



**Bluetooth** GPS receiver  
with Digital Compass



**HI-406BT**

**User Manual**



**HI-406BT**

***Bluetooth GPS receiver with Digital Compass***



## Table of Contents

1.1 Overview .....	3
1.2 Main Features .....	5
2.1 Setting up: Bluetooth GPS receiver .....	6
2.2 Setting up: Digital Compass .....	12
3. Dimensions .....	14
4. Packaging	
4.1 Standard Packaging .....	15
4.2 Optional Packaging .....	17
5. System Specifications .....	20
6. Get Connected; Installation Guide	
6.1 Laptop PC Installations .....	23
6.2 PDA Installations .....	26

## 1.1 Overview

### Introduction

HI-406BT-C is a GPS (Global Positioning System) receiver in wireless **Bluetooth** interface with built-in active antenna and extra digital compass functions. With HI-406BT-C, your mobile devices, such as, Smartphone, PocketPC, laptopPC, tabletPC, etc. can receive GPS data wirelessly and perform the GPS applications, such as, car navigation, personal navigation, route planning, tracking, etc.

Equipped with the most powerful and ultra high sensitive SiRF StarIII chip set, HI-406BT-C can get the 3D fix in very short time and under poor reception environment, such as in the middle of the car, next to the tall building, in your backpack, or pocket.



## 1.2 Main Features:

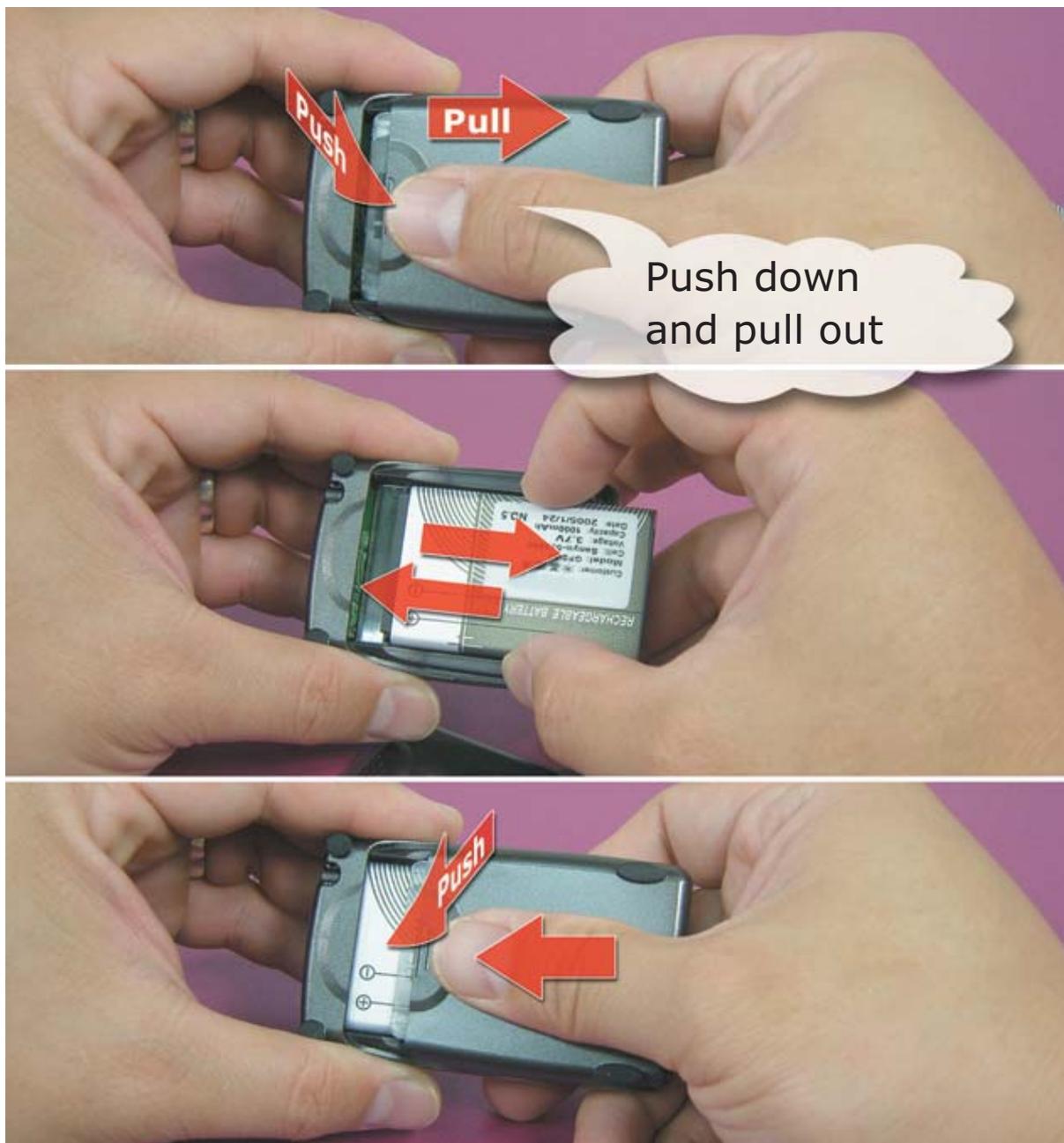
- 20 Channels "All- In-View" Tracking
- Position accuracy of 10 meters 2D RMS
- Cold/Warm/Hot Start Time: 42/38/1 Seconds (Signal Strength > 30 dB-HZ)
- Reacquisition Time: 0.1 seconds
- Support Standard NMEA -0183 at 38400 bps baud rate (Defined by customer 4800 up to 57600)
- Support Power Saving Mode
- Compatible with **Bluetooth** devices with Serial Port Profile (SPP)
- Build-in digital compass with 12 LED indications
- Superior Sensitivity for Urban Canyon and Foliage Environment
- Ultra small, sleek, and lightweight design easily fits in your hand
- Li-polymer battery lasts for more than 8 hours of use in connection



## 2.1 Setting up: *Bluetooth GPS receiver*

### STEP 1:

Open the battery cap and put the battery (406-BTT) into the battery compartment.

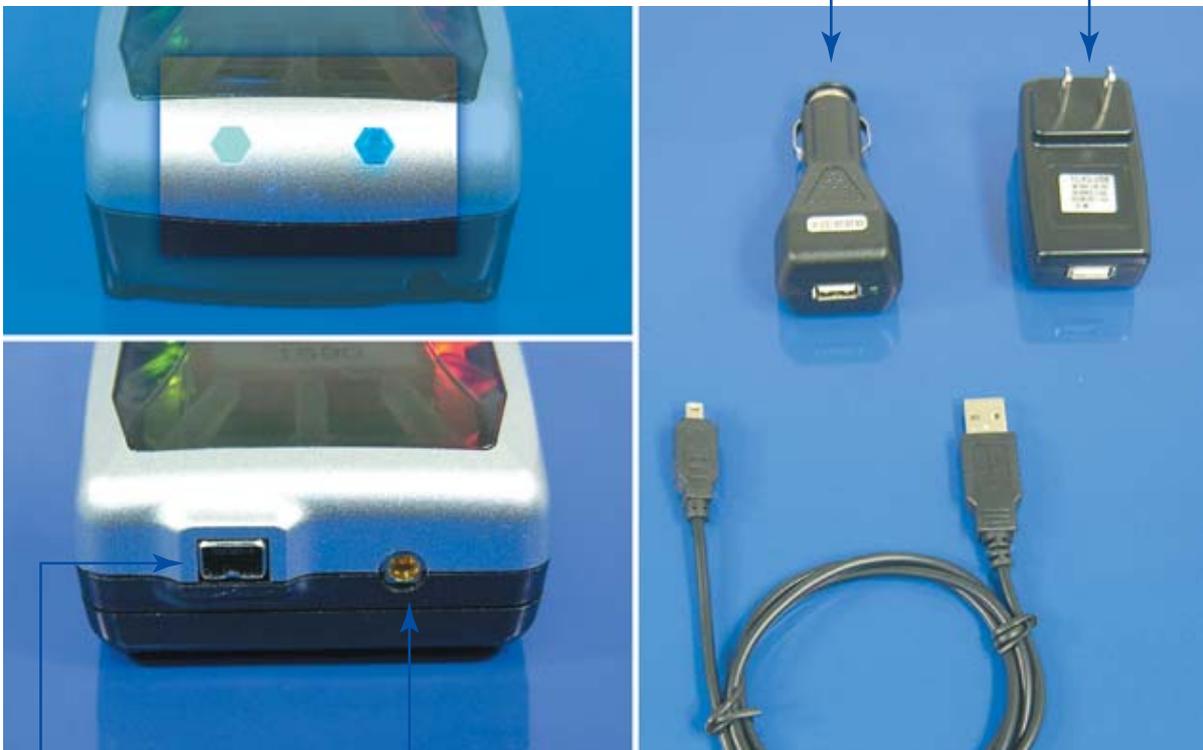


**STEP 2**

Connect the inclusive AC charger to home electronics outlet or connect the inclusive DC charger to the car cigarette lighter. As soon as they connected, the solid amber light on the right side in front of HI-406BT-C will turned on (stay on) meaning the battery charging.

DC charger to car cigarette lighter (DC 12V~24V)

AC charger to home electronic outlet



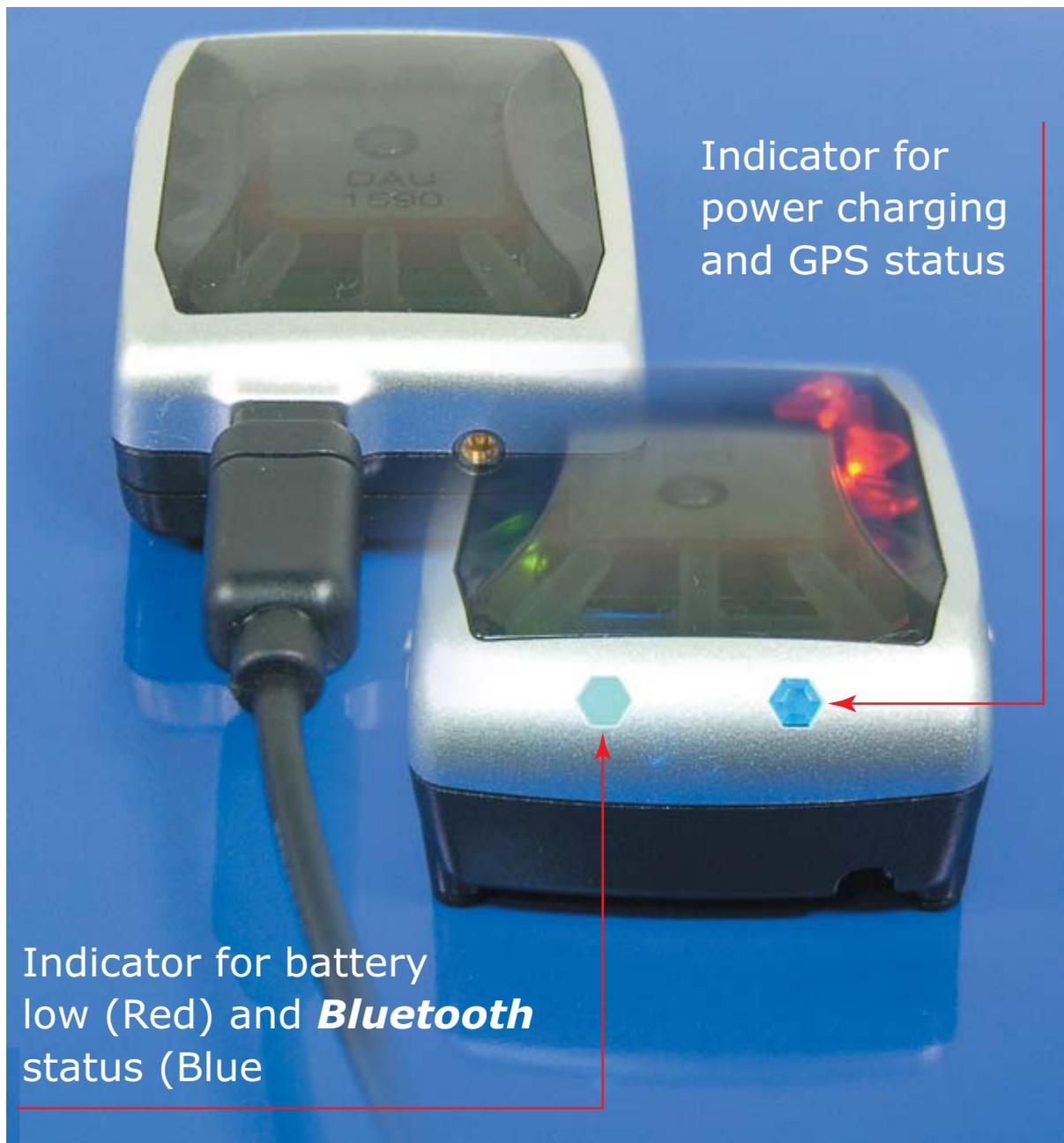
Mini-1394 female connector for power in and GPS signal out

MMCX external autenna plug



### STEP 3

As soon as the battery fully charged, the amber light will turned off, then, up-plug the charger.



#### STEP 4

There is one of each switch on both side of HI-406BT-C. The switch on the right side is for **Bluetooth** GPS receiver. The switch on the left side is for digital compass.

As soon as turn on the switch on the right side, the GPS receiver will start to function and search the satellites. Meanwhile, the LED indicator on the right side in front of HI-406BT-C will turned green (stay on - the GPS receiver not get 3D fixed yet) Please make sure place the HI-406BT-C outdoor open space so that it can get the proper satellite signal. After HI-405BT-C gets enough satellite data (lock more than 4 satellites), HI-406BT-C is in 3D fixed and the green light start blinking.





**Bluetooth** GPS Switch

LED indicator color	Status
<ul style="list-style-type: none"> <li>• Amber</li> <li>• LED off</li> <li>• Green (blinking)</li> <li>• Green (Stay on)</li> </ul>	HI-406BT-C battery charging HI-406BT-C battery fully charged GPS in 3D fixed GPS searching more satellite and not in 3D fixed yet
<ul style="list-style-type: none"> <li>• Blue (blinking)</li> <li>• Blue (stay on)</li> <li>• Red</li> </ul>	<b>Bluetooth</b> searching host device <b>Bluetooth</b> paired and connected HI-406BT-C battery low

### STEP 5:

As soon as turn on the switch on the right side, the **Bluetooth** will also start to function and searching. The blue light on the left side in front of HI-406BT-C will turned on (Blinking) meaning the **Bluetooth** is searching the host device and not get paired yet. Please consult the **Bluetooth** step by step connection guide from this manual on section . The pin code is " 0000 " when asked the pin code. After the **Bluetooth** paired and connected, the blue light will stay on.

### STEP 6:

Open the mapping software from your mobile device, select the corresponding COM port and start GPS.

### STEP 7:

Enjoy the state of the art wireless GPS navigation.



## 2.2 Setting up: Digital Compass

As soon as turn on the switch on the left side, the digital compass will start to function and indicating the north (LED on red) and the south (LED on green) based on the earth magnetic field. Since the HI-406BT-C equipped with 2-axiel digital compass chip, please make sure place the HI-406BT-C on horizontal surfaced and no grater than 30 degree angle.

The digital compass or the **Bluetooth** GPS receiver can work independently or work simultaneously. Even the **Bluetooth** GPS receiver switch turned off, the compass can work and the HI-406BT-C become a pure digital compass.

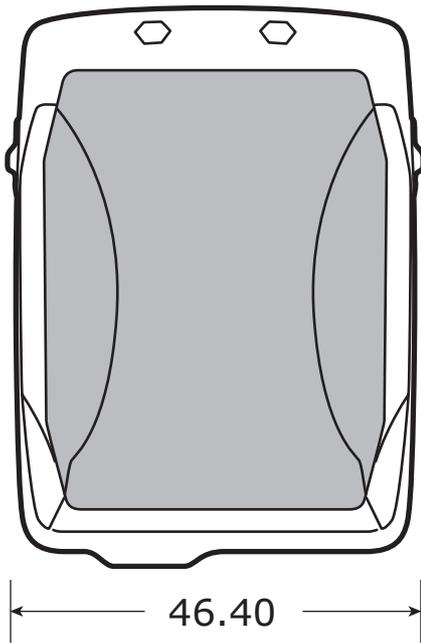




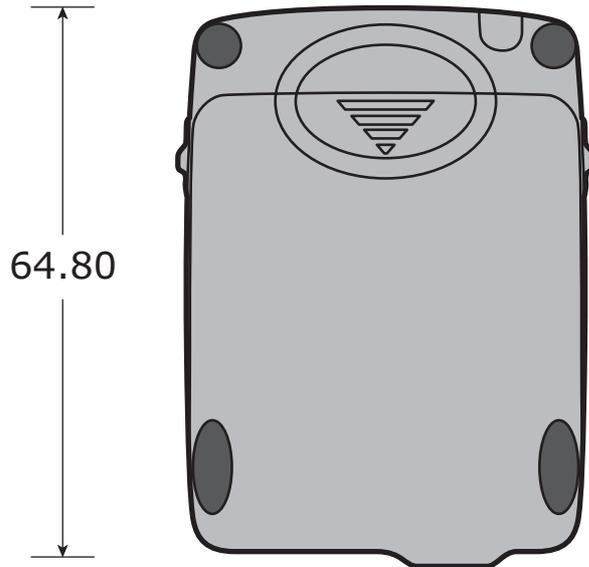
### 3. Dimensions

Unit: mm

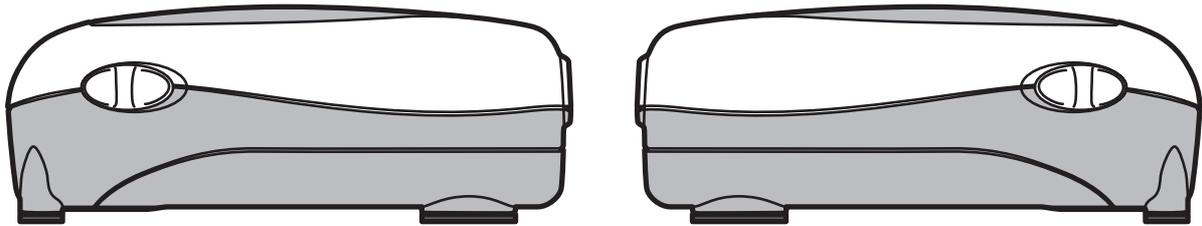
**Top View**



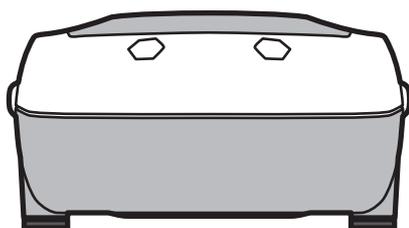
**Button View**



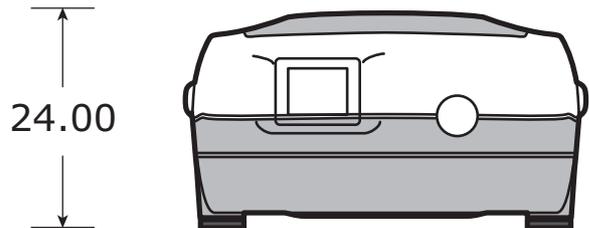
**Side View**



**Front View**



**Back View**



## 4. Packaging

### 4.1 Standard Packaging:

Model Name	model#
1. Bluetooth GPS receiver with digital compass	HI-406BT-C
2. Rechargeable Li-Polymer 3.7V 1100 mAh battery	406-BBT
3. Mini1394 to USB cable	401-USB
4. AC power adaptor with USB female plug	USB-ACC
5. Cigarette lighter adaptor with USB female plug	USB-DCC
6. Carrying pouch	BAG-002
7. HI-406BT-C user manual	MAU-406
8. Mini CD	CDR-01





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## 4.2 Optional Packaging:

### Model Name

### model#

- |  |          |
|--|----------|
| 1. MMCX external antenna               | ANT-MMC  |
| 2. mini-1394 to PS/II connecting cable | PS2-1394 |





Under blocking area, the external antenna can extend the signal reception from HI-406BT-C



By connecting to different optional connecting cables, HI-406BT-C can be a wired PS/II GPS receiver and used with all kinds of mobile devices.

## **HI-406BT-C as a GPS mouse**

By connecting different optional connecting cables, HI-406BT-C can be all kinds of wired GPS receiver solutions.





## 5. System Specifications

### Main Features

#### GPS

<b>General</b>	
Chipset	SiRF Star III
Channel	Supports 20-channel
Frequency	L1 (1575.42MHz), CA code
<b>TTFF (Open Sky)</b>	
Hot Start	8 sec.
Warm Start	38 sec.
Cold Start	42 sec.
<b>Acquisition Sensitivity</b>	
Hot	17dBHz
Warm	23dBHz
Cold	30dBHz
<b>Tracking Sensitivity</b>	-159dBm
<b>Position Accuracy</b>	10m, 2D RMS
<b>Dynamic Conditions</b>	
Altitude(Maximum)	18,000m (60,000ft)
Velocity(Maximum)	515m/sec(1,000knots)
Acceleration(Maximum)	<4g

## Bluetooth

General	
Frequency	2400MHz to 2483.5MHz
Modulation Method	GFSK, 1Mbps, 0.5BT Gaussian
Max. Data rate	Asynchronous: 723.2kbps/57.6kbps Synchronous: 433.9kbps/433.9kbps
Transmission Power (Maximum)	4dBm(Class 2)
Hopping	1600hops/sec,1MHz channel space
Receiving Signal Range	-84 to -15dBm
Receiver IF Frequency	1.5MHZ center frequency
Baseband Crystal OSC	16MHz
Compliant	Bluetooth Specification v1.1

## Electrical

Main power input	5±5%VDC
Power consumption	0.4W @ 3.3VDC (Full Power)
Backup Power	1.5±10%VDC input
Operation time	9 hours (1000mAh Li-Ion battery)



## GPS Firmware

Protocol	NMEA/SiRF Binary
Baud Rate	19200 bps
Update Rate	1Hz
Datum	WGS84

## Environmental

<b>Temperature</b>	
Operating Temperature	10°C to +55°C
Storage Temperature	20°C to +65°C
Relative Humidity	5% to 95%, non-condensing

## LED Indicator

### LED 1

Color	BT Active	Low Power
Blue	Yes	-
Flashing Blue	No	-
Red	-	Yes

### LED 2

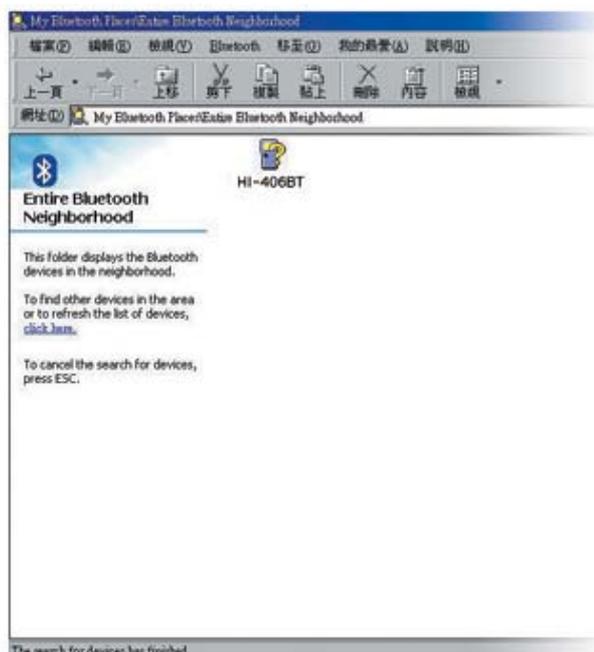
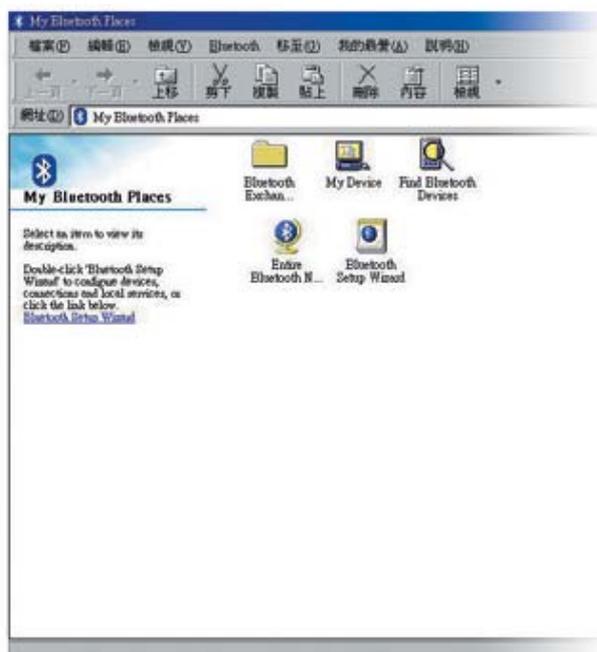
Color	GPS Fix Status	Battery Charging
Green	No	-
Flashing Green	Yes	-
Orange	-	Yes

# 6. Get Connected; Installation Guide

## 6.1 Laptop PC Installations

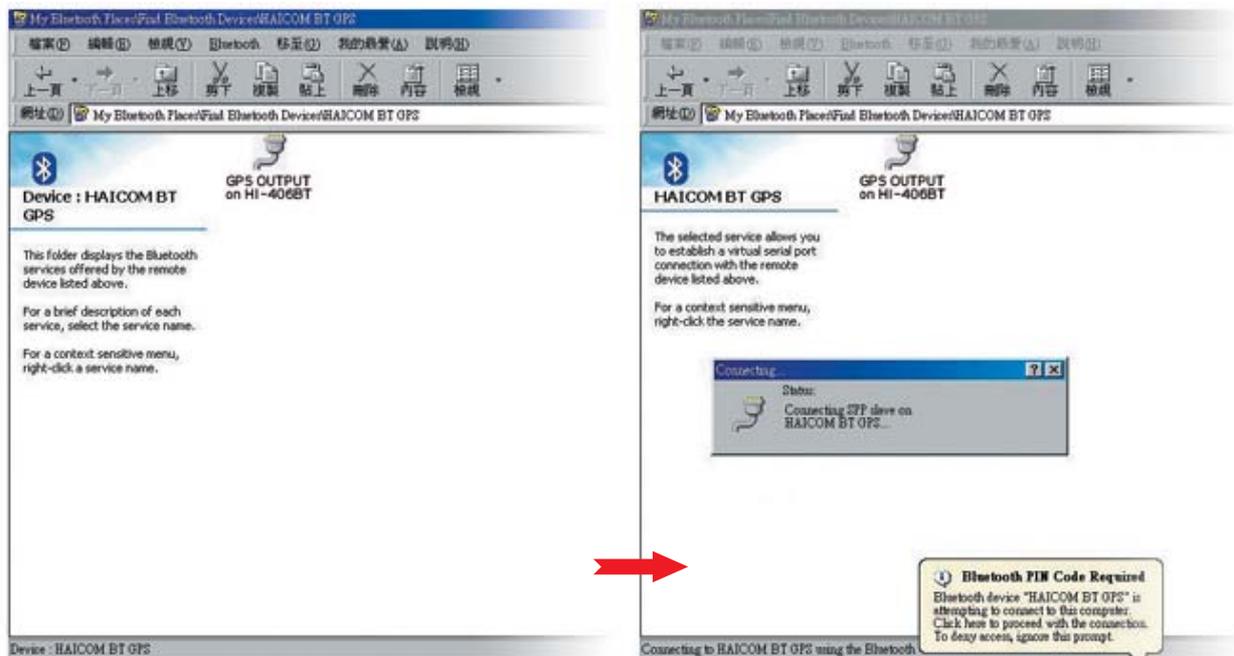
Run "My Bluetooth Places" and Double Click the "Find Bluetooth Devices " icon

Double Click "HI-406BT"

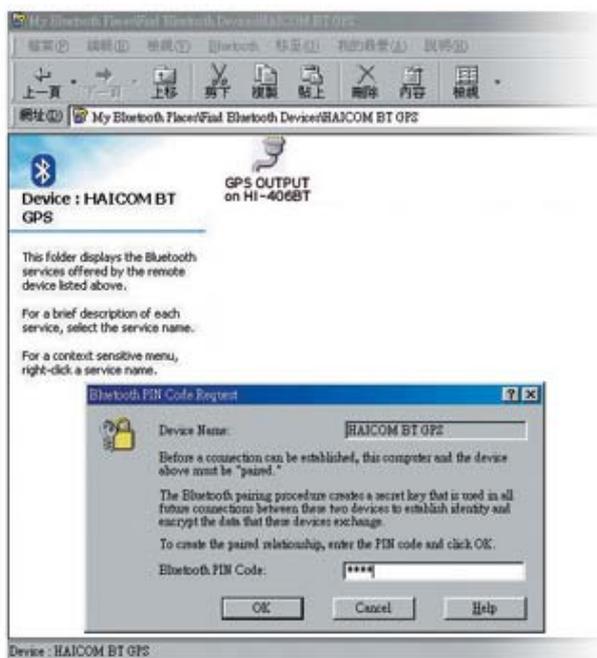




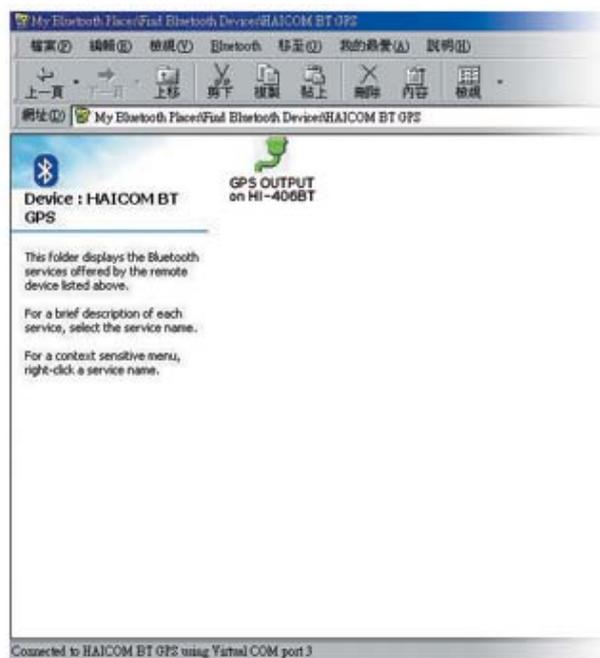
Double Click "GPS OUTPUT on HI-406BT"



Key in pin code: "0000"



Connected



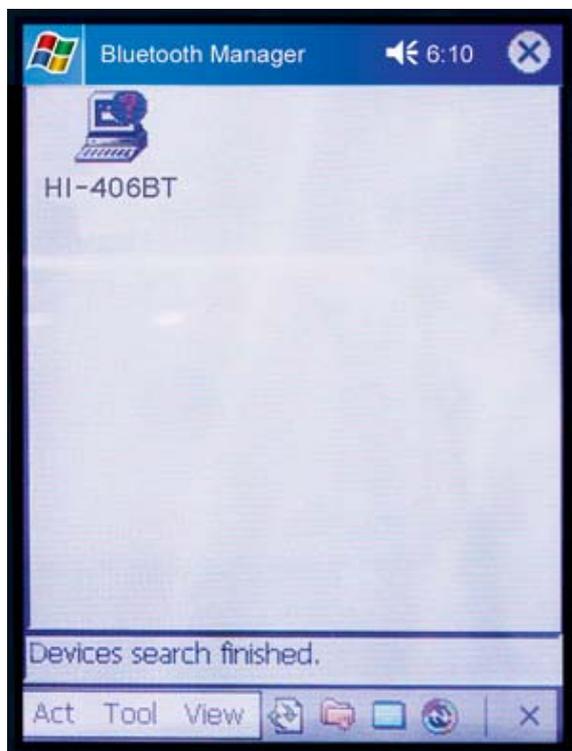


## 6.2 PDA Installations

Double Click the Bluetooth icon



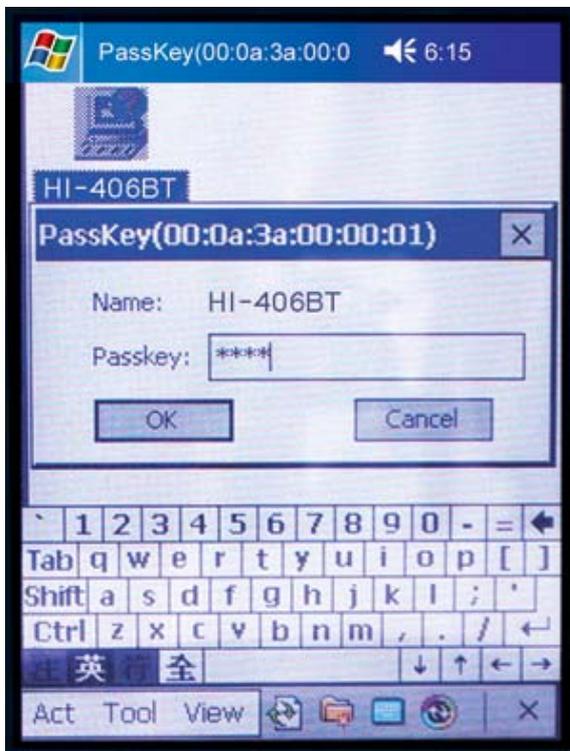
Double click "HI-406BT"





Key in pin code: "0000"

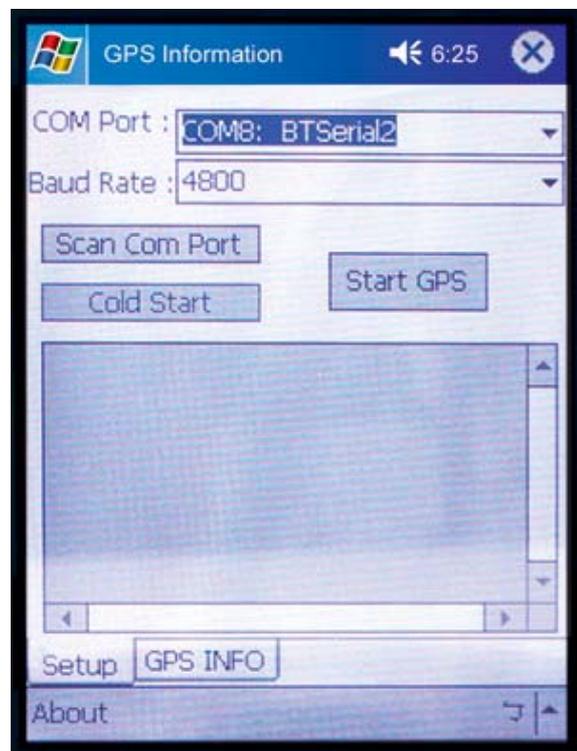
Found the host device



For Connected with device



Select the correct com port





Start GPS, NMEA message inflow

More satellites info

