SiRF

WAAS
EGNOS
enabled

HI-406BT

User Manual

HI-406BT

Bluetooth GPS receiver

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1.1 Overview

Introduction

HI-406BT is a GPS (Global Positioning System) receiver in wireless ***Bluetooth*** interface with build-in active antenna and extra digital compass functions. With HI-406BT, 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.

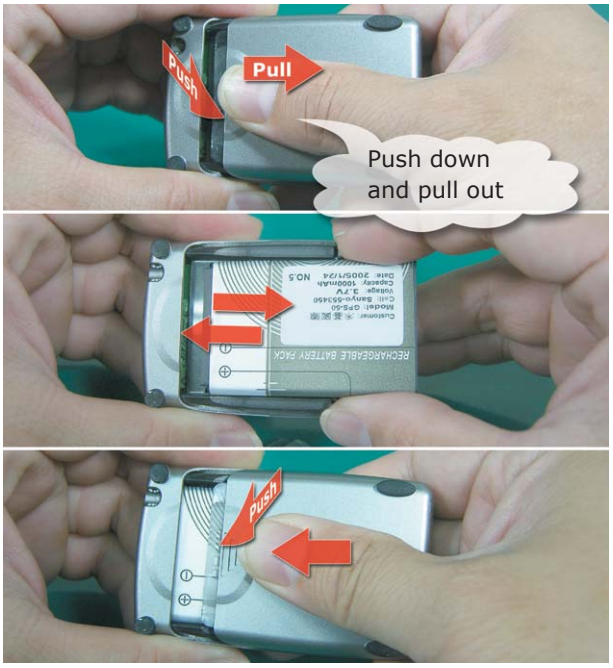
Equipped with the most powerful and ultra high sensitive SiRF StarIII chip set, HI-406BT can get the 3D fix in very short time and under poor reception environment, such as in the middle of the car, next to the tall building, in your backpack, or pocket.

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 19200 bps baud rate (Defined by customer 4800 up to 57600)
- Support Power Saving Mode
- Compatible with ***Bluetooth*** devices with Serial Port Profile (SPP)
- 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.

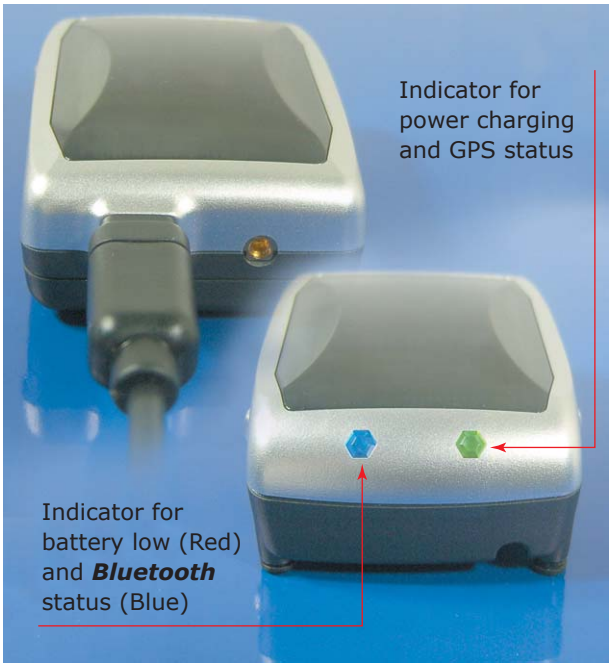


STEP 2

Connect the 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 will turned on (stay on) meaning the battery charging.

STEP 3

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



STEP 4

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

LED indicator color	Status
Amber	HI-406BT battery charging
LED off	HI-406BT battery fully charged
Green (blinking)	GPS in 3D fixed
Green (Stay on)	GPS searching more satellite and not in 3D fixed yet
Blue (blinking)	***Bluetooth*** searching host device
Blue (stay on)	***Bluetooth*** paired and connected
Red	HI-406BT 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 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.

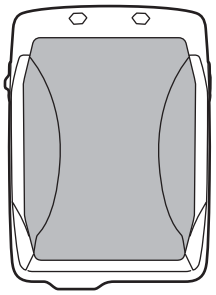
STEP 7:

Enjoy the state of the art wireless GPS navigation.

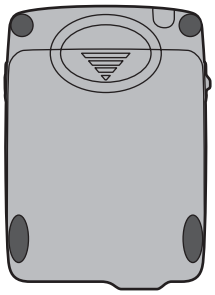
3. Dimensions

Unit: mm

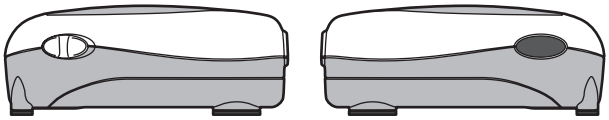
Top View



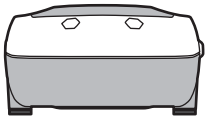
Button View



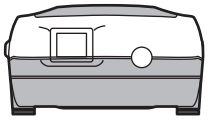
Side View



Front View



Back View



4. Packaging

4.1 Standard Packaging:

Model Name	model#
❶ Bluetooth GPS receiver	HI-406BT
❷ Rechargeable Li-Polymer 3.7V 1000 mAh battery	406-BBT
❸ Mini1394 to USB cable	401-USB
❹ Cigarette lighter adaptor with USB female plug	USB-DCC
❺ Carrying pouch	BAG-002
❻ HI-406BT user manual	MAU-406
❼ 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
3. AC power adaptor with USB female plug	USB-ACC

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

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

HI-406BT as a GPS mouse

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

5. System Specifications

Main Features

GPS

General	
Chipset	SiRF Star III
Channel	Supports 20-channel
Frequency	L1 (1575.42MHz), CA code
TTFF (Open Sky)	
Hot Start	8 sec.
Warm Start	38 sec.
Cold Start	42 sec.
Acquisition Sensitivity	
Hot	17dBHz
Warm	23dBHz
Cold	30dBHz
Tracking Sensitivity	-159dBm
Position Accuracy	10m, 2D RMS
Dynamic Conditions	
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)
Hoping	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	8 hours (1000mAh Li-Ion battery)

GPS Firmware

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

Environmental

Temperature	
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

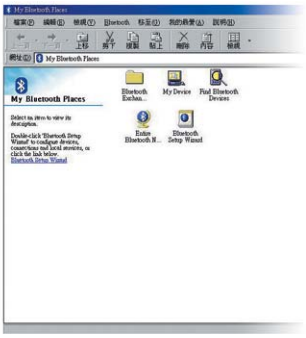
LED 2

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

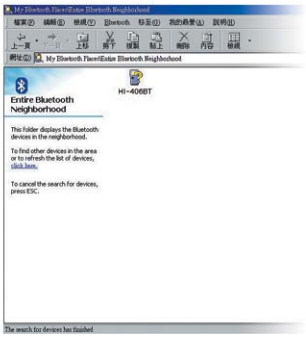
6. Get Connected; Installation Guide

6.1 Laptop PC Installations

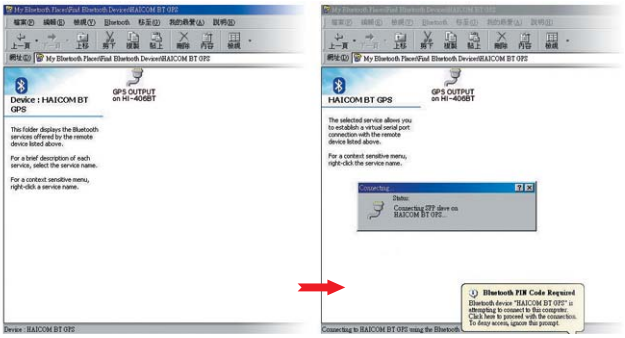
Run "My Bluetooth Places" and Double Click the "Find Bluetooth Devices " icon



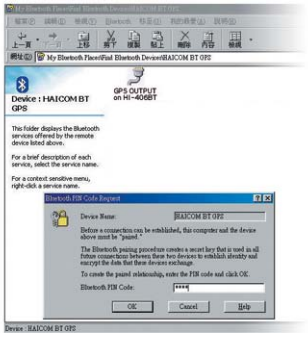
Double Click "HI-406BT"



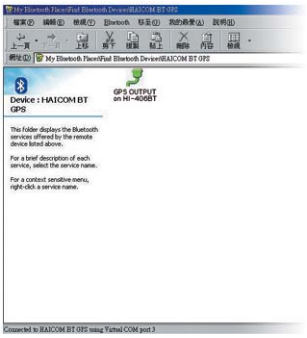
Double Click "GPS OUTPUT on HI-406BT"



Key in pin code: “0000”



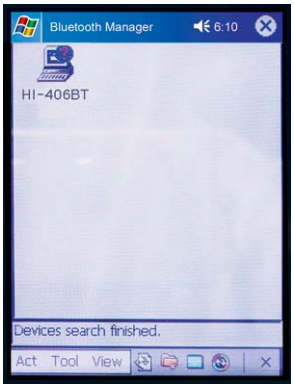
Connected



6.2 PDA Installations

Double Click the Bluetooth icon

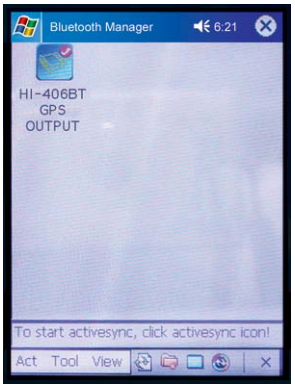
Double click "HI-406BT"



Key in pin code: “0000”

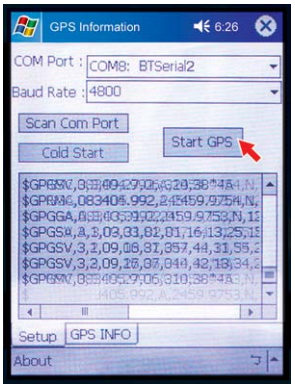
Found the host device

For Connected with device



Select the correct com port

Start GPS, NMEA message inflow



More satellites info

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.

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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 dose 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 form HAICOM ELECTRONICS CORP. Modification could void authority to use this equipment.