Bluetooth GPS User Manual

GPS GBT710

Version 1.0 . 1 2 0 0 6 / 8 / 1

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1. OVERVIEW

Altina **GBT710** Bluetooth wireless GPS Receiver is a total solution GPS receiver with Bluetooth, UART interface and built-in rechargeable battery for high sensitivity to tracking signal. **GBT710** is a transmit satellite information through the PDA or Notebook with Bluetooth interfaces.

GBT710 provide you various applications such as car navigation, mapping, surveying, security, agriculture and so on. **GBT710** communicates with other device through Bluetooth wireless function, built-in rechargeable Lithium-ion battery offer you a convenient use in drive.

With low power consumption, the **GBT710** can track up to 20 satellites at a time, and updates position data every second. Trickle-Power allows the unit operates a fraction of the time and Push-to-Fix permits user to have a quick position fix even though the receiver usually stays off.

2. PRODUCT FEATURE

- Built in SiRF Star Ⅲ Low power consumption chipset
- 20 parallel satellite-tracking channels for fast acquisition and reacquisition
- High speed signal acquisition using 2000,000 time/frequency search channels
- Built-in WAAS/EGNOS Demodulator without any additional hardware
- Compatible with Bluetooth Serial Port Profile (SPP) completely
- Built-in rechargeable Lithium-ion battery without external power supply
- Provide Continued mode and Power Saving mode for user's requirement
- Provide expand terminal contact to other system without Bluetooth device
- Built-in rechargeable battery for memory and RTC backup and for fast Time To First Fix (TTFF)
- Support NMEA0183 v2.2 data protocol and SiRF binary code
- 4 colors LED to indicate the status of device
- Extra active antenna connecting port for getting better satellites signal
- FLASH based program memory. New software revisions upgradeable through serial interface。
- Small, sleek, and lightweight design easily fits on your hand
- Enhanced algorithms -SnapLock and SnapStart provide superior navigation, performance in urban, canyon and foliage environments。
- For Car navigation, Marine navigation, Fleet management, AVL, Personal

navigation, Tracking System, and Mapping device application。

3. SPECIFICATION

3.1. Basic Specification

- Chipset：SiRF Star Ⅲ chipset.
- Channels：20 parallel satellite-tracking channels.
- Frequency：1575.42 MHZ.
- Receiver：L1, C/A code.

3.2. Acquisition Time (averaged)

- Cold start：< 50 seconds.
- Warm start：< 40 seconds .
- Hot start：< 1.5 seconds
- Update rate：1 second continuously

3.3. Receiver Accuracy

- Normal：5-25 meters CEP without SA
- Enable EGNOS or WAAS：
  - Position < 2.2 meters, horizontal 95% of time
  - Position < 5 meters, Vertical 95% of time
- Velocity：within 0.1 meters / second
- Time：1 microsecond synchronized GPS time

3.4. Use Limitation

- Altitude：< 18,000 meters (60,000 feet)
- Velocity：< 736 meters / second (1000Knots)
- Acceleration：4G
- Jerk：20 meters / second, max

3.5. Power Supply

- External Voltage：5VDC +/- 10%
  Batteries：Built-in rechargeable Lithium-ion battery for system power and RTC backup also
- Power consumption
  - Normal Mode：75 -100mA

- Power Saving Mode：30mA

➢ Working period (In Battery full power status):

- Continued Mode：10 hours
- Power Saving Mode：16 hours

【NOTE 1】**GBT710** has built Li-battery inside, please avoid closing high temperature environment or sun shine directly for a long time.

3.6. Output and Interface

➢ **Output**

I. Output protocol

- Baud Rate：4800/38400 bps Factory default 4800
- Data bit：8
- Parity：No
- Stop bit：1

II. Format -NMEA0183 V2.2：
GPGGA (1time/1 sec), GPGSA (1 time/5 sec.), GPGSV (1time /5 sec.), GPRMC (1time /1 sec.), GPVTG(1 time/l sec), (GLL, or SiRF binary format for optional).

III. Datum：WGS84

➢ **Input/ Output Interface**

I. Compatible Bluetooth Serial Port Profile (SPP), Version1.2 and class 2(up to 10 meter range).

II. In/Out Port. GPS signal (Out)/Command(In) with CMOS/TTL Level。

- Mini USB Type B Connector and Cable option：
  - GAC60R2 (RS232 data cable)
  - GAC60U2 (USB data cable)
  - GAC60UP2 (Mini USB port to PS2 port).

➢ **External Antenna interface**

3.0V input MMCX type active antenna connector

3.7. Physical

➢ Size： 69 ×50 ×19 mm。

➢ Weight： 70 g 。

➢ Operating Temperature : -10 ℃ to + 60 ℃

➢ Storage Temperature : -20 ℃ to + 85 ℃

- Operating humidity：5% to 95% No condensing。

3.8. Other Functions

- Bluetooth frequency: 2.4 ~2.48GHZ
- Bluetooth Input Sensitivity: -80dbm
- Low sensitivity of receiving satellite signal： -150dBm
- LED Functions：
  - Bluetoothh status
  - GPS status
  - Battery Status
  - Battery charging status

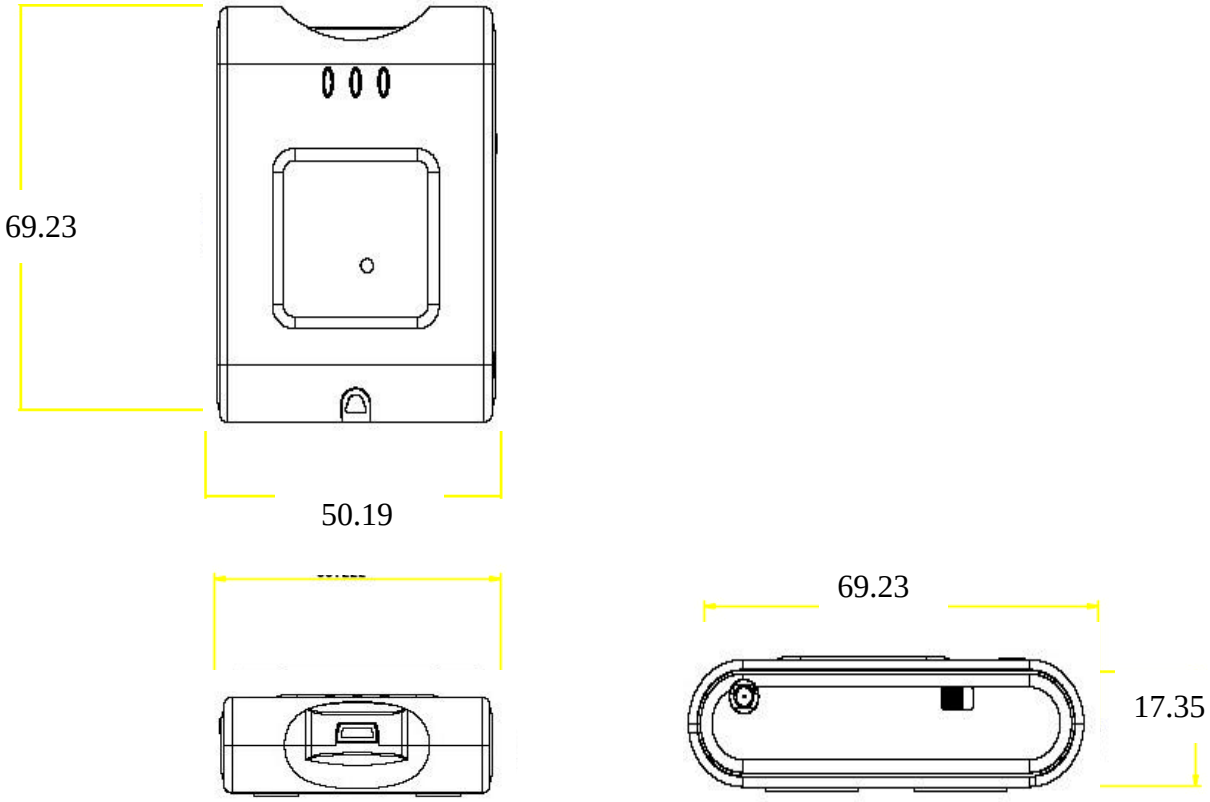
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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

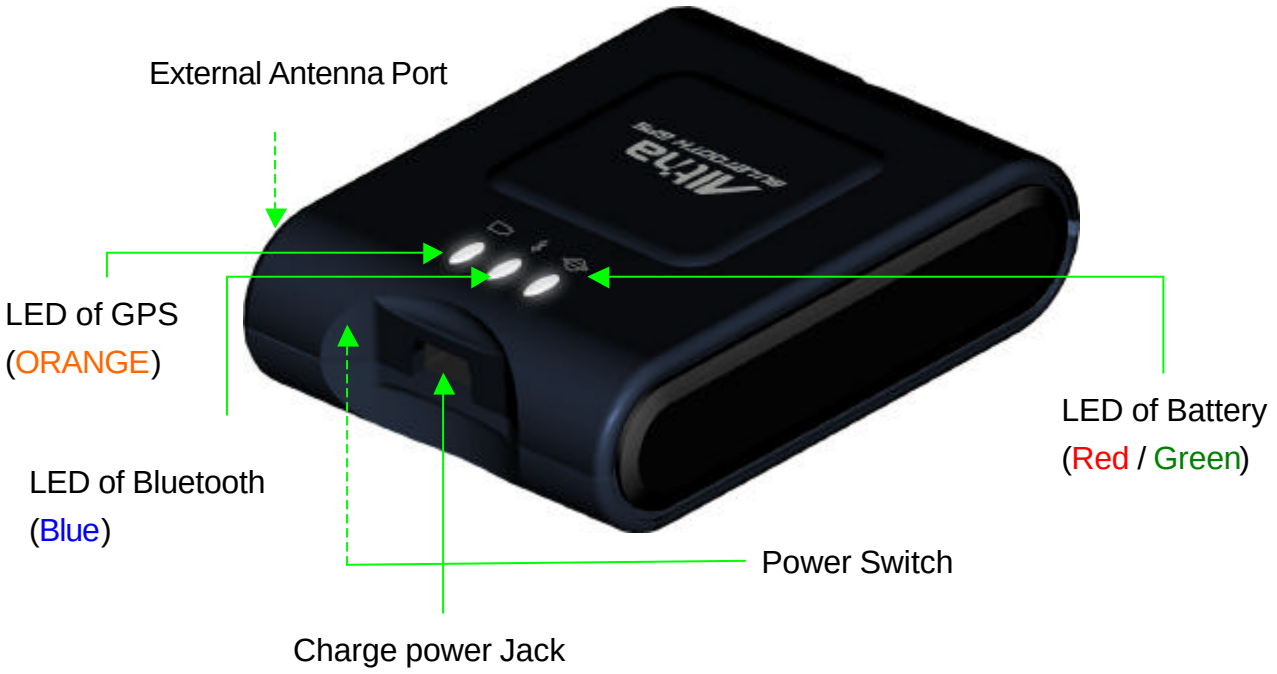
IMPORTANT NOTE: To comply with the FCC RF exposure compliance requirements, no change to the antenna or the device is permitted. Any change to the antenna or the device could result in the device exceeding the RF exposure requirements and void user' s authority to operate the device.

4. HARDWARE

4.1. Dimension



4.2. Hardware Description



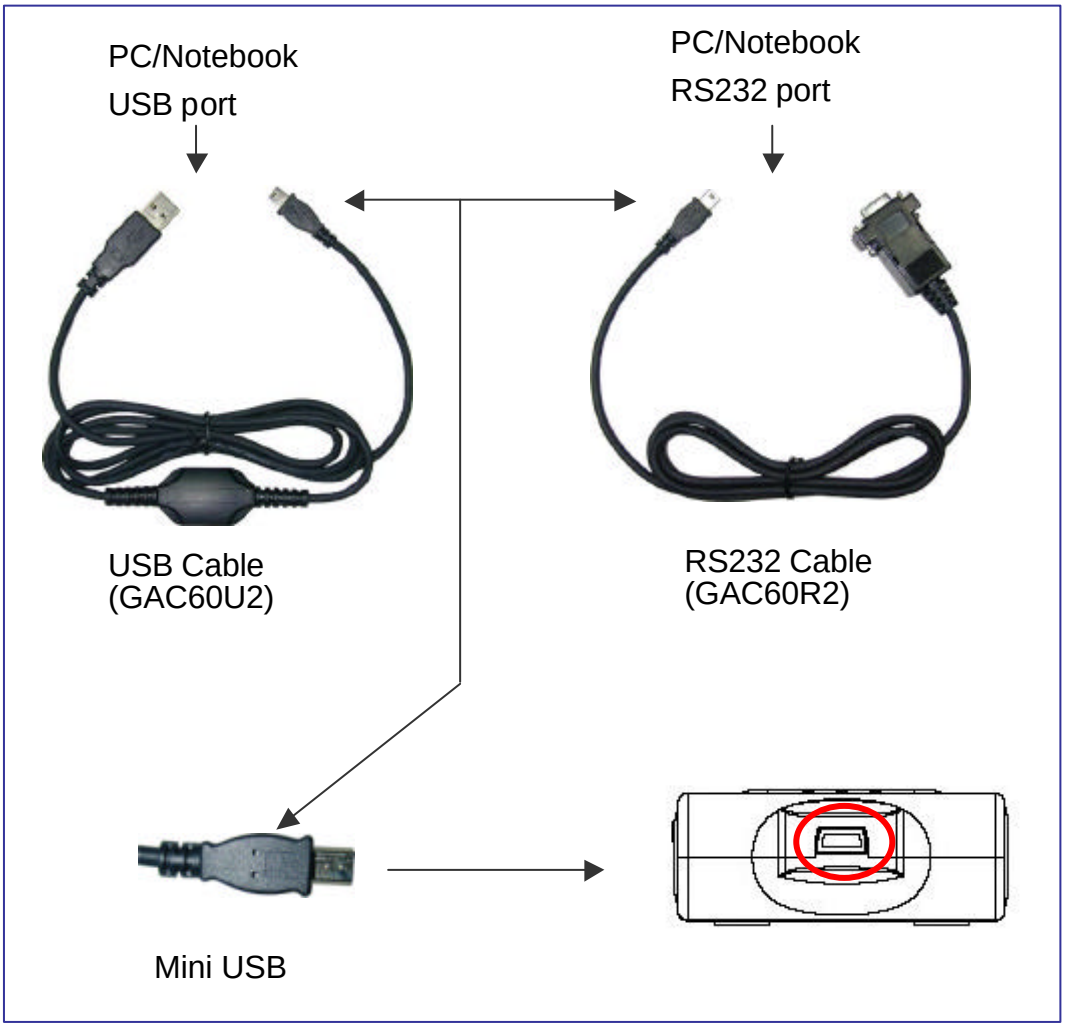
4.3. LED status

SYMBOL	COLOR	STATUS	DESCRIPTION
Bluetooth	Blue	Blinking	Search Bluetooth Device
		Light on	Transferring Data
Battery	Red	Light on	Battery low
	Green	Light on	In charging
GPS	ORANGE	Blinking	Acquiring Satellites
		Light on	Position Fixed

4.4. Power Switch

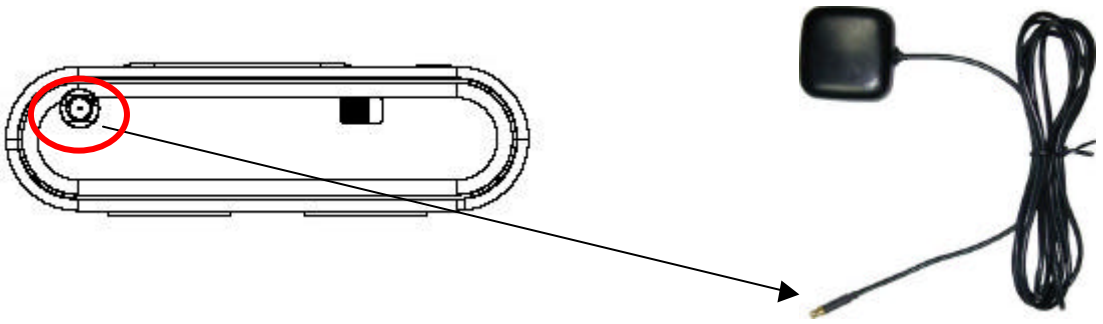
- Soft touch button : Continue pressing 3 sec to turn or turn off system power

4.5. Optional accessories, and connector description



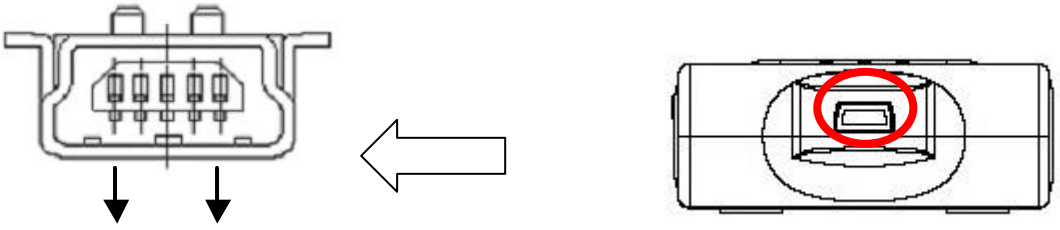
4.6. External Active Antenna connector

- Connector type: MMCX, 180?
- Active power voltage: 3.0V
- Length: 5 meter



4.7. Power Jack & Data Port

- Jack type: Mating face of 5 pin Mini USB Type B female
- Pin definition please see 【Table 1】



【Table 1】: Pin Definition

Pin	Pin Name	Signal and description
1	VDC	Positive terminal of DC adaptor that powers the internal charging circuit of Li-Ion battery. The approved power supply is 5.0V +/- 5%@1A.
2	--	
3	--	
4	--	
5	GND	Battery charging ground

SOFTWARE

4.8. Software Installation

Following steps is software installation to setup on you PDA. For some other PDA, steps may be a little different. (Bluetooth Manger is one of popular program used for Bluetooth device)

1. Click “Bluetooth Manager” on pocket pc.

New

↓

Connect

2. Search Bluetooth device “Altina GBT710”

Select Explore a Bluetooth device

↓

Next

3. Find Altina Bluetooth device and enter passkey

Next

↓

Tap Altina GBT-710

↓

Passkey 0000(If needed)

4. Connect to SPP Slave

Select SPP slave

↓

Next

↓

Finish

5. Connect to SPP Slave

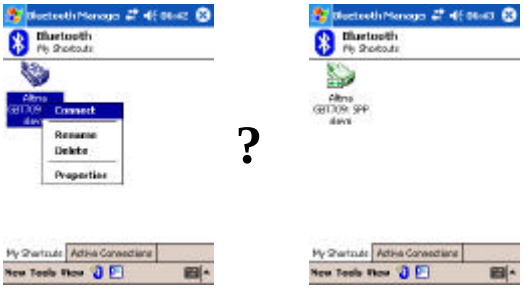
Tap and Hold Altina GBT710: SPP slave

↓

Connect

↓

Finish Bluetooth setup (opposite arrow is displayed)



5. WARRANTY

A) Device: Altina warrants to the original end user ("Customer") that new Altina branded products will be free from defects in workmanship and materials, under normal use, for one year from the original purchase date. At the time of service, the owner will need to be able to provide evidence of date and place of purchase and serial number.

B) Exclusions: This warranty excludes (1) physical damage to the surface of the product; (2) damage caused by misuse, neglect, improper installation or testing, unauthorized attempts to open, repair, or modify the product, or any other cause beyond the range of the intended use; (3) damage caused by accident, fire, power changes, other hazards, or acts of God; or (4) use of the product with any non-Altina device or service if such device or service caused the problem.

Any third party products, including software, included with Altina products are not covered by this Altina warranty and Altina makes no representations or warranties on behalf of such third parties. Any warranty on such products is from the supplier or licensor of the product.

C) Exclusive remedies: Should a covered defect occur during the warranty period and you notify Altina, your sole and exclusive remedy shall be, at Altina' s sole option and expense, to repair or replace the product. If Altina cannot reasonably repair nor replace then Altina may, in its sole discretion, refund the purchase price paid for the product. Replacement products or parts may be new or reconditioned or comparable versions of the defective item.

D) Obtaining warranty service: Dated proof of original purchase will be required. Products or parts shipped by Customer to Altina must be sent postage-paid and packaged appropriately for safe shipment. Altina is not responsible for Customer products received without a warranty service authorization and may be rejected. Repaired or replacement products become the property of Altina.

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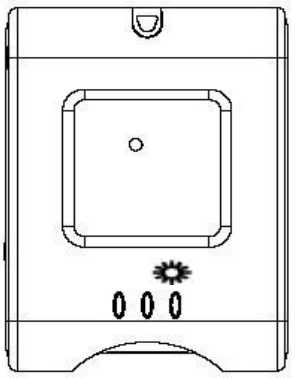
6. HOW TO USE

6.1. Charge Battery

Mini USB power socket



Please charge battery till LED off for the first time.

Power cable plug in Power cable connect to power socket

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Charge Battery

Battery indicator:

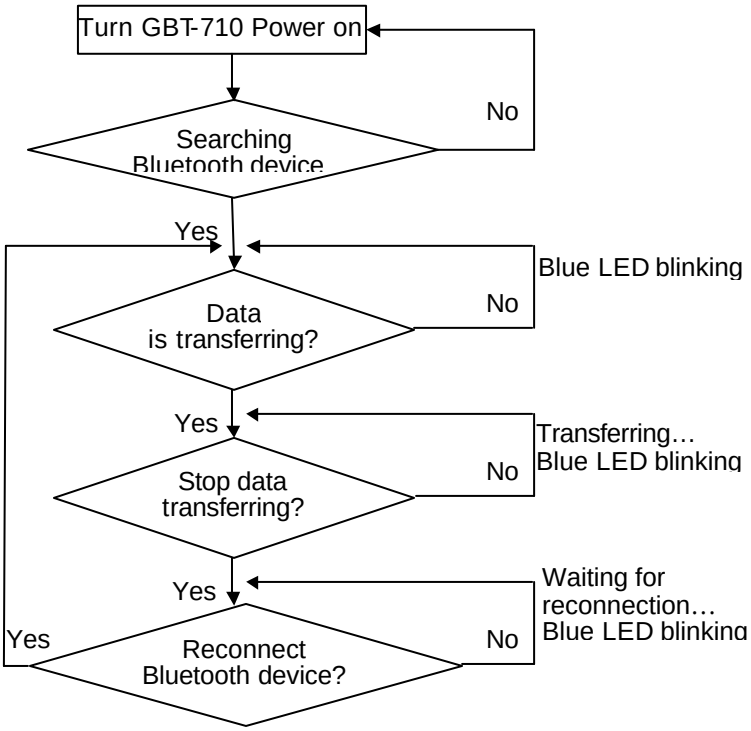
Battery low -------- Red LED on

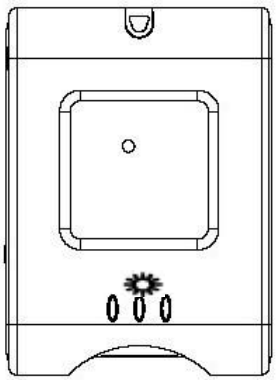
Charging ---------- Green LED on

Full or Not in charging -- LED off

6.2. Turn on Power

Bluetooth Status –





Note:
Some PDAs have to re-open Bluetooth manager for Bluetooth device re-connection.

GPS Status ---

Put GBT-710 in clear view of the sky without any obstruction for better satellite acquiring.

Turn on Power of GBT-710

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Search GPS -------- steady orange LED blinking

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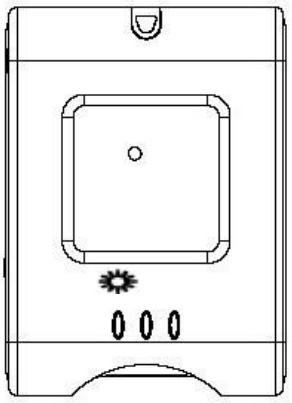
Position Fixed ------ orange LED on



7. TROUBLE SHOOTING

Problems	Reasons	Methods
No position output but timer is counting	Weak or no GPS signal can be received at the place of GBT-710	Connect an external antenna, which locate as a open space to your GBT710 and then run GPSViewer Cold start function.
	At outdoor space but GPS signal is blocked by building or car roof.	Go outdoor and run GPSViewer Cold start function to try again, or connect an external antenna to improve the poor GPS signal.
Execute fail	Bluetooth function unstable	Power On/Off GBT-710. Re-Start PDA or PC and reference sec 5.2 re-install software
Can not turn on the COM port	Install GBT-710 incompletely or operate the device is being used with same COM port	Install GBT-710 completely or stop other device that is being used.
Can not find out GBT-709	Poor connection	Re-Start PDA or PC and reference sec. 5.2 re-install software.
No Signal	No action for few minutes may cause Pocket PC entry power save mode. It will close the COM port at the same time.	Close the application and execute it again to reopen the COM port.
	Weak or no GPS signal when using GBT-710 indoor	Connect an external antenna to your GBT710.