User Manual

Bluetooth GPS Receiver
XAiOX iTrackU SiRF III
with Route-Recorder and Voice-Announcement

Copyright©2007 XAiOX Technologies, USA

Table of contents

1.   Introduction

1.1 Read Me First
- The battery must be charged for at least 8 hours for 'INITIAL' use. The LED2 (GREEN) will turn off after 3 hours' charging, please keep on charging for 5 more hours. Thereafter, for each time charging the battery, please fully charge for 3 hours.
- We strongly recommend to remove the battery if the device will not be used for over 2 weeks.
- For fast data tracking purpose it is recommended to stay still before the position is fixed. (first FIX then GO!!)

1.2 Overview

The iTrackU Bluetooth GPS receiver, a total solution of GPS Bluetooth wireless technology, is high quality design dedicated to the user who is usually carrying a portable device such as PDAs/smart phones all the time.

The iTrackU allows 17 hours of continuous use with a single battery charge. The iTrackU uses GPS technology to record up to 250.000 Waypoints. This allows you to watch your route in Google Earth or similar programs.

The iTrackU does not only transmit satellite information to the PDA or smart phone via Bluetooth but also become a G-Mouse GPS receiver through a data cable to deliver satellite information to the device without Bluetooth interface.

1.3 Features

- 20-Channel-Tracking
- Cold-/Warm-/Hot-Start: 42/38/1 seconds
- Reacquisition-Time: 0,1 second
- Supported Standard NMEA-0183
- Compatible with Bluetooth-Devices with Serial Port Profile (SPP)
- Small, slim and lightweight device that fits well in your hand
- Voice-Announcement for GPS-, Bluetooth- und Battery-Status
- Auto-on-/off-function: The device switches into sleep-mode if the GPS-coordinates do not change for 15 Minutes. It re-engages approx. 3 seconds after the device recognised a vibration
- Loudspeaker
- Three LEDs on the upper side of the device display Bluetooth- and GPS-reception. A on/off switch is located on the upper side, too.
- Portable Navigation (PDA, Pocket PC etc.)
- With fully recharged Battery (1100mA Lithium-Ion-Battery) up to 17 hours and approx. 2000 hours standby
- High sensitive -159 dBm build in GPS-Receiver, active antenna and Bluetooth-Receiver

2. Hardware Description

Status-Scheme

LED	Colour	Status
LED1 SAT	RED OFF	GPS not yet fixed
	RED FLASHING	GPS fixed. Will transfer data, when BT connection is on.
LED2 Akku	GREEN ON	Unit is switched on (flashing 1 x per second)
	GREEN ON	Unit is in charging process (flashing 2 x per second)
	GREEN OFF	Unit is fully charged
LED3 BT	BLUE ON	Flashing very quickly (in pairing mode)
	BLUE ON	Bluetooth connected (flashing 1 x per second)

Low battery: Notified by voice "battery low" when battery low.

Battery empty: Notified by "beep" sound and device switches off.

The iTrackU will automatically turn on if powered by AC adaptor.

LED1:
GPS-status
Volume up
Add data

LED2:
Power button
Power-status

LED3:
Bluetooth-status
Volume down
Erase data

GPS Bluetooth operates on OS with Bluetooth function that supports SPP

In order to avoid any unexpected problem,
DO NOT attempt to change the default baudrate

LED-Alarm

Charge socket
USB G-mouse socket

External MMCX-antenna connector

3. Box Contents

- XAiOX iTrackU Bluetooth GPS-Receiver
- AC Adapter (220V/110V)
- Car Charger
  (Input 12V, Output 5V)
- 1100mA Lithium-Ion rechargeable battery
- User's manual (CD-ROM)
- Gel Pad Holder

Gel Pad Holder

Car charger   AC Adapter   1100mA Li-Ion-Battery

4. Volume and LED control

1. Volume up

Volume up: press shortly the "volume up" button (notified by "beep" sound)

2. Volume down

Volume down: press shortly the "volume down" button (notified by "beep" sound)

3. LED-lightning on/off

LED on/off: press simultaneous the "volume up" and the "volume down" button for 3 seconds (notified by "beep" sound)

5. Auto Power ON/OFF

The iTrackU equipped with vibration sensor for power management (auto power on or sleep mode)

a. Auto power on/off function is available under all working modes except G-mouse mode
b. Goes to sleep mode if vehicle stays still for 15 minutes
c. Auto power on in 3 sec. when detecting vibration (back to previous working mode)

6. Power OFF the XAiOX iTrackU

Press power button for 1 second to switch off the iTrackU.

We strongly recommend to close the E-map before turning off the XAiOX iTrackU, in order to avoid any possible PDA /Smart phone freeze

7. General Import Notes

Car Charger
At the tip of the car charger you find a removable cover (screw able). Behind this cover there is a changeable 1.5A-fuse. If you detect any malfunction please check this fuse first and replace it if necessary.

Installing your GPS Receiver to a PDA, Pocket-PC, Smart-Phone, etc.
The following instruction how to install the GPS receiver to your device is based on iPaq HP. It is possible that the images shown differ to the screen of your device. Unfortunately we cannot show samples of all different devices because there are too many on the market.
Please refer to the user's manual of your device if you need further help.

8. Connecting to your Bluetooth PDA

1. Turn on the iTrackU
Press power button for 1 second, the LED2 (Power Status LED) and LED3 (Bluetooth Status) start blinking.

2. Activate Bluetooth function of your PDA / smart phone
Before you are trying to activating the Bluetooth function of your PDA / smart phone, please make sure the device is equipped with Bluetooth function, and the driver software has been installed.

3. Activate Bluetooth Manager & Established New Connections Illustrations by using HP 2100 PDA shown as follows:

- First, find the device with which you wish to be connected
- Open "Bluetooth Manager" on your PDA
- Press "New"
- Press "Connect"

Beispiel: iPAQ Bluetooth mit Pocket PC Software
<1> Turn Bluetooth ON   <2> Click ‚Connect!'
     Select ‚Bluetooth Manager'
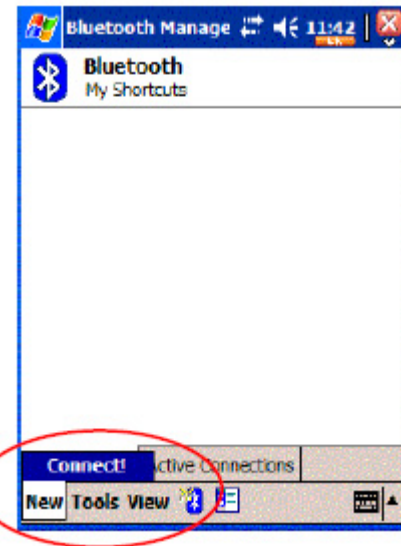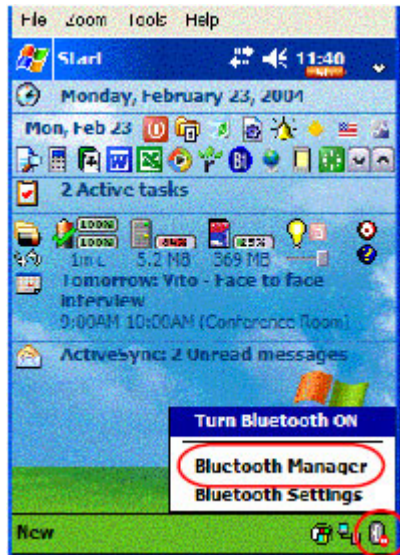
<3> Select 'Explore a Bluetooth device'
   Then click 'Next'.

<4> Select <No device selected>,
   then click 'Next'.

<5> Click ‚BT-GPS' .
    If you are asked to enter a
    password, type ‚0000'.

<6> Select ‚SPP slave',
    then click ‚Next'.
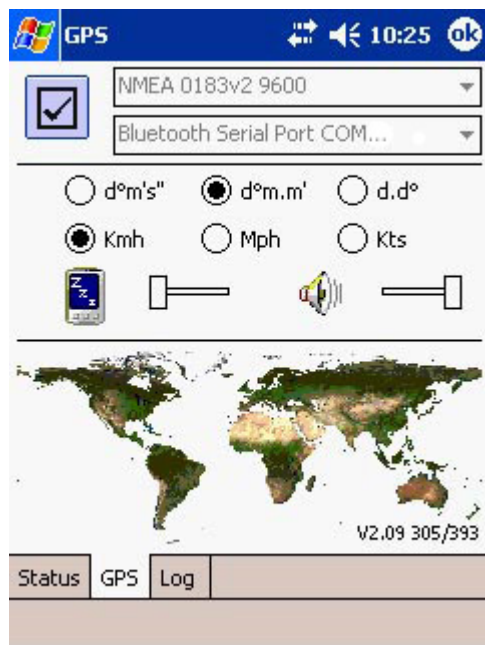
<7> Click ‚Finish'.
BT-GPS connection is now
established successfully.

<8> Tap the Bluetooth icon again and
select 'Bluetooth setting'.

**<9> Settings for TomTom Navigation
       Software. You can use any free
       Serial COM Port (outgoing)**

9. Working Modes

Mode A: GPS + Bluetooth + Route-Recorder

1. Power on iTrackU by pressing power button for 1 second
2. "Bluetooth On" by voice announcement
3. Bluetooth status LED (**LED3: BLUE**) blinking quickly
4. Connect the iTrackU to your Bluetooth PDA (please refer to 8: connecting to your Bluetooth PDA)
5. GPS status LED (**LED1: RED**) blinking when GPS is fixed (by voice announcement)

Mode B: GPS + Route Recorder (Bluetooth Off)

1. Power on iTrackU by pressing power button for 1 second.
2. Switch Bluetooth off by pressing power button for 1 second
3. "Bluetooth Off" by voice announcement
4. Bluetooth status LED (**LED3: BLUE**) off
5. GPS status LED (**LED1: RED**) blinking when GPS get fixed (by voice announcement)

Remark:
Bluetooth Function
Bluetooth can be turned on anytime by pressing power button for 1 second, user will hear "Bluetooth On" by voice announcement

Route-Recorder
Route-Recorder can be working without Bluetooth, please see previous page for operational setting

Mode C: G-Mouse + Route-Recorder (Bluetooth Off)

The iTrackU can be used as a G-mouse by simply connecting to laptop PC via USB cable

1. Connecting iTrackU to laptop PC via USB cable, (USB to mini USB cable) please make sure that the Bluetooth is off
2. Please install USB driver (in document CD) to your laptop PC
3. COM port set-up: start – control panel – system – hardware – device manager – ports (COM&LPT)
4. GPS status can be read by running GPS software (i.e. Visual GPS)
5. Speed camera detector can be working under G-mouse mode, please see previous page for operational setting

10. Use the Route-Recorder

Install driver

1. Insert supplied cd
2. Open folder "iTrackU-Software"
3. Open folder "iTrackU-USB-driver"
4. Open folder "InstallShield"
5. Run "setup.exe"
6. Connect the device and your operating system will install
   the driver automatically

Adjust the iTrackU

1. Insert supplied cd
2. Open folder "iTrackU-Software"
3. Open folder "Set Data Log Utility"
4. Run "Set_Log_Data.exe"
5. Select the Com-Port, with which the iTrackU
   is connected (please refer to page 21)
6. Please choose the log interval
       a. By Time (0 – 3600 sec.)
       b. By Distance (between 100 und 3000 meters)
7. Choose "Update Setting Value" to save the settings
8. Choose "Erase All Log Data" to delete all logged data
9. Now the iTrackU automatically logs your route
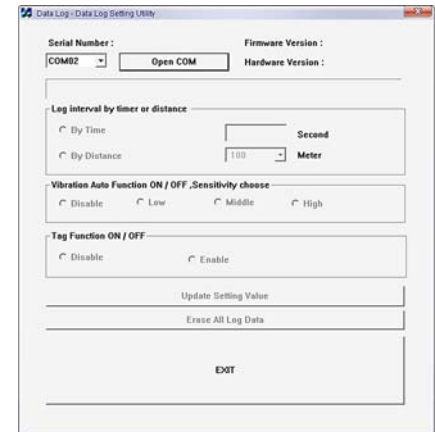
Remark:
– You can set the vibration auto function on/off or choose the
  sensitivity of the sensor.
– You can set the tag-function on/off (this function allows you
  to save your current position by holding the "volume up" button)

Dump logged Data

1. Insert supplied cd
2. Open folder "iTrackU-Software"
3. Copy folder "Dump Log Data Utility" on your hard-disk
4. Run "Dump_Log_Data.exe"
5. Select the Com-Port, with which the iTrackU is connected
   (please refer to page 21)
6. Please choose the data range for the output file
        a. All Log Data (displays all logged data)
        b. Search Log Data by Date (displays the data of a defined period)
        c. Search Log Data by Tag (displays the data with a defined tag)
7. Please choose the output file format
        a. Build Output File (creates *.CSV for Exel)
        b. Output for Google Earth (creates *.KML for Google Earth)
        c. Output for Trackmaker (creates *.TXT for Trackmaker)
        d. Build Output Raw Data File (creates RawData.dat, which includes the RMC-lines of
           the NMEA0183 protocol)

Detect Com-Port

1. Open control panel (start → settings → control panel)
2. Doubleklick on "system"
3. Choose register "hardware" and run the device manager
4. Among "ports (Com and LPT)" you find the line "BT+GPS+DATA LOG" in which you find the Com-Port the iTrackU is connected with

11. Technical Specification

GPS Chip:	SiRF Star III
Frequence:	L1, 1575, 42 MHz
C/A Code:	1,023 MHz Chip Rate
Channels:	20
Antenna:	Built-in low noise patch antenna
	(External Antenna optional)
Ext. Antenna Port	MMCX-Antenna
Acquisition Rate:	
Cold Start:	approx. 42 Seconds
Warm Start:	approx. 38 Seconds
Hot Start:	approx. 1 Second
Re-Acquisation:	approx. 0,1 Second
Update-Interval:	1 Hz (max.)
Accuracy:	
Position:	5 – 25 m, CEP (without SA)
Velocity:	0,1m/sec (without SA)
Time:	100 ns synch. to GPS time
Sensitivity:	-159 dBm Tracking

Bluetooth Protocol: Communication: GPS Protocol:	Bluetooth serial Distance up to 10 m NMEA-0183 GGA, GSA, GSV, RMC (Data Bit: 8, Stop Bit: 1)
Battery:	Rechargeable 1100mA/h Lithium-Ion Battery And 5V DC Input Charging time: approx. 3 hours Operation time: approx. 17 hours, after fully charged
Operation Current:	65mA
Operating temperature:	-20 °C to +60 °C
Storage temperature:	-20 °C to +85 °C
Rel. Humidity:	5 % to 90 % (non-condensing)
Date:	WGS-84
Altitude:	<18.000 m
Velocity:	< 515 m/s
Acceleration:	< 4 G
Motion Jerk:	20 m/sec³ max.
Dimensions: Length: Width: Hight:	 77.4 mm 46.3 mm 23.2 mm
Weight:	56,5 g (battery includet)
Speaker:	1 watt / 8 ohm

Flash memory size:	4M – logs 249.856 Waypoints
Log Data Format:	NMEA Data
Output Data Format:	WGS84 2-degree transverse Mercator
Data conclude:	Longitude, Latitude, Speed, UTC, Tag

Output data search:	Search by
	   a. all log data
	   b. data range
	   c. Tag (Max. 250 section)

Output file:	a. Google Earth (GPSLogForGoogleEarth.kml) b. Trackmaker (Trackmaker.txt) c. *.csv (LogData.csv)
Log interval (by setting):	a. Timer (0 ~ 3600 sec.) b. Distance (50 m, 100 m, 200 m, 300 m, 500 m, 1000 m, 2000 m, 3000 m)
Vibration auto power on/suspend (by setting):	15 min. auto into suspend Settings: 1. Disable function 2. High sensitivity 3. Middle sensitivity 4. Low sensitivity