

**Wireless GPS Logger
RCV-3000**



User Manual

Version: 1.0

Table of Contents

Overview.....	4
Packing List	5
Main features	6
Technical Specification	7
Getting Started.....	9
HARDWARE DESCRIPTION	11
RCV-3000 LOGGER TRACK LOGGING AND MODE SETTING	13
INSTALLATION OF MINI GPS VIEWER PROGRAM	錯誤! 尚未定義書籤。
EXECUTE THE MINI GPS VIEWER PROGRAM	17
Driver Installation	18
Troubleshooting	19
Federal Communications Commission (FCC) Statement.....	20

Safety Precautions

- Use the power adapter included with the package, using power adapters other than the one provided will result in malfunction and could prove dangerous.
- Note: It may cause explosion if the battery is not properly replaced with the same or equivalent model.
- About the power adapter:
 1. Do not use the power adapter in a wet environment. When hands and feet are wet, do not touch the power adapter.
 2. While using the power adaptor, ensure that the area is well ventilated. Do not let paper or other material cover the power adaptor, as this will interfere with cooling. Do not use the power adaptor whilst it is in a bag.
 3. Do not attempt to repair the device. If device is damaged or is in a wet environment, replace the device immediately.
 4. It is not recommended to charge from a PC because the PC power voltage is not enough to supply the device.

Warranty Statement

- This warranty applies to parts and services that are manufactured and sold through HOLUX. The warranty length is one year from date of purchase (starting from the date on the sales receipt). Under normal user operation, HOLUX provides free repair services.
- HOLUX is not responsible for providing repairs or replacements of any software; HOLUX does not provide any warranty service for third party software/hardware.
- Important instructions
 1. Note: This warranty does not cover damage or malfunction from the below causes: unauthorized disassembly/modification of unit, abuse or incorrect usage, accidental and other unpreventable causes, operation under variables mentioned that are different from those in this product user manual, using parts not made or sold by HOLUX, or repairs done by anyone other than HOLUX and authorized retail/service providers.
 2. Expendable parts are not covered in the warranty.
 3. HOLUX is not responsible for any program, data, or portable storage media damages or loss. Please contact your local HOLUX authorized service provider to learn more about geographical limitations, proof of purchase requests, response time agreements, and other specific maintenance service requests.

Copyright Information

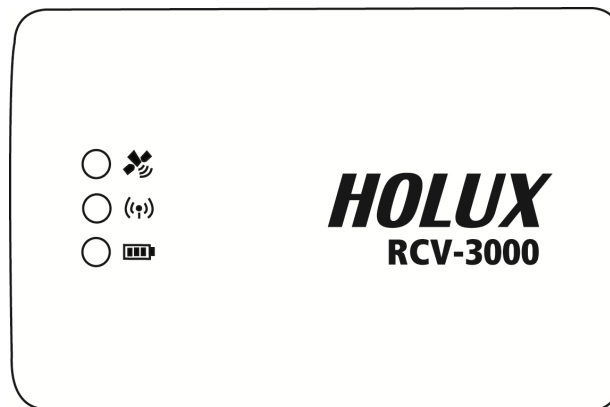
No part of this manual, including the products and software described in it, may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form or by any mean, without the express written permission of HOLUX Technology, Inc.

Copyright, All Rights Reserved.

Technical Support

- If there are any questions regarding the use of this product, please log on to the website www.holux.com and see the FAQ.

Overview



The HOLUX **RCV-3000** Wireless GPS Logger allows users to store of up to **200,000** GPS coordinates of latitude, longitude, time, and elevation. The data can be analyzed by uploading to a computer through its USB/ Bluetooth connection. Once the coordinates and the digital images are integrated, the tracking history and the location the images were taken can be shared through ezTour or Google Earth.

The HOLUX **RCV-3000 Wireless GPS Logger** is a total solution GPS Logger with Bluetooth, USB interface and built-in rechargeable battery for high sensitivity to tracking signal. RCV-3000 design is based on MediaTek Inc. (MTK) GPS solution-MT3329 low power Architecture.

RCV-3000 is a dual-function GPS Logger. Not only transmit satellite information through the PDA or Notebook by Bluetooth interfaces but also is a G-Mouse GPS Logger through a HOLUX designed data cable to deliver satellite signal to the device without Bluetooth interface.

RCV-3000 meets the requirement of field application, such as car navigation, mapping, agriculture surveying and security use under clear view of sky. RCV-3000 contacts to other device through Bluetooth interface, and built-in rechargeable Li-ion battery to save satellite information such as the status of satellite signal, the previous available location, date and time.

With the advanced technology, RCV-3000 can search up to 66 satellites simultaneously, re-acquires satellite signals in 0.1 microseconds and updates position data per second.

Packing List

Thank you for purchasing the RCV-3000 Wireless GPS Logger. Before you start, make sure that the following items are included in your package. If any of these items are missing, please contact your original local HOLUX dealer or distributor.

- **RCV-3000** Wireless GPS Logger 1 Set
- Battery 1 Set
- Mini USB Cable 1 Set
- **RCV-3000** Quick Guide 1 Pcs
- Warranty card 1 Pcs

Option

- Travel Power Supply 1 Set

Main features

- 1). Built in MTK MT3329 Low power consumption GPS chipset.
- 2). 66 parallel satellite-search channels for fast acquisition and reacquisition.
- 3). Superior sensitivity up to -165dBm.
- 4). Built-in WAAS/EGNOS Demodulator without any additional hardware.
- 5). Compatible with Bluetooth Serial Port Profile (SPP) completely.
- 6). Low power consumption. Built-in rechargeable and changeable Lithium-ion battery, the working time can last 28 hours maximum.
- 7). Provide expand terminal contact to other system without Bluetooth device.
- 8). Support NMEA0183 V 3.01 data protocol
- 9). 3 color-LEDs indicate to show the status of device.
- 10). FLASH based program memory. New software revisions upgradeable through serial interface.
- 11). Small, sleek, and lightweight design easily fits in your hand.
- 12). Over-Temperature protection
- 13). Enhanced algorithms -SnapLock and SnapStart provide superior navigation, performance in urban, canyon and foliage environments.
- 14). For Car navigation, Marine navigation, Fleet management, AVL, Personal navigation, Tracking System, and Mapping device application.

Technical Specification

Basic Specification	<ul style="list-style-type: none"> • Chipset: MTK MT3329 chipset. • Channels: 66 parallel satellite-search channels • Frequency: 1575.42 MHz • Receiver: L1, C/A code. • Built-in 4MB flash memory capable of recording 200,000 points of GPS data
Acquisition Time (refer to MTK chip specification)	<ul style="list-style-type: none"> • Reacquisition: < 1 second • Cold start: < 35 seconds • Warm start:< 33 seconds • Hot start: < 1 second
Receiver Accuracy	<ul style="list-style-type: none"> • Normal: < 3 meters CEP without SA • Enable EGNOS or WAAS: Position: < 2.2 meters, horizontal 95% of time < 5 meters, Vertical 95% of time • Velocity: within 0.1 meters / second • Time: 0.1 microsecond synchronized GPS time
Use Limitation	<ul style="list-style-type: none"> • Altitude: < 18,000 meters (60,000 feet) • Velocity: < 515 meters/ second (1000Knots) • Acceleration: 4 G • Jerk: 20 meters / second³, max
Power Supply	<ul style="list-style-type: none"> • External Voltage: 5V DC +/-5% • Batteries: Main Power: Built-in rechargeable Lithium-ion for system power. • Power Consumption: 50~60mA (Normal mode)/ 25mA (Power Saving). • Auto Power saving mode. • Circuit protection on RCV-3000 when over-temperature condition 50°C occurs.

<p>Output and Interface</p>	<ul style="list-style-type: none"> • Output <ol style="list-style-type: none"> I. Output protocol <ul style="list-style-type: none"> Baud Rate: 38400 bps Data bit: 8 Parity: No Stop bit: 1 II. Format. NMEA0183 V3.01: GPGGA (1time/1 sec), GPGSA (1 time/5 sec.), GPGSV (1time /5 sec.), GPRMC (1time /1 sec.), GPVTG (1 time/1 sec), (GLL, or MTK NMEA Command for optional). III. Datum: WGS84. • Input/ Output Interface: <ol style="list-style-type: none"> I. Compatible Bluetooth Serial Port Profile (SPP), Version1.2 and class 2(up to 10 meter range). II. In/Out Port. GPS signal (Out)/Command(In) with USB Level Mini USB Type B Connector.
<p>Physical</p>	<ul style="list-style-type: none"> • Size: 62.5 × 41 × 17.1 mm • Weight: < 53 g • Operating Temperature: -10°C to + 60°C (under the un-charging condition); Charging Temperature: 0°C to + 45°C • Storage Temperature: -20°C to + 60°C • Operating humidity: 5% to 95% No condensing
<p>Other Functions</p>	<ul style="list-style-type: none"> • Bluetooth frequency: 2.4 ~2.48GHz • Bluetooth Input Sensitivity: -85dBm • Low sensitivity of receiving satellite signal: -165 dBm • LED Functions: Indicate Bluetooth status, GPS status, Battery Status and Battery charging status

Getting Started

STEP 1. Charge Battery

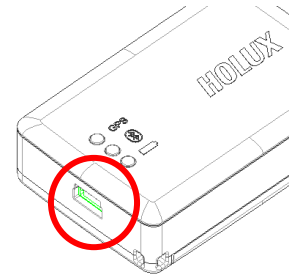
Please charge battery till LED off for the first time.

Power cable plug in Power cable connect to power socket



Charge Battery

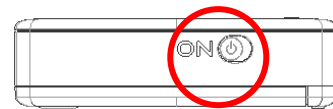
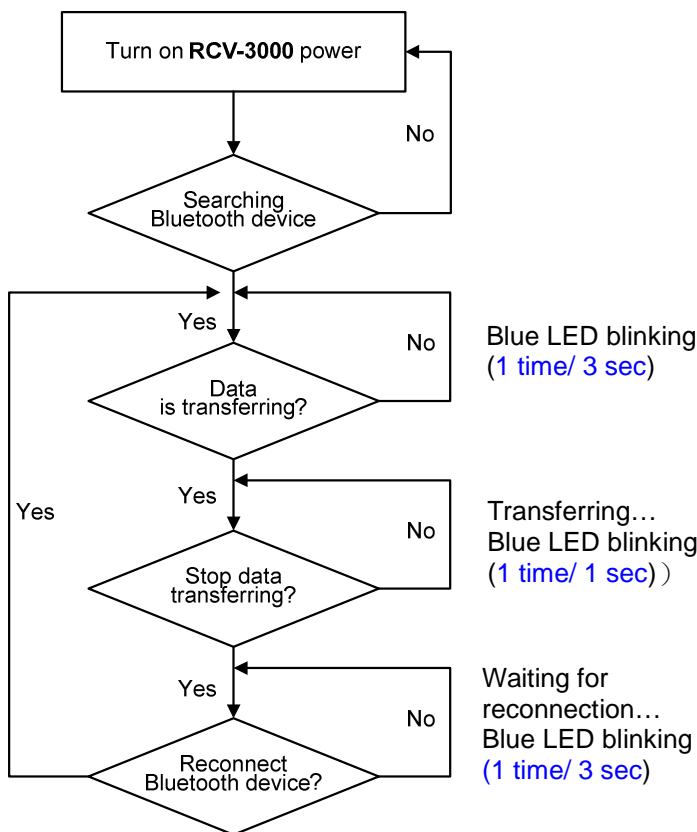
Battery indicator light: **Power too low** ----- Red LED on
Charging ----- Green LED on
Full or Not in charging --- LED off



Mini USB socket

STEP 2. Turn on the power

Bluetooth Status –

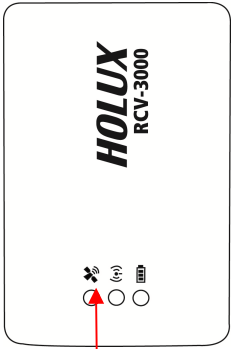
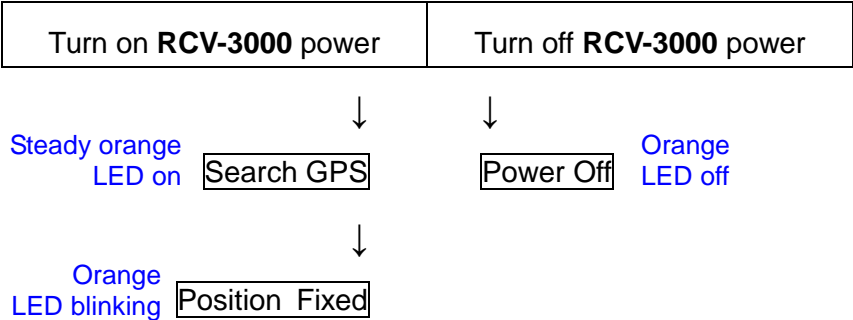


Power switch

Note: Some PDAs have to re-open Bluetooth manager for Bluetooth device re-connection.

GPS Status—

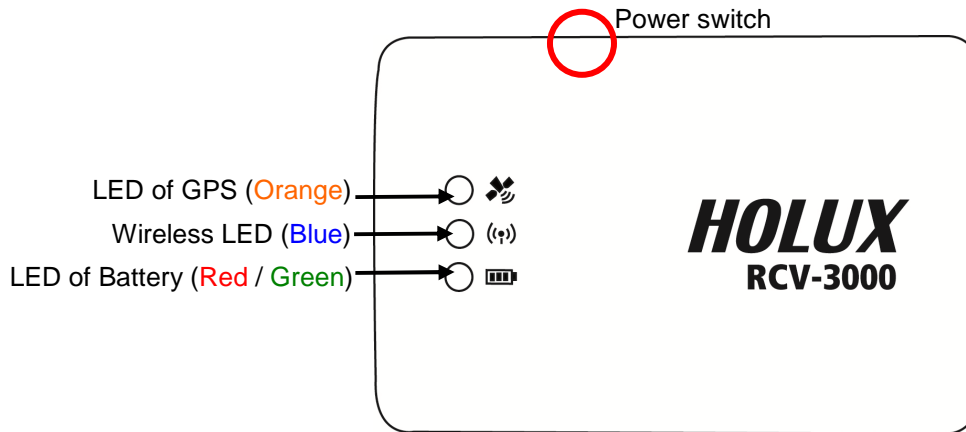
Put **RCV-3000** in clear view of the sky without any obstruction for better satellite acquiring.




Orange LED

Hardware Description

RCV-3000 Body description



LED status:

SYMBOL	COLOR	STATUS		DESCRIPTION
 Bluetooth	Blue	Blinking	1 time / 1 sec	Transferring Data
			1 time / 3 sec	Standby Mode
			1 time / 3 sec	Search Bluetooth Device
 Battery	Red	Light on		Power too low
	Green	Light on		In charging
	N/A	Light off		Battery full or Not in charging
 GPS	Orange	Light on		Acquiring Satellites
		Blinking	1 time / 1 sec	Position Fixed

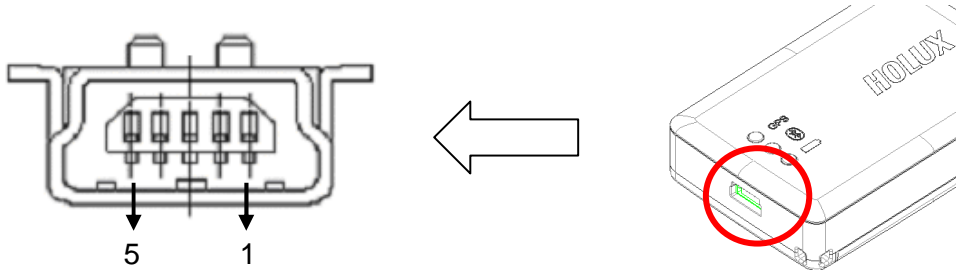
Power Switch:

Power on	Orange light is on.
Power off	Orange light is off.

Power Jack & Data Port

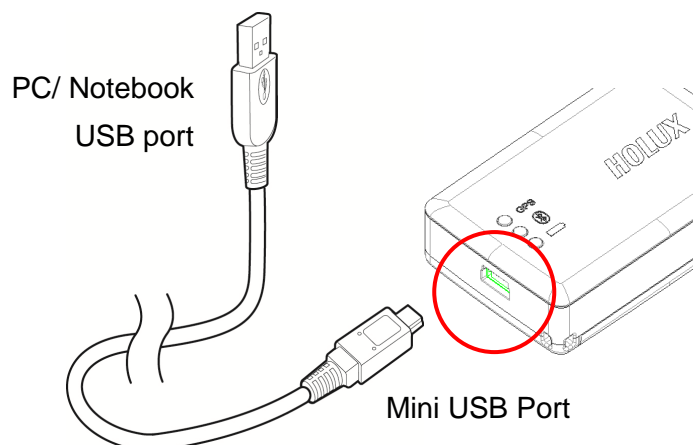
Jack type: Mating face of 5 pin Mini USB Type B female.

Pin definitions see following table.



Pin	Pin Name	Signal and description
1	VCHARG	Positive terminal of DC adaptor that powers the internal charging circuit of Li-Ion battery. The approved power supply is 5.0V +/- 5% @ 850mA.
2	D_Minus	Receive Data. Form peripheral to organizer. (Voltage level is 3.3V ~ 5.0V).
3	D_Plus	Transmit Data. From organizer to peripheral. (Voltage Level is 3.3V ~ 5.0V).
4	NC	
5	GND	Signal ground, Battery charging ground.

Optional accessories and connector description



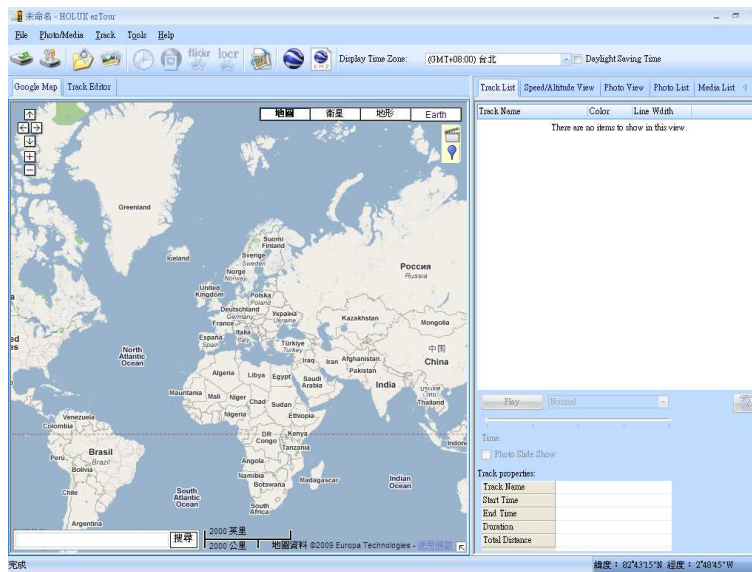
RCV-3000 Logger Track Logging and Mode Setting

Data Logging

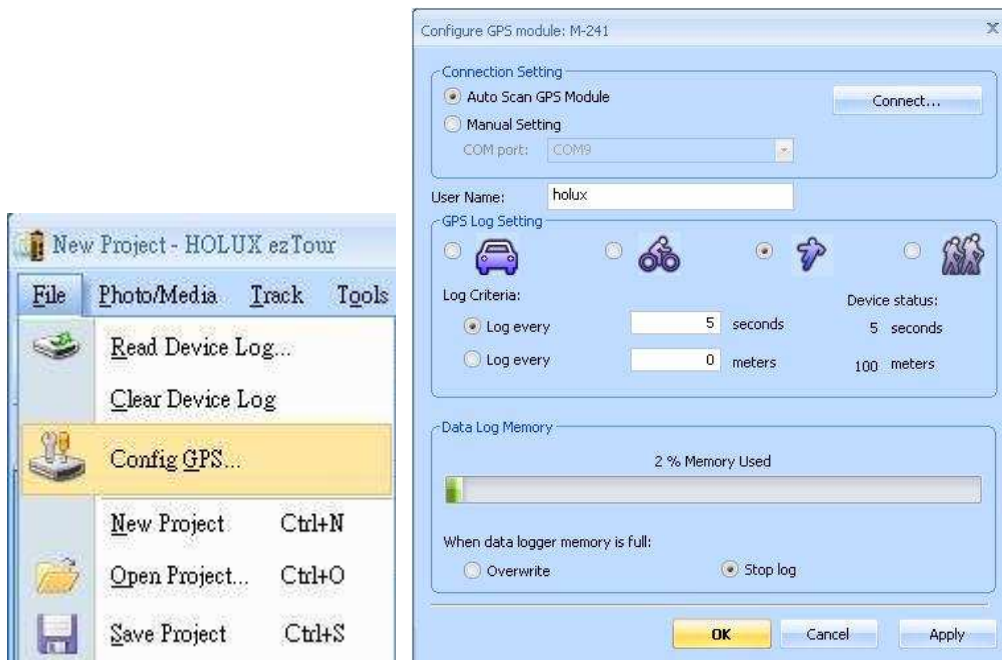
When the power is turned on, the device will automatically search for satellite positioning (orange LED on), and then logging will begin. When the power is switched off, the logging will stop. When the power is turned on again, it will once again conduct satellite positioning and start logging.

GPS Data Logging Mode Setting

1. Install ezTour onto a PC or notebook (see ezTour instructions manual for installation)
2. When the application runs, the following main screen can be seen:



3. From the Menu bar select [Setup GPS Logger] to bring up the settings window



4. Make sure that the RCV-3000 is connected to a PC or notebook, and select [reconnect] or [manual settings]
5. The logger can be set to record by a set time or set distance. The conditions for recording can be set the following ways:
 - (1) Select car, bicycle, exercising, or walking mode.
 - (2) Manually set the time or distance.
6. When the logger's data storage is full, there are two modes to choose from:
 - (1) Rewrite: When the data is full, data will begin to be rewritten, overwriting the data from the beginning.
 - (2) Terminate: When the data is full, the logger will cease to record any further data.
7. Press [Confirm] to start logging according to the new setting.

Data Read

When the logger RCV-3000 is connected to a PC or notebook through USB or Bluetooth, the data can be extracted through ezTour. Please see ezTour instruction manual for details.

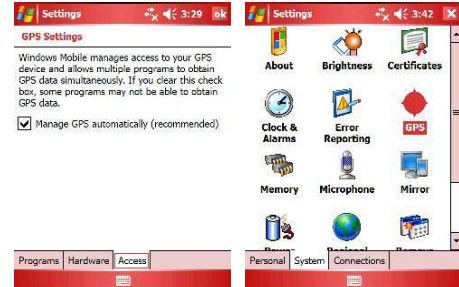
Bluetooth device connection installation

The product includes the application Mini GPS viewer for easy viewing and testing of GPS status. The following is the steps of software installation to setup on PDA, DELL AXIM x51v with Bluetooth Manager. For other PDA or laptop device, the steps might vary.

1. In Pocket PC setting→system panel, enable “manage GPS automatically”.

Note: The setting may vary in other PocketPC or Smartphone , please check the manual or consult the technical service respectively.

2. Tap the Bluetooth icon to start “Bluetooth Manager” on Pocket PC to enable Bluetooth function.



3. In “Devices” panel , tap “New partnership” to search Bluetooth devices nearby. If the result is not found, tap “Refresh” to research again.



4. Choose the Bluetooth device “HOLUX_RCV-3000” and tap “Next”



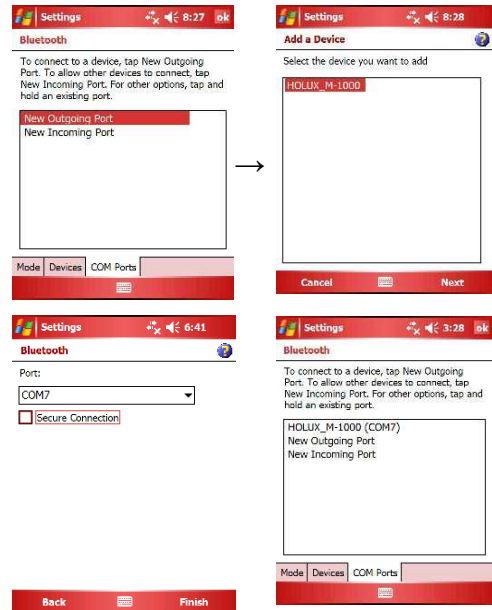
5. Connect to “Serial port” or “SPP Slave”, then tap “Finish”



6. Go to the “COM ports” panel to tap “New Outgoing Port”, choose “HOLUX_RCV-3000” device and tap “Next”.

7. Select the COM port, then tap finish, it will show as right figure, and tap “OK” to finish the Bluetooth setting. Recommend not to use “Secure Connection” which may cause unstable connection.

8. Then you can enable your navigation map program to enjoy GPS function now.

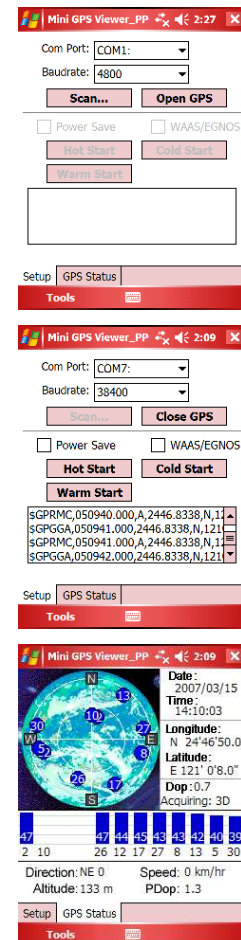


Installation of Mini GPS Viewer program

We provide a program “Mini GPS viewer.exe” for end user to watch the satellite signal receiving status on laptop or PDA device. For Windows 2000/XP OS, you can execute “Mini GPS viewer_PC” directly. For Microsoft Pocket PC, please copy “Mini GPS viewer_PPC” to SD card or device, then execute “Mini GPS viewer_PPC”.

Execute the Mini GPS Viewer program

1. The following window is shown after executing Mini GPS Viewer_PPC, The Windows 2000/XP version is just different on display.
2. Setup the Baud rate: 38400, then tap “Scan” button to scan your COM Port. Select your COM Port respectively, then tap “Open GPS” button. Check log screen below if the satellite data is receiving correctly.
3. Select “GPS Status” panel to observe the GPS information status



4. In “setup” panel you can see “Hot Start” 、 “Warm Start” 、 “Cold Start” 、 which allow you to re-acquisition of Ephemeris and Almanac. Basically the satellites are always moving in the sky, if Ephemeris and Almanac data in GPS Logger can’t meet real satellites status upon you if GPS Logger is over 0.5 hour power off but you are no longer in the previous position , it takes more time for the GPS Logger to get GPS position fix soon. We suggest you can click “Cold Start” or “Warm start” to re-acquisition. Or you can remove the battery for 3 seconds and reinsert it, this operation is the same with “Cold Start”.

Driver Installation

The following is the steps of installation USB driver.

System Requirement

- CPU: IBM, Pentium III or above, or other compatible PC.
- Memory: above 32 MB
- System: Windows 2000/XP

Installation

- I. Starts the driver installer from [HOLUX website](#).
- II. Connect USB data cable to computer. System will search new hardware and install the driver automatically.
- III. Connect **RCV-3000** GPS Logger with USB data cable.

Important

Verify the COM port to start using your own navigation software.

- I. Click **<Start>** menu, select → **<Setting>**, then enter→ **<Controller>**
- II. After entering **<Controller>**, and select **<System>**.
- III. Select **<Device Manager>**.
- IV. Find the **< Connector (COM & LPT)>** and check the Virtual COM Port, which was created by the USB driver.

Please note that the virtual COM port number might be different from every computer. Before using navigation software, please confirm the COM Port numbers created by your computer and provided by your navigation software. Otherwise, the navigating software won't receive the satellite signal, because of the un-match COM Port setting.

Troubleshooting

Problems	Possible Reasons	Methods
No GPS output but GPS timer is counting	Weak or no GPS signal at the place of RCV-3000	Test under open sky at a fix location and run Mini GPS Viewer “Cold start” function.
	The ephemeris and almanac data in GPS memory is no longer valid after no use for a long time.	Remove the Battery for 3 seconds and re-insert, then power on to test again.
Execute fail	Bluetooth function unstable	Power On/Off RCV-3000. Re-Start PDA or PC and refer to “Bluetooth device connection installation” to re-connect.
Can not open the COM port	Bluetooth connection interrupted or COM port is conflicted/ occupied by other programs.	Check the Bluetooth connection again, Check and close other programs that might conflict with.
Can not find RCV-3000	Poor Bluetooth connection	Re-Start PDA or PC and refer to “Bluetooth device connection installation” .

Federal Communications Commission (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 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.

Caution:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate this 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.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

RF Exposure Warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance

FCC Mark Warning :

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

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.

FCC Exposure Statement

This equipment complies with RFCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum 20cm between the radiator and your body.