call Options* page, input the APN provided by GPRS providers in the *Extra Settings* edit box, as shown below left.
4. Tap the *OK* button to return back to the *Modem* interface. Tap the *Next* button, The *Phone Number* dialog box appears. Input the country code, local area code, phone number *99***1# (this “*99***1#” is just an example for Chinese APN “CMNET”. For more exact information of different countries, please contact your local APN company), as shown below right .Then tap the *Finish* button.



Using the Electronic Compass

1. Find the *Compass* icon  in the *Control Panel* interface, as shown below left.
2. Double tap the *Compass* icon, the compass interface appears, as shown below right.

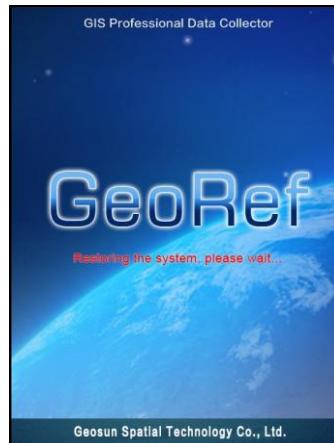


The electronic compass is able to provide the accurate direction for user even with poor satellite signals or in low-speed or static status.

Restoring WinCE System

Make sure the backup of software and data have been done before restoring WinCE system.

In the power off status, keep pressing the “OK” button and press the power button until the handheld turns on and the interface of “Restoring the system, please wait...” is shown as right:



This operation will restore all data and settings to the initial status of handheld except Micro SD. Please note: the software GeoPac will be deleted. Reinstallation is required to perform any field work.

Warning: To avoid data loss, please do not try this operation if it's not necessary. Make sure the backup of software and data have been done before this operation.

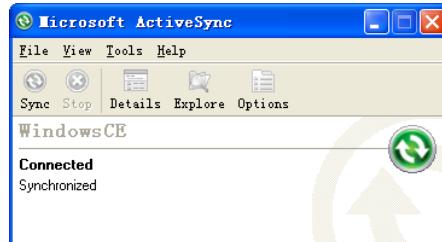
Installing, Uninstalling or Updating GeoPac Software

For details, please refer to the *GeoPac User's Manual*.

Upgrading the Firmware

Method 1:

1. Connect K2 series to PC with data cable. For details, please refer to chapter: [Connecting to PC](#).
2. After Microsoft ActiveSync is connected to handheld as below:



3. Click the *Explore* button of Microsoft ActiveSync to open K2 series resource browser. Copy the latest version firmware file to “Storage Card”.
4. In power off status, press “ESC” and power button at the same time, the interface of “Updating the firmware, please wait...” will be shown as below. Then the handheld will be upgraded to the new version of firmware in Micro SD card.



Method 2:

You can also insert the Micro SD card into Micro SD card reader, and then insert the reader to the USB interface of a PC. Copy firmware file to the Micro SD card, and insert it into handheld. Then by the above method, you can also complete upgrading firmware.

Note: If there are several versions of the firmware for the correct type of handheld, the system will be upgraded to the latest one. Also please make sure there are no other kinds of firmware for different types of handheld such as V2 series and R2 series, or the system will mistake them.

Connecting to PC

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CHAPTER

- **Installing Microsoft ActiveSync**
- **Hardware Connection Setup with PC**
- **Microsoft ActiveSync Automatic Connection**
- **Visiting GeoPro K2 Series Handheld**

Installing Microsoft ActiveSync

GeoPro K2 series is compatible with ActiveSync 4.5 or later. You can download the latest version from the Microsoft website at:

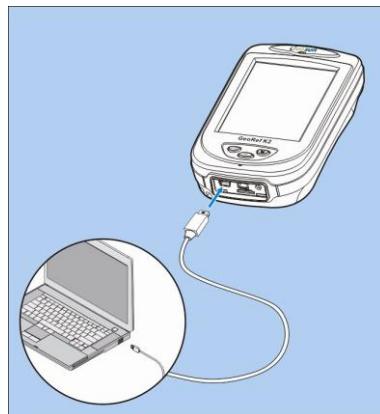
<http://www.microsoft.com/download/en/details.aspx?id=15>

After installing the Microsoft ActiveSync, click the *Start > Program* menu item, find and run Microsoft ActiveSync. In the pop-up *Connection Settings* dialog box, choose *Allow USB connections* option, shown as below.



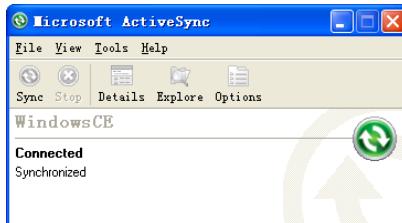
Hardware Connection Setup with PC

Turn on GeoPro K2 series to enter WinCE system. Connect GeoPro K2 series and the USB interface of PC via USB cable, shown as below:



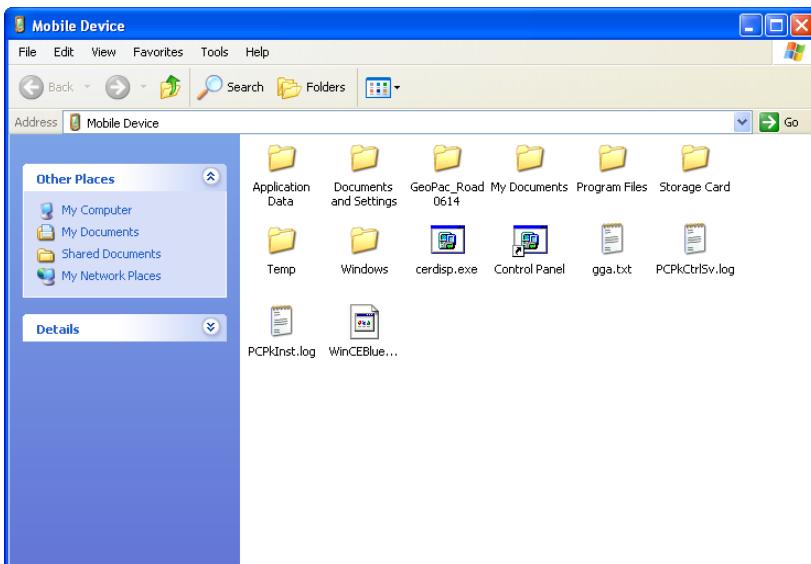
Microsoft ActiveSync Automatic Connection

After the data cable has been connected, Microsoft ActiveSync on the computer will recognize the handheld device and connect automatically. Then select “No” if it asks “Set Up a Partnership Yes or No?” and click the *OK* button, the connection will be completed successfully. When firstly connected,, the driver will be required. Follow the tips to install the driver of WinCE. Find the driver in the CD in the handheld goods package.



Visiting GeoPro K2 Series Handheld

After first successful connection, the Microsoft ActiveSync will automatically connect K2 series to PC with data cable. The mobile device can be seen in Windows resource manager, double-click it then you can visit GeoPro K2 series handheld. Users can add or delete files saved in GeoPro K2 series by PC operation. Users can also download handheld data files to PC conveniently. WinCE resource browser interface is shown as the following picture:



Technical Parameters

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CHAPTER

- System Configuration
- GPS Performance
- Positioning Accuracy
- Interfaces
- Power Performance
- Application Function
- Physics
- Electric Specifications

This chapter describes the technical parameters of Geosun GeoPro K2 series. The specifications are subject to change without notice.

System Configuration

- Operating system: Windows CE 6.0
- Microprocessor: 1GHz industrial-grade processor
- Storage: 512MB DDR2 SDRAM, built-in 512M flash memory
- Display: 3.5 inches sunlight readable color touch screen

GPS Performance

- Channel: 50 channels + L1 C/A
- SBAS: WAAS, EGNOS, MSAS, GAGAN
- Antenna: Built-in high sensitivity anti-interference GPS antenna
- Update rate: 1Hz in default, can support up to 5Hz as option
- First positioning time: 26 sec (typical, cold start)

Positioning Accuracy

- Single Point Positioning: 3-5m
- SBAS: 1-3m
- Real Time Differential: 1m
- Real Time Wide Area Augmentation: 1-3m
- Differential Post-Processing: 0.5m

Interfaces

- Built-in USB port
- Built-in SIM card slot for GPRS communication
- Built-in sealed Micro SD card slot

Power Performance

- Battery: Built-in 3.7 V Li-Ion battery, 4200mAh
- Continuous operating time:
 - Only GPS: one battery for 8h, double for 16h
 - GPS + GPRS: one battery for 6h, double for 12h

Application Function

- Wireless communication
 - Built-in GPRS communication module supporting remote wireless communication
 - Built-in Bluetooth module, easily realizing short distance wireless communication
- Built-in electronic compass, an effective assistance to the GPS fieldwork
- Video: Built-in a 5 megapixel camera ,support on-site image acquisition and annotation
- Audio: Built-in microphone and speaker, support on-site audio acquisition and annotation, audio operation instruction and alarming function

Physics

- Size: 140×84×35mm
- Weight: 383g (with battery)
- Working temperature: -20°C ~ +60°C
- Storage temperature: -40°C ~ +80°C
- Humidity: 95% non-condensing
- Dustproof & waterproof: IP67
- Anti-shock: Resistant to 1.5 meters natural fall

Electric Specifications

- Level C electrostatic anti-interference test

Troubleshooting

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CHAPTER

- **Common Troubleshooting**
- **ActiveSync Common Problems**

Common Troubleshooting

Problem	Cause	Solution
Can't turn on.	Low battery.	Recharge the battery.
	Working temperature is beyond the allowed range (- 20 °C ~ 60 °C).	Bring the handheld into the environment where the temperature is in the allowed range.
Crash in using.	Excessive operations were in processing in the handheld in a short time	Restart the handheld.
The screen is black.	In order to prevent battery power loss, the screen will automatically be black if there is no operation within one minute.	Press any buttons or tap the screen.
	The handheld does not turn on.	Press the "Power" button to turn on the handheld.
	The handheld runs out of power.	Recharge the battery.
The screen doesn't respond to one-tap.	No calibration of the touch screen.	Realign the touch screen.
The screen doesn't respond to double-tap.	The current double-tap speed is too fast or too slow.	Reset the double-tap speed.
The handheld can't be charged.	The internal temperature has risen above 40 °C.	Temporarily turn off the handheld, recharge it when the temperature is dropped to the allowed range.
		Go away from the heat source, such as sunshine. The handheld will charge automatically when the temperature drops to the allowed range.
	The internal temperature has fallen below 0 °C.	Charge the handheld when the internal temperature is over 0 °C.
Can't recognize the storage card.	The storage card has not been inserted properly.	Carefully take out the card, and then insert it into the card slot gently.
	The gold finger (the metal part of card) is dirty.	Use cotton swab with alcohol to wipe it clean before use.
Unable to connect to computer.	Data cable is not connected properly.	Check and connect the data cable.
	The synchronization software has not been installed on the computer.	Install the synchronization software ActiveSync.
GPS signal reception is poor.	Located in tunnel, or under viaduct or other large blocks	Change location to improve signal receiving.
The GPRS dial-up fails or the networking is abnormal.	SIM card has not been inserted properly.	Carefully take out the card, and then insert it into the card slot gently.
	The flow of the SIM card has not been opened or is used up.	Contact the GPRS operators to open the flow.
	The local network signal is weak.	Go to other places with strong signal to re-establish the communication.
	Electromagnetic interference exists around, such as television tower, microwave station, high voltage transmission line, etc.	Be away from the area with strong electromagnetic interference.
	APN setting is not right.	Set the APN according to the SIM card. Please refer to <i>Geopac User's Manual</i> for details.
The Bluetooth dial-up failure.	The device for dial-up can't offer the icon  item.	Use other device for dial-up connection.

ActiveSync Common Problems

Problem	Cause	Solution
ActiveSync fails to connect to the handheld automatically.	The connection is not initiated automatically.	In ActiveSync dialog box, select <i>File > Connection Settings</i> and then tap <i>Connect</i> .
	An incompatible version of ActiveSync is installed.	ActiveSync 4.5 and later version is compatible with GeoPro K2 series. You can download the latest version from the Microsoft website at http://www.microsoft.com/download/en/details.aspx?id=15
	The connection is not enabled in ActiveSync.	Check "Allowing the USB connection" in <i>File > Connection Settings</i> .
	Microsoft USB drive is not installed.	Install Microsoft USB drive.

If the problem you encountered still can not be solved, please contact us. Geosun will offer you excellent after-sales service.

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Contact Us

Thank you for using our GeoPro K2 series collector. We will try our best to provide you the best pre-sales and after-sales service. Please be freely to contact us with any usage condition or advices about GeoPro K2 series, we will reply to you as soon as possible.

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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.

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 Information (SAR)

This device meets the government's requirements for exposure to radio waves. This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

Body-worn Operation

This device was tested for typical body-worn operations. The exposure standard employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6 W/kg. Tests for SAR are conducted using standard operating positions accepted by the FCC with the EUT transmitting at the specified power level in different channels. The highest SAR value for the device as reported to the FCC is 0.17 W/kg when placed next to the body. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided.