

SiRF STAR III

Bluetooth GPS Receiver

2006/7/21	Sheng Jay Automation Technologies Co., Ltd. No.10, Lane 30, Da An Road, Hsin Chuang City 242, Taipei, Taiwan, R.O.C Tel: 00 886 2 2203 0301 Fax: 00 886 2 2206 2122 Email: service@sja.com.tw Website: www.sja.com.tw	GENERAL
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1. Notice:

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2.1 FCC Notices:

Notice: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

IMPORTANT NOTE: To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user's authority to operate the device.

Model: SJ-5286AIII

FCC ID: UGJSJ-5286AIII

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.

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2.2 FCC Information:

The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:

The 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 instruction, may cause harmful interference to radio communication. However, there is no grantee 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.

The user should not modify or change this equipment without written approval from Sheng Jay Automation Technologies Co., Ltd. Modification could void authority to use this equipment.

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3. Introduction:

The SJ-5286AIII is a compact-size, high performance Bluetooth GPS receiver with elegant mechanical design. The core of this elegant device is the SiRF star III GPS receiver IC and the RFMD Bluetooth chipset.

The SJ-5286AIII is a class 2 Bluetooth device, with range of 10 meters. It supports v1.1 Bluetooth Serial Port Profile, which ensures compatibility with all devices such as PDA and smart phones which also support the SPP Bluetooth Profile.

There are three LED indicators on the SJ-5286AIII – a green (GPS) LED, a blue (Bluetooth) LED, and a red (power status) LED. The green LED will be lit when the GPS receiver is in acquisition mode, and will start blinking every 2 seconds when the GPS position is fixed (i.e., tracking mode). The blue LED will be blinking every 2 seconds when the Bluetooth is in connection and be blinking every 8 seconds if the Bluetooth connection between the host and SJ-5286AIII is lost. The red LED will be blinking to indicate the battery power level is low, on when charging the battery and off if the battery is fully charged.

It also incorporates an intelligent power management scheme so that the GPS is turned off if before the Bluetooth connection is established, or when the Bluetooth connection is lost. Together with the large capacity mAh rechargeable battery, the operating time of the SJ-5286AIII is much longer than most of the Bluetooth GPS receivers currently on the market.

4. Packing List:

Before you star up, make sure that your package includes the following items. If any item is missing or damaged, please contact your dealer immediately.

- Bluetooth GPS receiver
- Rechargeable Li-ion battery
- CD with the User Manual
- DC car power charger
- Travel charger

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5. Main Features:

- SiRF Star III GPS chipset
- 20 parallel channels
- NMEA0183 compliant protocol
- Fast TTFF at low signal level
- High accuracy
- Smart power saving
- WAAS/ ENGOS is supported
- Bluetooth Technology

6. Specification:

System Specification		
Frequency		L1, 1575.42 MHz
C/A Code		1.023MHz chip rate
Channels		20 all-in-view tracking
Tracking Sensitivity		-159 dBm
Accuracy	Position Horizontal	10m 2D RMS (without SA)
	WAAS enabled	5m 2D RMS (without SA)
	Time	1 micro-second synchronized to GPS time
	Velocity	0.1m/sec 95% (without SA)
Datum	Datum	WGS-84
Acquisition Rate	Hot Start	1 sec., average (with ephemeris and almanac valid)
	Warm Start	38 sec., average (with almanac but without ephemeris)
	Cold Start	42 sec., average (neither almanac nor ephemeris)
	Reacquisition	0.1 sec., average (interruption recovery time)
Protocol	GPS Output data	NMEA0183 protocol
	GPS Transfer rate	9600
Dynamic Condition	Acceleration	Less than 4G
	Altitude	18,000 meters max.
	Velocity	515 meters/ sec. max.
Interface		Bluetooth V1.1 certified with a Class 2 Bluetooth radio
Power	Voltage	Rechargeable Li-ion battery

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Technical Specification

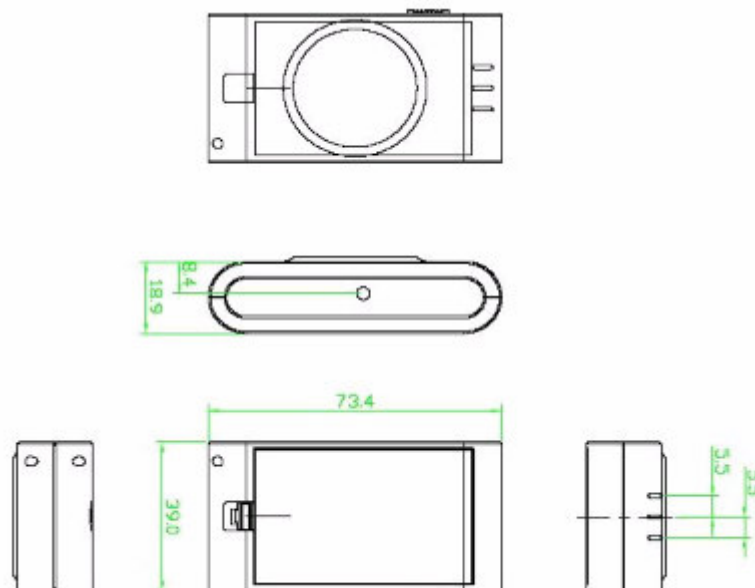
Dimension		66.0 x 39.0 x 18.9 mm (L x W x H)
Temperature	Operating	-20℃ ~ +60℃
	Storage	-20℃ ~ +80℃
	Humidity	Up to 95% non-condensing

7. Operation:

7.1 Device Description:






7.2 Mechanical Drawing:



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7.3 LED Status:

Symbol	LED	Status	Description
Bluetooth 	Blue	1. Stand-by mode	Light 0.1 second every 8 seconds (0.1 sec On→ 7.9 sec OFF)
		2. Connected	Blinking one time every 2 seconds (0.5 sec On→ 1.5 sec OFF)
GPS 	Green	1. Acquisition	Steady light
		2. Tracking	Blinking every 8 seconds (7.9 sec On→ 0.1 sec OFF)
		3. GPS position fix	Blinking every 2 seconds (0.5 sec ON→ 1.5 sec OFF)
Battery 	Red	1. In normal	OFF
		2. In low battery	Blinking (0.5 sec ON→ 1.5 sec OFF)
		3. In charging	Steady light

7.4 Usage:

7.4.1 To turn on the SJ-5286AIII Bluetooth GPS receiver:

When turn on the power of SJ-5286AIII, all the LED lights will blink one time. When there is a host Bluetooth device enables the connection between the Bluetooth and SJ-5286AIII, the blue LED will blink once every two seconds. When switch the power of the SJ-5286AIII on, the GPS receiver will start to acquire the satellites. No matter the SJ-5286AIII gets the position fix or not, if there is no connection between the Bluetooth device and the SJ-5286AIII, the Bluetooth GPS will turn off the GPS in five minutes. For better satellite acquisition, make sure that the GPS receiver is in clear view of the sky without any obstruction for better satellite acquiring.

When the connection between the Bluetooth device and SJ-5286AIII is established, the GPS tools or navigation software can be run and the Bluetooth GPS receiver will start to transfer the NMEA data to Bluetooth device.


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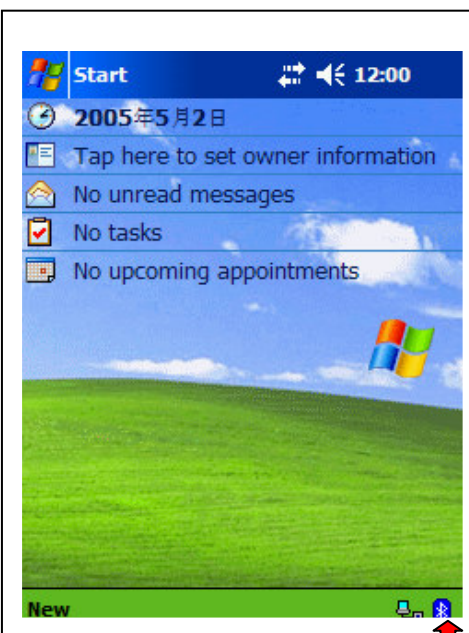
7.4.2 Connection:

7.4.2.1 Connect to PDA:

SJ-5286AIII supports Bluetooth Serial Port Profile V1.1, works with any Bluetooth enabled device with Serial Port Profile.

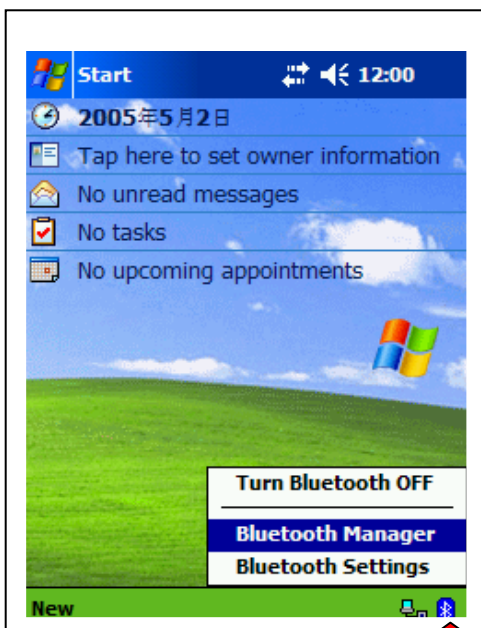


1. Click the Bluetooth icon at the right bottom of task bar.
2. Turn Bluetooth On.

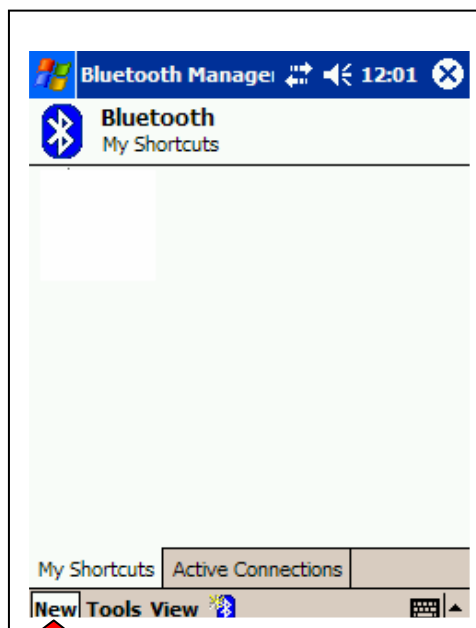


3. Bluetooth is enabled.

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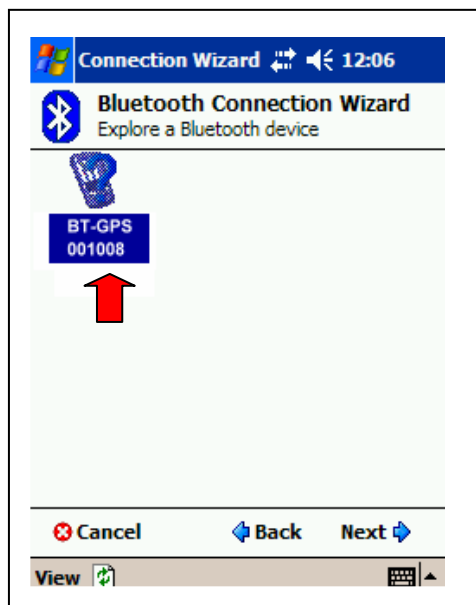
4. Click Bluetooth icon.
5. Select Bluetooth Manager.



6. Click New button to active Bluetooth Connection Wizard.



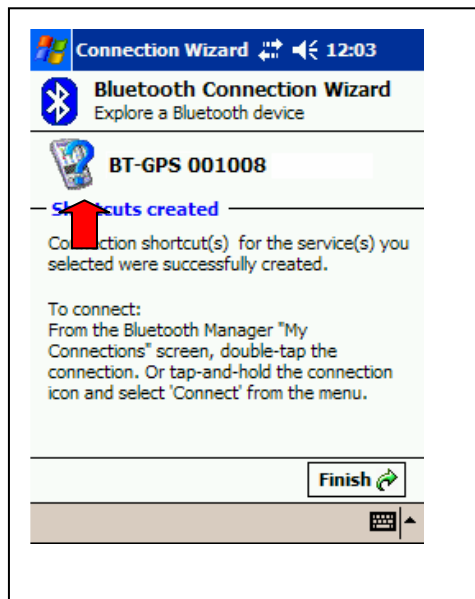
7. Click Explore a Bluetooth device to detect Bluetooth device
8. Click the Next button



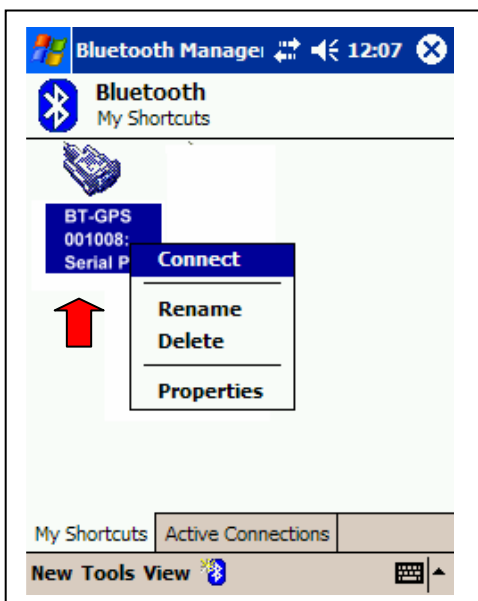
9. Once the PDA detect the Bluetooth GPS receiver. It will show this new device in the Wizard. Please select BT-GPS xxxxx



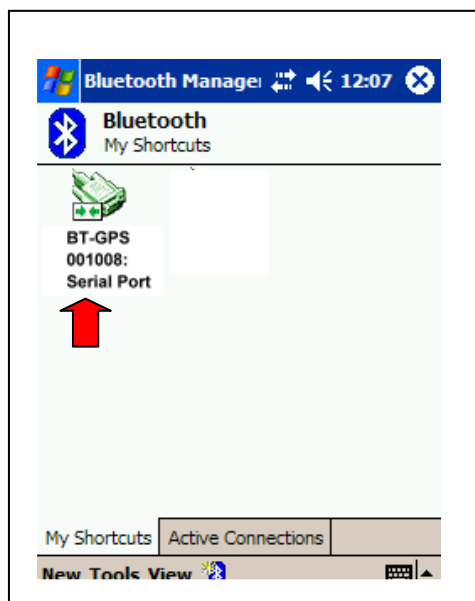
10. Select the Serial Port then click Next button.



11. Click the Finish button.



12. Press the BT-GPS:xxxx icon for 2 – 3 seconds, it will pop-up a menu
13. Select the Connect from the menu to build the connection



14. Once the connection is built, the BT-GPS:xxxx icon will become green color.

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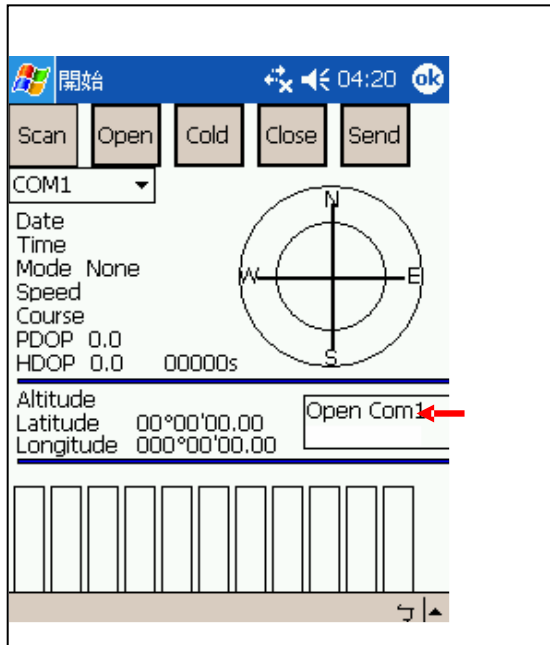
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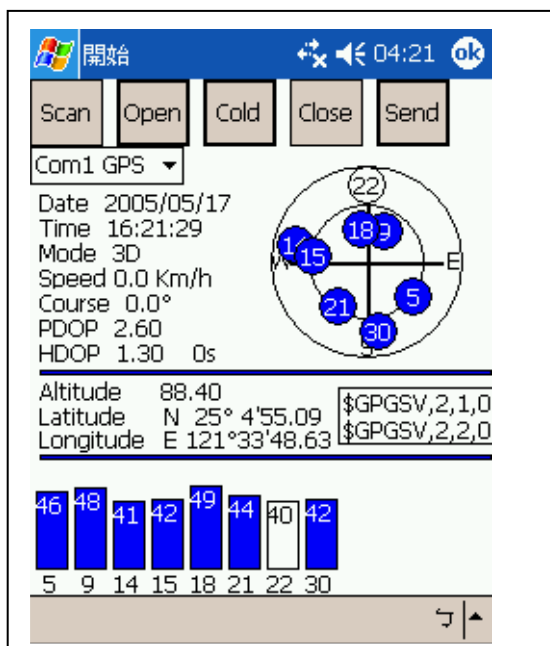
Technical Specification

7.4.2.2 Verify the connection:

Once you install the GPS View from the Installation CD, you can run the GPS View by click "GPS View" from the Program Files. After you run the GPS View, you will see a window below.



1. Scan: To detect GPS receiver connected COM port (You may select the COM port from the pull-down menu)
2. Once the COM port has Selected, press the Open button to open the COM port.
3. The NMEA will be rolling on the NMEA window.



4. Once the GPS receiver got the position fix, the Satellite Constellation map will display the position of Satellites. And the white C/N bar will become blue.

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7.4.2.3 Connect to Laptop with Bluetooth device:

1. Switch on the power of SJ-5286AIII
2. Please refer to the User Manual of Bluetooth device to enable it connects to the SJ-5286AIII
3. Some Bluetooth devices may need the Bluetooth password, the password is "0000"
4. Check the number of COM port used by Bluetooth (Example COM5)
5. Open the GPS software and configure the correct COM port and baud rate: 9600bps

7.4.3 Power Jack:

The power jack lets you connect either a DC car cigarette charger or AC power charger to recharge the internal Lithium-ion battery.

Please note that the adapter rating is 5V, 1.0A, positive pole center

7.4.4 GPS Reset Button:

Press this button for 3 seconds will force GPS receiver do the Cold Start.

7.4.5 Smart Power Saving Feature:

The GPS circuitry of SJ-5286AIII is turned off when the Bluetooth connection is lost. This intelligent power saving function could help SJ-5286AIII conserve battery power.

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