Rikaline GPS-6033

New Generation High Sensitivity

-157dBm (-187dBw)

Bluetooth GPS

User's Guide

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0. Quick Use for First Time Setting

Please read this instruction carefully before use.

0.0 Standard Package

GPS Unit + Lithium-ION Rechargeable Battery + Cigarette Adapter + Travel Charger + Document CD + Warranty Card + Quick Use

0.1 Fully charge the battery for at least 10 hours before using.

A fully charged battery can last for 10-12 hours continuously operation facilitating the low power consumption design at 80mA. Please put the switch at “OFF” or “AUTO” position if you will not use the device for an extended period of time.

0.2 Activate the Bluetooth function in your PDA or PC

Before activating the Bluetooth function in your PDA/PC, please Switch On GPS-6033 Receiver for paring and check if your device is equipped with Bluetooth function. If not, you may need to acquire an optional CF (PD-3005) or SD Bluetooth card.

NOTE: The pairing procedure is required to execute in the first time only.

0.3 Automatically create a shortcut in Bluetooth Manager window

After the pairing complete, the system will automatically create a quick connect device, Rikaline in Bluetooth Manager. In further use, you just need to click this device to connect our Bluetooth Receiver.

0.4 Check the Serial Port in Bluetooth Setting

After pairing with the Receiver complete, please click “Serial Port” to confirm the COM port. If you use PDA/PC to pair the Receiver, please select “Outbound COM port”.

0.5 Set correct Serial Port in your map software

Activate your map function and select the correct serial port.

0.6 Switch off the Bluetooth function

Switch off the Bluetooth function before you turn off your PDA/PC, and Switch off Receiver will disconnect the GPS function. If the BT GPS is on “AUTO” position, you do not need to take extra action.

0.7 Turn off your PDA or PC

0.8 Others

0.8.1 LED Indicator

	LED Status	Flash	ON	OFF
1	Power (Red)	Low Power	Recharging	Sufficient Power
2	Bluetooth (Blue)	Paring	Transmitting Mode	
3	GPS (Green)	Position not fix	GPS Fix	GPS not Powered

0.8.2 Pass Word

Not necessary

0.8.3 Manufacturing Setting

Datum: WGS84
Sentence: GGA, GLL, GSA, GSV, RMC, VTG
Baud Rate: Auto

0.8.4 GPS features

Next generation sensitivity at -157dBm (-187dBw)
32-channel acquisition parallel

0.8.5 BT Feature

Sensitivity: -85
SPP profile

0.8.6 Overall Feature

Low power consumption: <80mA

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1. Introduction

1.1 Overview

The ***Rikaline*** **GPS-6033 Bluetooth GPS Receiver** is a total solution GPS receiver with Bluetooth wireless transmitting ability, designed based on next generation indoors GPS technology with super sensitivity at **-157dBm (-187dBw)** and low power (<80mA) consumption. This revolutionary system provides you unbelievable positioning sensitivity allowing you to have easy and quick position fix in urban canyon conditions. You may use this device for strict needs of positioning applications such as car navigation, mapping, surveying, security, agriculture and so on. Only clear view of sky is necessary to the unit.

The GPS-6033 communicates with other electronic utilities wireless Bluetooth technology, the GPS-6033 acquire 32 satellites parallel when cold start, and display the best 8 signals for power saving purpose.

1.2 Features

The GPS-6033 provides a host of features that makes it easy for integration and use.

1. Patent pending **AUTO ON-OFF** function makes you **hands-free** once you place the device in place.
2. Patent pending **Easy-Place** function makes the device placed without sliding around the car in a snap.
3. Wireless transmitting positioning status up to 10 meters.
4. High sensitivity receiver acquires 32 satellite signals parallel while providing first fast fix and low power consumption.
5. Advanced design ideal for applications with soft touch and minimal space.
6. User initialization is not required.
7. Dual communication channels and user selectable baud rates allow maximum interface capability and flexibility.
8. FLASH based program memory: New software revisions upgradeable both for GPS and Bluetooth.
9. LED display status: The LED provides users visible operating status for Recharging, Battery power lever, Bluetooth and GPS. No more extra device needed.
10. Rechargeable Li-ION battery provides you a durable use.

1.3 Technology specifications

1.3.1 Physical Dimension

Single construction integrated antenna/receiver.
Size: 83.0(W) x 44.5(D) x 23.5(H) (mm)
3.27"(W) x 1.75"(D) x 0.93"(H).
Weight: 72g (battery included)

1.3.2 Environmental Characteristics

1) Operating temperature: -30°C to +85°C.
2) Storage temperature: -50°C to +100°C.

1.3.3 Electrical Characteristics

1) Input Power:
External: +4.75 ~ 5.5 VDC
Battery: +3.7V

1.3.4 Performance

1.3.4.1 LED functions

We built 3 LEDs in the GPS-6033 Bluetooth GPS with functions as follows:

1) Battery (Red)
Blinking: Low Battery
OFF: Full power or still sufficient
ON: Recharging or Switch is at “ON” position

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2) Bluetooth (Blue)
   Twinkle: Paring
   ON: In Transmitting mode

3) GPS (Green)
   ON: Position Fix
   Twinkle: Device is on and position is not fix

1.3.4.2 GPS Functions

1) Acquisition: 32 satellites parallel.
2) Update rate: 1 second.
3) Acquisition time

Reacquisition	0.1 sec., averaged
Hot start	6 sec., averaged
Warm start	30 sec., averaged
Cold start	30 sec., averaged

4) Position accuracy:
   Non DGPS (Differential GPS)

Position	< 5 meter (RMS)
Velocity	0.1 meter / second, with SA off
Time	1 microsecond synchronized GPS time

5) Dynamic Conditions:

Altitude	18,000 meters (60,000 feet) max
Velocity	515 meter / second (1000 knots) max
Acceleration	4 G, max
Jerk	20 meters/second, max

1.3.4.3 Bluetooth Functions

1) Transmits up to 10 meters.
2) Details specifications please refer to appendix D at page 19.

1.3.4.4 Battery

1) Capacity: 1000mAh.
2) Type: Li-ion rechargeable, danger-free (Non-fire, Non-explosion).

1.3.5 Interfaces

1) Dual channel RS-232 compatible level, with auto adjusted baud rate.
2) NMEA 0183 Version 2.2 ASCII output (GPGGA, GPGLL, GPGSA, GPGSV, GPRMC, GPVTG).

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2. Operational characteristics

2.1 Initialization

After you place the battery into the housing, and put the switch at ON or AUTO, then the GPS-6033 is ready to work for you. When you activate the Bluetooth function in your machine (PDA or PC) and get pairing with GPS-6033, you may start GPS function. As soon as the initial self-test is complete, the GPS-6033 begins the process of satellite acquisition and tracking automatically. Under normal circumstances, it takes approximately 30 seconds to achieve a position fix at the first time, 30 seconds if ephemeris data is known. After a position fix has been calculated, information about valid position, velocity and time is transmitted over the output channel.

1) The GPS-6033 utilizes initial data, such as position, date, time and satellite orbital data, to achieve maximum acquisition performance. If significant inaccuracy exists in the initial data, or the orbital data is obsolete, it may take more time to achieve a navigation solution. The GPS-6033 Auto-locate feature is capable of automatically determining a navigation solution without intervention from the host system.

2.2 Navigation

After the acquisition process is complete, the GPS-6033 sends valid navigation information over output channels. These data include:

1) Latitude/longitude/altitude
2) Velocity
3) Date/time
4) Error estimates
5) Satellite and receiver status

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3. Hardware interface

3.1 Physical

Size: 83.0(W) x 44.5(D) x 23.5(H) (mm)
3.27"(W) x 1.75"(D) x 0.93"(H).
Weight: 72g (battery included)

3.2 Hardware Interface

The GPS-6033 includes a new generation low power GPS module, a Bluetooth module and a Li-ION rechargeable battery in a unique style gadget. Simply place it on the dashboard (with our patent pending **Easy-Place**) of the car or any place facing to the sky for transmitting GPS signal to your notebook PC, PDA or other devices, which facilitated with Bluetooth functions.

3.3 Connector

Battery recharging connector: 4.0mm DC jack, with center "+" (positive).
Active antenna connector: MMCX

3.4 Accessories

80026: **Easy-Place,** 35mm round pad sticking on the dashboard or other place for hold GPS-6033
A-6003-E: Travel adapter, with 120V, 230V adapter
A-9004: Lithium-ION, rechargeable battery, 1000mAh
A-6024-40: Cigarette Adapter, DC Jack 4.0mm, 850mA, 5 meter
A-10305-M: Active Antenna, 5 meters

3.5 Switch Function

Switch	Function	
OFF	Off	System power Off
ON	On	For paring and operating of Bluetooth GPS.
AUTO	Auto	1// Works on **Auto ON-OFF** function (Patent pending) 2// Automatically starts when Car Engine Starts (Through Cigarette Adapter). 3// Automatically switch off the power when Car Engine is off or un-plug the Cigarette Adaptor.

3.6 LED Indicator

There are 3 LEDs indicating the state of the BT GPS

	System state	LED_Bluetooth	LED_GPS_Power	LED_Battery
1	STANDBY	Flash	Flash	On
2	PAIRING	Flash	Flash	On
3	CONNECTING	Flash	Flash	On
4	ACTIVE	On	On: GPS fix Flash: non-fix	On
5	BATTERY FULL	N/a	N/a	Off: System off On: system on
6	BATTERY LOW	N/a	N/a	Off: System off Flash: system on
7	BATTERY CHARGING	N/a	N/a	ON

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4. Bluetooth Connection

Please follow below instructions step by step: **There is no pass word needed.**

4.1 Browse Devices

Firstly, you need to find the device with which you want to establish connection.

Open “Bluetooth Manager” on your pocket pc.
Click “New”
Click “Connect”

Search Bluetooth device “Rikaline 6033”
Select “Explore a Bluetooth device”
Click “Next”

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To find the Bluetooth device
Double click “Rikaline”

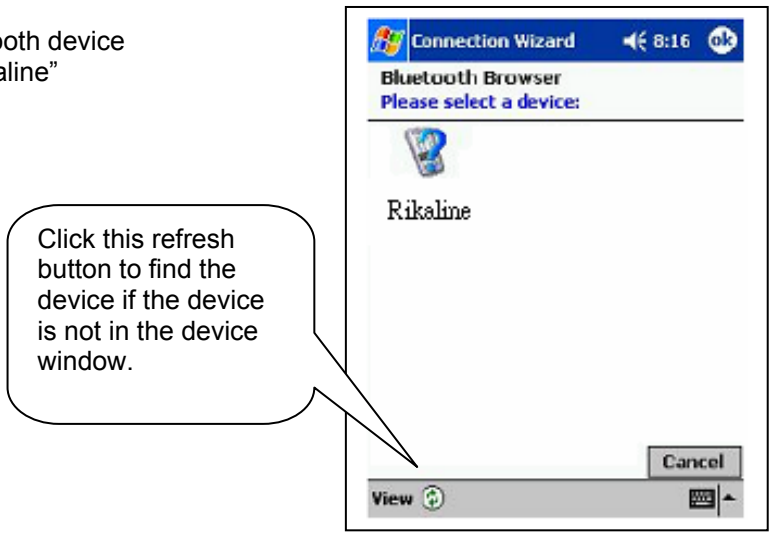

Fig. 1 Browse Service

Found the Bluetooth device
Tap “Rikaline”

4.2 Browse Services

Double click the device with which you want to establish SPP connection to browse its service as Fig. 2 & Fig. 3.

Connect to SPP Slave
Select SPP slave
Click “Next”
Click “Finish”

Fig. 2 Browse Service

Fig. 3 Browse Service

Finish Bluetooth Manager Setup
Tap and Hold “Rikaline: SPP slave”
Click “Connect”
Finish Bluetooth setup

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After you click the SPP service, it will show as Fig. 4:

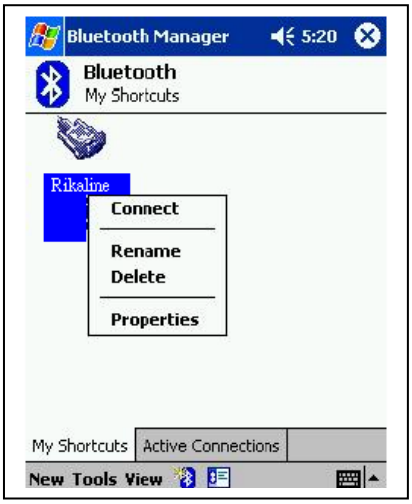

Fig. 4 Connect to SPP

Fig. 5 Connection Complete

After connect successfully, it will show as Fig. 5

4.3 Application

Now you can use any Navigation system through Bluetooth SPP Profile.

4.4 Disconnect

There are 3 different ways to disconnect the operation

4.4.1 Double click the SPP shortcut, and click Disconnect on popup Menu.

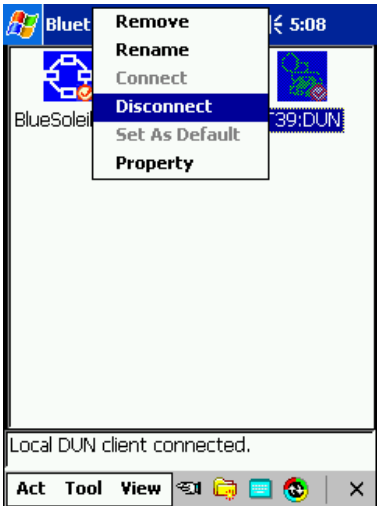

Fig. 6 Disconnect from pop menu

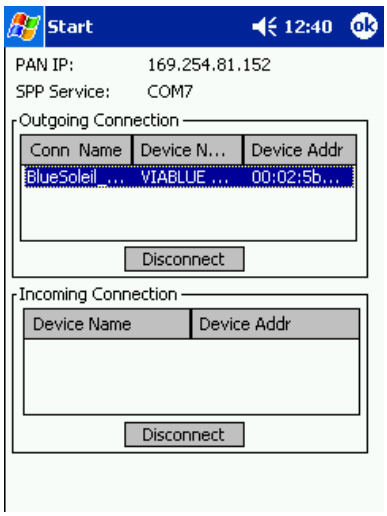

Figure 7 Disconnect from Status Window

4.4.2 In the Status window, select the SPP connection, and then click Disconnect button.

In most navigation system when you select disable GPS icon, the SPP connection will be disconnected automatically. If you want to use the navigation again, you need to establish the Bluetooth SPP connection first.

4.4.3 Use Shortcut

After a new connection was established successfully, a shortcut for the connection will be generated. Users may also double click the particular shortcut icon (represented by the Connection Name) and click the connect on the Pop_Menu to re-establish the connection.

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5. Safety Statement

5.1 R&TTE

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

5.2 FCC

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.**
2. **This device must accept any interference received, including interference that may cause undesired operation.**

The radiated output power is far below the FCC Radio frequency exposure limits. Nevertheless, this device should be used in such a manner that the potential for human contact during normal operation is minimized.

Warning: Changes or modifications made to this equipment not expressly approved by Rikaline International Corp. May void the FCC authorization to operate this equipment.

Important

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.**

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6. Warranty

The GPS-6033 is warranted to be free from defects in material and functions for one year from the date of purchase. Any failure of this product within this period under normal conditions will be replaced at no charge to the customers.

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Appendix A Software Interface

The GPS-6033 interface protocol is based on the National Marine Electronics Association's NMEA0183 ASCII interface specification, which is defined in NMEA0183, Version 2.2 and the Radio Technical Commission.

A.1 NMEA Transmitted Messages

The GPS-6033 outputs data in NMEA-0183 format as defined by the National Marine Electronics Association (NMEA), Standard.

Table A-1 NMEA-0183 Output Messages

NMEA Sentence	Description
GPGGA	Global positioning system fixed data
GPGLL	Geographic position latitude \ longitude
GPGSA	GNSS DOP and active satellites
GPGSV	GNSS satellites in view.
GPRMC	Recommended minimum specific GNSS data
GPVTG	Course over ground and ground speed

A.1.1 Global Positioning System Fix Data (GGA)

Table A-2 contains the values for the following example:

$GPGGA,161229.487,3723.2475,N,12158.3416,W,1,07,1.0,9.0,M, , , ,0000*18

Table A-2 GGA Data Format

Name	Example	Units	Description
Message ID	$GPGGA		GGA protocol header
UTC Time	161229.487		Hhmmss.sss
Latitude	3723.2475		ddmm.mmmm
N/S Indicator	N		N=north or S=south
Longitude	12158.3416		dddmm.mmmm
E/W Indicator	W		E=east or W=west
Position Fix Indicator	1		See Table 5-3
Satellites Used	07		Range 0 to 12
HDOP	1.0		Horizontal Dilution of Precision
MSL Altitude	9.0	Meters	
Units	M	Meters	
Geoid Separation		Meters	
Units	M	Meters	
Age of Diff. Corr.		Second	Null fields when DGPS is not used
Diff. Ref. Station ID	0000		
Checksum	*18		
<CR> <LF>			End of message termination

Table A-3 Position Fix Indicator

Value	Description
0	0 Fix not available or invalid
1	GPS SPS Mode, fix valid
2	Differential GPS, SPS Mode, fix valid
3	GPS PPS Mode, fix valid

A.1.2 Geographic Position with Latitude/Longitude (GLL)

Table A-4 contains the values for the following example:

$GPGLL,3723.2475,N,12158.3416,W,161229.487,A*2C

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Table A-4 GLL Data Format

Name	Example	Units	Description
Message ID	$GPGLL		GLL protocol header
Latitude	3723.2475		ddmm.mmmm
N/S Indicator	N		N=north or S=south
Longitude	12158.3416		dddmm.mmmm
E/W Indicator	W		E=east or W=west
UTC Position	161229.487		hhmmss.sss
Status	A		A=data valid or V=data not valid
Checksum	*2C		
<CR> <LF>			End of message termination

A.1.3 GNSS DOP and Active Satellites (GSA)

Table A-5 contains the values for the following example:

$GPGSA,A,3,07,02,26,27,09,04,15, , , , , ,1.8,1.0,1.5*33

Table A-5 GSA Data Format

Name	Example	Units	Description
Message ID	$GPGSA		GSA protocol header
Mode 1	A		See Table 5-6
Mode 2	3		See Table 5-7
Satellite Used (1)	07		Sv on Channel 1
Satellite Used (1)	02		Sv on Channel 2
……			….
Satellite Used			Sv on Channel 12
PDOP	1.8		Position Dilution of Precision
HDOP	1.0		Horizontal Dilution of Precision
VDOP	1.5		Vertical Dilution of Precision
Checksum	*33		
<CR> <LF>			End of message termination

(1) Satellite used in solution.

Table A-6 Mode 1

Value	Description
M	Manual—forced to operate in 2D or 3D mode
A	2D Automatic—allowed to automatically switch 2D/3D

Table A-7 Mode 2

Value	Description
1	Fix Not Available
2	2D
3	3D

A.1.4 GNSS Satellites in View (GSV)

Table A-8 contains the values for the following example:

$GPGSV,2,1,07,07,79,048,42,02,51,062,43,26,36,256,42,27,27,138,42*71
$GPGSV,2,2,07,09,23,313,42,04,19,159,41,15,12,041,42*41

Table A-8 GSV Data Format

Name	Example	Units	Description
Message ID	$GPGSV		GSV protocol header
Number of Messages	2		Range 1 to 3
Message Number	1		Range 1 to 3
Satellites in View	07		Range 1 to 12

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Satellite ID	07		Channel 1 (Range 1 to 32)
Elevation	79	degrees	Channel 1 (Maximum 90)
Azimuth	048	degrees	Channel 1 (True, Range 0 to 359)
SNR (C/No)	42	dBHz	Range 0 to 99, null when not tracking
....	....		
Satellite ID	27		Channel 4 (Range 1 to 32)
Elevation	27	degrees	Channel 4 (Maximum 90)
Azimuth	138	degrees	Channel 4 (True, Range 0 to 359)
SNR (C/No)	42	dBHz	Range 0 to 99, null when not tracking
Checksum	*71		
<CR> <LF>			End of message termination

NOTE: Items <4>,<5>,<6> and <7> repeat for each satellite in view to a maximum of four (4) satellites per sentence. Additional satellites in view information must be sent in subsequent sentences. These fields will be null if unused.

A.1.5 Recommended Minimum Specific GNSS Data (RMC)

Table A-9 contains the values for the following example:

$GPRMC,161229.487,A,3723.2475,N,12158.3416,W,0.13,309.62,120598, ,*10

Table A-9 RMC Data Format

Name	Example	Units	Description
Message ID	$GPRMC		RMC protocol header
UTC Time	161229.487		hhmmss.sss
Status	A		A=data valid or V=data not valid
Latitude	3723.2475		ddmm.mmmm
N/S Indicator	N		N=north or S=south
Longitude	12158.3416		dddmm.mmmm
E/W Indicator	W		E=east or W=west
Speed Over Ground	0.13	Knots	
Course Over Ground	309.62	Degrees	True
Date	120598		ddmmyy
Magnetic Variation		Degrees	E=east or W=west
Checksum	*10		
<CR> <LF>			End of message termination

A.1.6 Course Over Ground and Ground Speed

Table A-10 contains the values for the following example:

$GPVTG,309.62,T, ,M,0.13,N,0.2,K*6E

Table A-10 VTG Data Format

Name	Example	Units	Description
Message ID	$GPVTG		VTG protocol header
Course	309.62	Degrees	Measured heading
Reference	T		True
Course		Degrees	Measured heading
Reference	M		Magnetic (1)
Speed	0.13	Knots	Measured horizontal speed
Units	N		Knots
Speed	0.2	Km/hr	Measured horizontal speed
Units	K		Kilometers per hour
Checksum	*6E		
<CR> <LF>			End of message termination

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Appendix B Earth Datum & Output Setting

B.1 Earth Datum

The GPS-6033 is built in earth datum with WGS84.

B.2 Setting

B.2.1 Manufacturing Default

Datum: WGS84.
Baud Rate: Automatically adjustable.
Output: GGA, GLL, GSA, GSV, RMC, VTG.

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Appendix C Detailed Specifications

C.1 Bluetooth Specifications

C.1.1 Major Specification

	Specifications
Wireless Interface	Compliant with Bluetooth Spec. Version 1.2
Bluetooth Protocol Stack Supported	All + Extended SCO
Bluetooth Profiles Supported	SPP
Frequency	2.4 GHz license-free ISM band
Range (Open Environment)	Up to 10 meters Range (30ft)
Radio Receiver Sensitivity	<-85

C.2 LED status

NO.	Function	Description
1	PWD	ON: Recharging ON: Power On Blinking: Battery Low
2	BT	OFF: Data Transmitting ON: Standby ON.: Pairing
3	GPS	ON: Position is fixed OFF: Not Powered Flash: Position is not fixed

C.3 Switch

NO.	Function	Description
1	OFF	GPS power Off
2	ON	For paring and link of Bluetooth.
3	AUTO	Works on Auto Switch GPS-6033 start when Car Engine Start(Car Power Adapter). Car Power Adaptor: turn off the power or unplug the Car Power Adaptor. The GPS-6033 will turn off.

C.4 Battery

C.4.1 General Specification

	ITEM	SPECIFICATION
1	Type	Li-ION Rechargeable Battery
2	Model	A-9004
3	Typical Capacity	1000 mAh
4	Nominal Voltage	3.7 V
5	Internal Resistance (packed)	30 – 70mΩ
6	Weight	Approx 23 g
7	Maximum Charge Current	1.0 C (1000 mA)
8	Charge Voltage	4.20 ± 0.05 V
9	Maximum Discharge Current	1.0 C
10	Charge method	CC/CV
11	Temperature For Recharge For Discharge	 0 ~ 45 °C -20 ~ +60 °C
12	Storage Temperature Within 1 month	 -20~+65 °C*

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	Within 3 months Within 1 year	-20~+45 °C* -20~+25 °C*

C.4.2 Testing Data

Electrical Characteristics

NO	ITEM	TESTING INSTRUCTION	REQUIREMENTS
1	Complete Charge	Charge the battery with 1c of constant current and 4.2V constant voltage for 2.5 hours.	
2	Nominal Capacity	Measure discharge capacity with discharge current 0.2C to 2.75V cut-off within 1 hour after complete charge.	950mAh
3	Cycle Life	Measure the capacity after 300 cycles of complete charge and discharge at 1C current to 2.75V cut-off	≧80% of initial Capacity
4	Storage	Capacity after 30days storage at 25℃ form complete charge	Retention capacity≧90%
		Capacity after 7days storage at 60℃ form complete charge	Recovery capacity≧90%

Environmental Characteristic

NO	ITEM	TESTING INSTRUCTION	REQUIREMENTS
1	Temperature testing	Measure capacity with constant discharge current 1C to 2.75V cut-off at each temperature after complete charge at 25℃. Percentage as an index of the capacity compared with 100% at 25℃.	25% at -20℃ 60% at 0℃ 100% at 25℃ 96% at 60℃
2	Constant temperature /humidity	Keep the battery at 40℃ and 90%RH for 96hrs	Recovery capacity≧85%
3	Vibration	The battery will be vibrated 10 times in three mutually perpendicular directions with amplitude of 0.35mm and changing frequency between 10 and 55Hz. The rate of scanning frequency is from 10Hz to 55Hz with the rate of 1Hz per min.	The battery shall not rupture, smoke, catch fire, vent or leak.
4	Impacting Testing	The battery will be impacted 1000±10 times with the acceleration of 100m/s^2 and pulse lasting time 16ms.	
5	Free fall	The battery will be dropped free five times in three mutually perpendicular directions from the height of 1.0m onto a hard board with the thickness of 20mm	

Safe Characteristic

NO	ITEM	TESTING INSTRUCTION	REQUIREMENTS
1	Short Circuit	The battery is to be short-circuited by connecting the positive and negative terminals of the battery with and external load of less than 50mΩ	The battery shall not rupture, smoke, catch fire, vent or leak.
2	Over charge testing	According to the method of UL	
3	Over discharge testing	After complete charge, the battery will be discharged to end voltage. Then Connect with external load of 30Ω for 24hrs.	

C.4.3 Cautions

1) The best operating performance is between -20 ~ +60 °C. Higher or lower temperature could cause damage to the battery.
2) Operated with external power supply will not hurt battery life since battery does not discharge. Therefore, it operating temperature range is -40 ~ +85°C.
3) Recharge the battery for 10 hours before use.

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Appendix D Trouble Shooting

D.1 Trouble Shooting

Problems	Reasons	Methods
No position output but timer is counting	Weak or no GPS signal can be received at the place of GPS-6033	Find an open space for your GPS-6033
No position output but timer is counting	At outdoor space but GPS signal is blocked by building or car roof.	Use an optional Active Antenna
Execute fail	Bluetooth function unstable	Re-Start PDA or PC or re-install software
Can not turn on the COM port	Install GPS-6033 incompletely or The COM port of the device is being used	Install GPS-6033 completely or stop other device that is being used.
Can not find out GPS-6033	Poor connection	Re-Start PDA or PC and re-install software.
No Signal	No action for few minutes may cause the Pocket PC entry power saving mode. It will close the COM port at the same time.	Close the application and execute it again to re-open the COM port.
No Signal	Weak or no GPS signal when using GPS-6033 indoor	Go outdoors to improve the poor GPS signal.

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Appendix E Ordering Information

E.1 Product Options

E.1.1 Standard Package

GPS-6033 (Bluetooth GPS Receiver) + Lithium-ION Rechargeable Battery + Travel Charger (110V/230V) + Cigarette Adapter + Easy-Place Pad x 2 + Documents CD + Warranty Card + Quick Installation Reference

E.2 Accessories

E.2.1 Power Adapter

A-6024-40 Cigarette Adapter, 850mA, with input 6-30Vdc, DC jack 4.0mm
A-6003-E: Recharging Adapter, DC Jack 4.0mm, 120V, 230V

E.2.2 Battery

A-9004: Battery, Li-ION, 1000mAh

E.2.3 Active Antenna

A-10305-M: Active Antenna, MMCX, 5 meters, 26dB

E.2.4 Easy-Place Pad

80026-B: For holding BT GPS, Black
80026-G: For holding BT GPS, Dark Gray

E.2.4 PDA Holder

1	A-2002-B	PDA Holder, Suction Cup, 150mm, Short Arm, Magnetic Pad
2	A-2002-BL	PDA Holder, Suction Cup, 320mm, Long Arm, Magnetic Pad
3	A-2011	Talk Holder, Adj. Volume, GPS cable, Cig. Adapter, 220mm
4	A-2012	PDA Holder, Suction Cup, 220mm
5 (1)	A-2501-xx	PDA Connector with Earphone Cable, A-6011

Remarks: (1) Details please find at www.rikaline.com.tw

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