APOSTEC LTD.
APOSsite solutions

http://www.apos-tec.com

Wireless GPS Receiver

User's Manual

GPS-626

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1. Introduction

1.1 Overview

The APOS Bluetooth GPS-626 receiver is a Global Positioning System Receiver with Bluetooth wireless technology. This wireless GPS receiver allows you to receive GPS data on mobile handheld wirelessly. By sending GPS position data over Bluetooth, you can position the receiver for the best possible reception all without wires. The advent of wireless GPS receiver is becoming the next generation of GPS receivers.

The APOS Wireless GPS receiver integrates Bluetooth module into GPS device. It shows the high performance, low power consumption, easily portable, rechargeable & removable battery function and wireless data transmission. If you have a Pocket PC or other portable devices enabled with Bluetooth function, you can take advantage of your device's Bluetooth capability to wirelessly add GPS positioning technology. When you choose suitable navigation software, you can apply to personal, vehicle tracking, and marine navigation.

If you use this wireless GPS receiver, you will ignore the messy cords and antenna and add the portability of your Pocket PC. In addition, this wireless GPS receiver can change the exhausted battery to full battery like battery of mobile phone.

1.2 Main Features

- ◆ New SiRF Star III technology
- ◆ 20 Channels "All-In-View" Tracking
- ◆ Position accuracy of 10 meters 2D RMS
- ◆ Cold/Warm/Hot Start Time: 42/38/1 Seconds
- ◆ Reacquisition Time: 0.1 seconds
- ◆ RF connector for external GPS antenna
- ◆ Support Standard NMEA-0183

- ◆ Support Power Saving mode
- ◆ Compatible with Bluetooth devices with Serial Port Profile (SPP)
- ◆ Small, sleek, and lightweight design easily fits in your hand
- ◆ Two LEDs show Bluetooth and GPS status
- ◆ Nokia 6230 battery – easily found
- ◆ Dimension: 64.5mm x 42.0 mm x 23.0 mm

2. Technical Specifications

2.1 Electrical Characteristics

	ITEMS	DESCRIPTION
Chipset	GPS	SiRF star III technology
General	Frequency	L1, 1575.42 MHz
	C/A code	1.023 MHz chip rate
	Channels	20
	Antenna Type	Built-in Ceramic patch antenna
Accuracy	Position	10 meters, 2D RMS
		1-5 meters, DGPS corrected
	Velocity	0.1 meters/second
	Time	1 microsecond synchronized to GPS time
Datum	Default	WGS-84
Acquisition Rate(Open Sky & Stationary Requirements)	Reacquisition	0.1 sec., average
	Hot start	1 sec., average
	Warm start	38 sec., average
	Cold start	45 sec., average
Dynamic Conditions	Altitude	18,000 meters (60,000 feet) max.
	Velocity	515 meters/second (1000 knots) max.
	Acceleration	<4g, max.
	Jerk	20 meters/second^3, max.
Power	Main power input	**5V DC input**
	Operational Power	3.3VDC±10% (from internal Li-polymer battery pack)
	Battery Source	Rechargeable and removable 900 mAh Li-polymer battery with 5V DC input charging circuit.
	Battery Charging	Full charge 8~9 hours

	Backup Power	Using main battery
	Operational Current	0.55W at 5VDC (full power), 0.3W(Trickle Power)
Main Interface	Connection	Communication via Bluetooth Serial Port Profile(SPP)
	Protocol Messages	GGA,GSA,GSV,RMC,VTG,GLL
	Output Format	GGA(1sec), GSA(1sec), GSV(1sec), RMC(1sec), VTG(1sec)

<Note>

Measure of Power Consumption		
Status	Current (mA)	Power Consumption(mW)
Power On	105	420
GPS connect BT	110	440
GPS Fix without connecting BT Device.	105	420
GPS Fix with connecting BT Device	110	440

2.2 Other Characteristics

	Items	Description
Environmental Characteristics	Humidity range	5% to 95% No condensing
	Operating temperature range	-20℃ to +60℃ (-4℉ to 140℉)
	Storage temperature range	-40 deg. C to +80 deg. C
Battery Environmental Characteristics	Battery discharge	-20℃ to +60℃ (-4℉ to 140℉)
	Battery charge	0℃ to +50℃ (32℉ to 122℉)
	Short period storage temperature (< 1 month)	-20℃ to +60℃ (-4℉ to 140℉)
	Long time storage temperature(>1 month)	-20℃ to +25℃ (-4℉ to 87℉)
Physical Characteristics	Length	64.5 mm
	Width	42.0 mm
	Height	23.0 mm
	Weight	46 g (without chargeable battery)
		68 g (with chargeable battery)
	Antenna connector	Built-in Ceramic patch antenna

2.3 Firmware Characteristics

Items	Description
Core of firmware	SiRF Star III
Baud rate	19200

Code type	NMEA-0183
Datum	WGS-84
Protocol message & Output frequency	GGA(1sec), GSA(1sec), GSV(1sec), RMC(1Hz), VTG(1Hz)

3. Operation

3.1 Hardware Description

【1.】 Power supply connector

【2.】 Bluetooth power LED indicator.

Power Off

The LED light is off.

Power On

The LED lights flash and wait for connections

Blue light LED

It indicates that the BT is currently in use.

【3.】 Descriptions on Indicator

Recharge Status

A red LED light is shown while GPS is in recharge status.

After recharging is completed the LED light is turned off.

Shortage of Power supply

A flashing red LED light indicates a shortage of power supply.

GPS Positioning status

During GPS positioning a flashing green LED light is shown.

** When there is a shortage of power supply during GPS positioning, both red and green*

LED light will flash.

【4.】 Power On/Off

On  Off ?

3.2 Battery/Power Recharge

lease recharge the lithium battery before use.

Connect the battery charger to the GPS power supply connector.

For details on LED indicators during recharge status, please refer to sections on Hardware Description.

Note:

The USB power cable that comes with this product can be used to connect to PC for recharge purposes, with the exception of APOS GPS 626 which includes a non- standard USB cable, that will interfere with the normal GPS functionality during recharge status. Use a car or travel recharge kit instead.

4. Notices

4.1 Global Positioning System

The Global Positioning System (GPS) is operated and maintained by the Government of the United States of America who are responsible for the availability and the accuracy of the system. Changes in the operation, availability and accuracy may affect the operation of your GPS receiver.

4.2 Aircraft and Hospitals

Use of devices with an antenna is prohibited on most aircraft and in many hospitals. The APOS Wireless GPS receiver is a receiving and transmitting device with two antennas' s and should not be used in these environments.

4.3 Heat Reflective Shields

Modern vehicles may have a heat reflective shield in the windshield, preventing proper GPS signal reception if the receiver is placed under the windshield. To get proper reception:

(a) Use an external antenna, or

(b) Place the receiver in a different position, or

(c) Attach the cradle to the windshield behind the rearview mirror, where many vehicles have an opening in the heat reflective shield, indicated by a black outline.

4.4 Important

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4.5 Battery

This product uses a Lithium-Ion battery. Please charge fully before first use. Operation in low (below 0℃/32℉ or high (over 40℃/110℉) temperatures will affect power supply efficiency and the ability to charge the battery. All Lithium-Ion batteries will experience power supply efficiency deterioration over time even if not used and have a limited life expectancy. Permanently powering the battery will reduce life expectancy. Do not use your product in a humid, wet and/or corrosive environment. Do not put, store or leave your product in or near a heat source or in a high temperature location and do not expose it to temperature over 60℃(140℉). Failure to follow these guidelines may cause the Lithium-Ion battery to become hot, explode or ignite and cause injury and/or damage. **THE LITHIUM-ION BATTERY CONTAINED IN THE PRODUCT MUST BE RECYCLED OR DISPOSED OF PROPERLY. USE ONLY WITH SUPPLIED CHARGER(s) AND SUPPLIED AC ADAPTOR FOR BATTERY CHARGING.**

4.6 FCC

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.

CAUTION

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

FCC RF Radiation Exposure Statement

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

4.7 Prohibition of co-location

This device must not be co-located or operating in conjunction with any other antenna or transmitter.