

GPS Personal Tracker

User Manual

V1.0

GT601

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1.Product Overview

The GT601 is a GPS/GPRS based personal tracking device, which is compact and easy to use.

GT601B has inbuilt GPS module to obtain accurate position data and utilizes its GSM capability to send the position data to a specified mobile phone or server base to allow users to monitor people or pets using the tracker.

GT601 has the following functions and features:

- SMS and GPRS TCP/UDP Communication
- AGPS (with GSM Base Station ID)
- Track on demand
- Show location directly on mobile phone
- Track by time interval
- Track by Distance
- Listen-in (voice monitoring)
- Inbuilt motion sensor for power saving
- SOS panic button
- Movement alarm
- Geo-fencing control
- Low battery alarm
- Speeding alarm
- GPS blind area alarm
- ARM processor supports one second a separate fast-track real-time monitoring data
-

2.For Your Safety

Read these simple guidelines. Not following them may be dangerous or illegal.

Switch on safely	Do not switch on GT601B when wireless phone use is prohibited or when it may cause interference or danger.
Switch off in hospitals	Follow any restrictions. Switch GT601B off near medical equipment.
Switch off in aircraft	Follow any restrictions. Wireless devices can cause interference in aircraft.
Switch off when refueling	Do not use GT601B when at a refueling point. Do not use near fuels or chemicals.
Switch off near blasting	Follow any restrictions. Do not use GT601B when blasting is in progress.
Qualified service	Only qualified personnel can repair GT601B.
Water resistance	GT601B is not fully water resistant. Keep it dry. Use waterproof bag if

necessary.

3.GT601 Characteristics

Items	Specification
Charging Voltage	DC 4.2-5V/500-1000mA (Mini USB port)
Internal Battery	Non removable polymer battery is 2800 Mah (3.7V)
Dimension	67 mm × 53 mm × 22 mm
Weight	70g (with battery)
Operating temperature	-20°to 55°C
Humidity	5% to 95% Non-condensing
GSM module	Quad Band GSM 850/900/1800/1900Mhz
GPS Chipset	latest GPS SIRF-Star III chipset
GPS Sensitivity	-158Db
GPS Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	20 channel all-in-view tracking
Position Accuracy	10 meters, 2D RMS
Velocity Accuracy	0.1 m/s
Time Accuracy	1 us synchronized to GPS time
Default datum	WGS-84
Reacquisition	0.1 sec., average
Hot start	1 sec., average
Warm start	38 sec., average
Cold start	42 sec., average
Altitude Limit	18,000 meters (60,000 feet) max.
Velocity Limit	515 meters/second (1000 knots) max.
Acceleration Limit	Less than 4g
Jerk Limit	20 m/sec
Work time	100 hours in power-saving mode and 50 hours in normal working mode
LED	3 LEDs to show power, GPS, GSM and other status.
Button	2 keys (S / B) is used to open and close the alarm LED and send location information

4.Getting Started

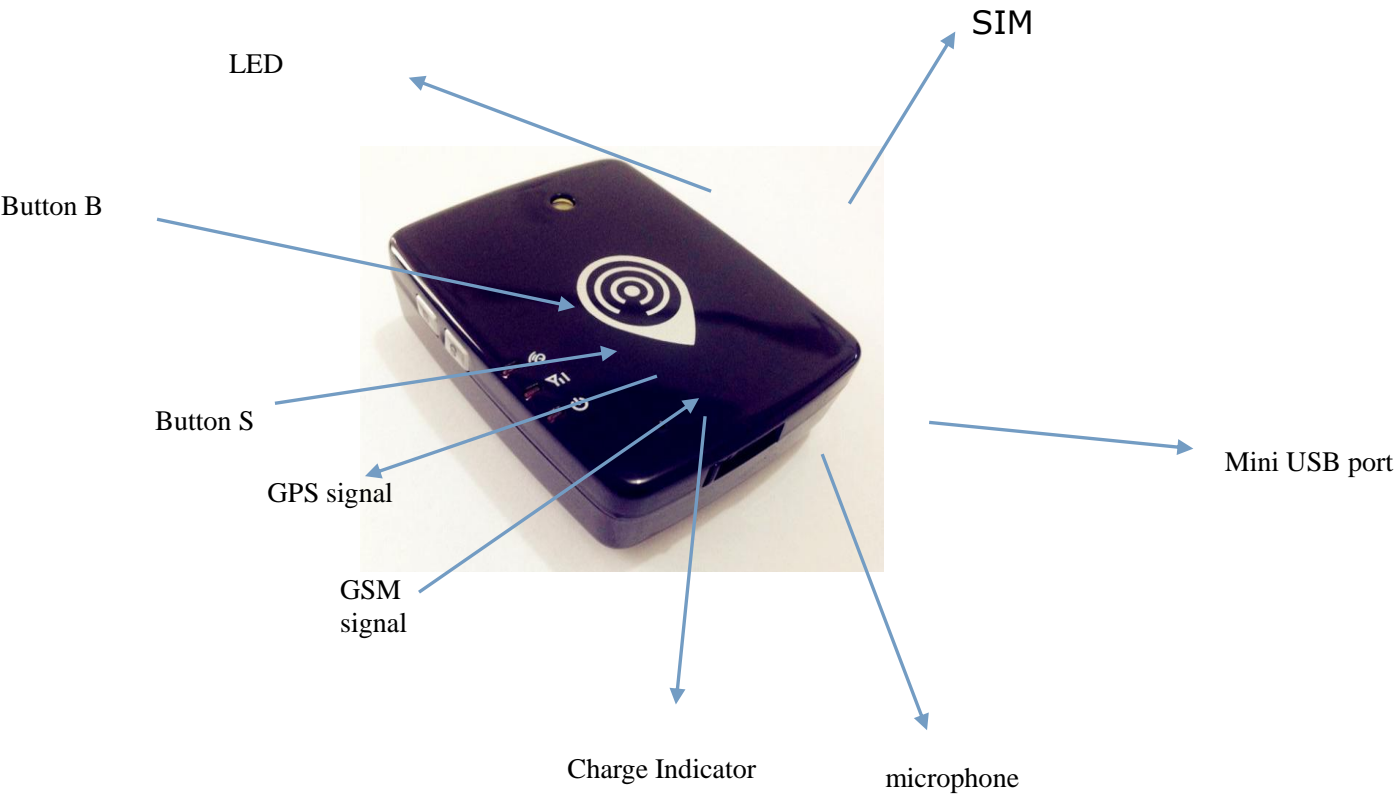
This section will describe how to set up your GT601

4.2 View

Back View

4.3 Functional Parts

GT601 you have two buttons and three with three different colors of the LED, to indicate the status of the unit.



Red LED - indicating battery status	
Off	Power is off or charging is complete
Flashing (every 0.1 second)	Low battery
On	Charging
Flashing (1 second on and 2 seconds off)	Working
Blue LED - indicating GPS status	
On	One button is being pressed
Flashing (every 0.1 second)	The unit is being initialized
Flashing (0.1 second on and 2.9 seconds off)	GT601B has a GPS fix
Flashing (1 second on and 2 seconds off)	GT601B has no GPS fix
Green LED - indicating GSM status	

On	One call is coming in / one call is being made
Flashing (every 0.1 second)	The unit is being initialized
Flashing (0.1 second on and 2.9 seconds off)	GT601B is connected to the GSM network
Flashing (1 second on and 2 seconds off)	GT601B is not connected to the GSM network
Buttons	
Power On/Off Button	Insert the SIM card machine automatically boot
S Button	S button for SOS distress alarm
B Button	B button is used to turn off the LED
Other Connectors	
Mini USB	Used for charging, firmware update and configuration on PC. (USB Data Cable or USB-to-Serial Adaptor is required for firmware update and configuration)

4.4 First Use

Please read this manual before using your GT601

4.4.1 Ensure that your GT601 has a working SIM installed.

- Check that the SIM has not run out of credit (Test the SIM in a phone to make sure it can send and receive SMS)
- Check that the SIM Lock code is turned off
- If you require the function of sending an SMS location report to the authorized phone number when it makes a call to the GT601, please make sure the SIM installed supports displaying caller ID.



4.4.2 Put the battery in GT601 and charge the tracker for at least 5 hours in power-off status using the wall charger or car charger. Or you can connect the tracker directly to computer by USB for charging. Red light is on during charging and is off when charging is complete.

4.4.3 for the first time, please insert SIM card machine automatically boot.

I suggest you turn to more quickly in the open for the first time at the position.

5. Change Password

Command: W*****,001,#####

Description: Change user's password.

Note:

1. ***** is user's password and the default password is 000000. The tracker will only accept commands from a user with the correct password. Commands with wrong password will be ignored.
2. ##### is the new password. Password should be 6 digits.

Example:

W000000,001,123456

W123456,001,999999

6. Time Zone

Command: W*****,032,T

Description: Correct time into your local time

Note:

1. Default time of the tracker is GMT
2. This correction is applied to location reports by SMS and SMS alarms.

T=0, to turn off this function.

T=[-32768,32767] to set time difference in minute to GMT.

For those ahead of GMT, just input the time difference in minute directly. For example, GMT+8,

W000000,032,480

„-“ is required for those behind GMT. For example, W000000,032,-120.

Example:

W000000,032,480

W000000,032,-120

7. Track

7.1 Track by position

- Track on Demand - Reply with longitude, latitude

Command: W*****,000

Description: Sending the command to the current position locator to query, reply to the message format is as follows:

Latitude = 22.604273N Longitude = 114.055046E Speed = 0.00 14/07/31 12:20 F:3.8V,04,01CC 0000 25F0 10D9

Example: W000000,000

- Track on Demand - Reply with a link to Google Map

Command: W*****,100

Description: Send this command to the tracker and then you receive an SMS with an http link. Click on the link then the location can be shown directly on Google Map on your mobile phone. For example:

<http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329&ie=UTF8&z=16&iwloc=addr&om=1>

Notes: Only smart phones and PDA support this function.

Example:

W000000,100



7.2 Track by Calling

Make a missed call to the tracker, after hanging up the phone is switched on, locator will return reply to the message format is as follows:

Latitude = 22.604273E Longitude = 114.055046N Speed = 0.00 14/07/31 12:20 F:3.8V,04,01CC 0000 25F0 10D9

Latitude : 22.604452E Longitude: 114.054482N speed: 0 positioning time date 14/07/31 12:20 battery voltage F:3.8v. GPS signal satellite number; 04 base station positioning code MCC:01CC MNC:0000 LAC:25F0 Cell ID:0F34

7.3 Track by Preset Interval

Command: W*****,002,XXX

Description: Set an interval for the tracker to continuously return its location by SMS

Note:

1. XXX is the interval in minute.
2. If XXX=000 to turn off tracking by time

Example:

W000000,002,030

The tracker will send location data back to your mobile phone every 30 minutes.

7.4 Google Earth and Google Map

Download Google Earth from <http://earth.google.com/>

Start Google Earth (For more information about Google Earth please refer to <http://earth.google.com/>) or go to <http://maps.google.com> in your Internet Explorer

Input the latitude and longitude that you receive from the tracker by SMS and click the search button.

Google Earth or Google Maps will display the location for you.

Example:

When you receive: Latitude = 22 32 40.05N Longitude = 114 04 57.74E

Type as the following picture shows:

(Note: you should input the latitude and longitude as: 22 32 40.05N 114 04 57.74E)



And then you can find the location of your tracker:



Or you can use local map software on PDA or car navigation device to input the coordinates.

7.5 Track by GPRS between Server and Tracker

7.5.1 Set Tracker's GPRS ID

Command: W*****,010,ID

Description: Set a digital GPRS ID for the tracker.

Note: GPRS ID must not over 14 digits.

Example:

W000000,010,00001

7.5.2 Set APN

Command: W*****,011,APN,Username,Password

Description: Set APN details for the tracker

Note:

1. APN username and password are optional. If no APN username and password are required, just input APN only;
2. APN defaulted as „CMNET“;
3. APN + username + password should not over 39 characters.

Example:

W000000,011,CMNET,user,6688

W000000,011,CMNET

7.5.3 Set IP and Port

Command: W*****,012,IP,Port

Description: Set IP and Port for tracker for GPRS communication.

Note:

-
1. IP is your server"s IP or the domain name.
 2. Port: [1,65534]

Example:

W000000,012,183.61.0.83,7788

W000000,012,www.track.com,7788 SMS query machine set TCP, IP port, APN, device ID

SMS commands to w*****, 701

Example:

W000000, 701

TCP,183.61.0.83,8887,cmnet,card,card,139666666661

7.5.4 Set DNS Server IP (optional)

Command: W*****,009,DNS Server IP

Description: In case the domain name you set by the last command (W*****,012,IP, Port) doesn"t work, which means your server IP is not properly set. You can first use this command to set DNS Server IP (please check with your DNS server provider for the DNS Server IP) and then redo the command W*****,012,IP, Port.

Example: W000000,009,220.23.4.90

7.5.5 Enable GPRS Tracking

Command: W*****,013,X

Description: Enable GPRS tracking function.

Note:

X=0, to turn off GPRS tracking (default);

X=1, to enable GPRS tracking via TCP

X=2, to enable GPRS tracking via UDP

Example: W000000,013,1

7.5.6 Set GPRS Time tracking

SMS commands: W*****, 014, XXXXX

Description: set GPRS to upload the positioning information packet interval.

Explain.

XXXXX is the 5 digit, to 1 second as unit.

XXXXX=00000, closed

XXXXX=00001~65535, upload time interval (in seconds as a unit)

For example: W00000001400060

Position every 60 seconds to upload a GPRS data.

7.5.7 Set GPRS Interval

Command: W*****,014,XXXXX

Description: Set time interval for sending GPRS packets.

Note:

XXXXX should be in five digits and in unit of 10 seconds.

XXXXX=00000, to turn off this function;

XXXXX=00001~65535, time interval for sending GPRS packet and in unit of 10 seconds.

In this example, the tracker will send every 600 seconds (10 minutes).

Example: W000000,014,00060

The tracker will send every 600 seconds (10 minutes).

For more information regarding GPRS tracking please refer to <GPRS Communication Protocol>

8. LED lights switch SMS commands

W*** ,055,x**

X=1,Open led

X=0,Close LED

Example

W000000,055,1

8.1 Set SOS authorized number SMS commands

W *** , 103, T**

T ; authorization number, maximum 16.

example

w000000,103,88888888

10. Speeding Alarm

SMS commands: W***** , 005, XX

Description: set the over speed alarm. When the mobile speed positioner is higher than the preset value will send alarm information to the SOS authorization number.

Description: XX for the preset speed value, two digit.

=00, close the over speed alarm

= [01, 20] set the speed (unit: 10 km / h)

For example: W000000005,08

When the positioning speed over 80 km / h, to send the alarm information.

11. Movement/Geo-fence

11.1 Movement Alarm

Command: W***** ,006,X

Description: When the tracker moves out of a preset circle scope, it will send an SMS alarm to the authorized phone number for SOS.

Note:

1. X is the preset radii to the tracker"s original place
=0, to turn off this function
2. Radii: [1, 4294967295] meter(s), suggest to be set above 100 meters;
3. GPRS command is 0x12

Example: W000000,006,1

When tracker moves out of this circle scope, it will send out an SMS alarm.

11.2 Geo-fence Alarm

Command: W*****,302,X

Description: Turns on Geo-fencing alarm. When the tracker moves in/out the preset scope, it will send an SMS alarm to the authorized phone number for SOS.

Note:

1. X is the parameters which includes: latitude, longitude, radii, in, out;
2. Latitude and longitudes should be in ASCII format as follows:
Latitude is ddd.dddddd, „0” is needed to be stuffed if no value available. „-” should be added for south.

Longitude is dd.dddddd, „0” is needed to be stuffed if no value available. „-” should be added for west.
3-5 Radii [1, 4294967295], meter(s), suggest to be set above 100 meters, if set above 8, it is corresponding radii;

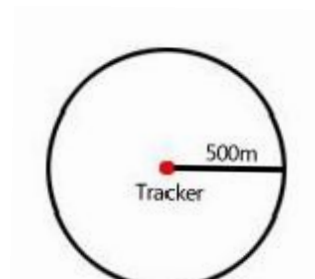
4. If In and Out are 0, corresponding function is invalid, if are 1, valid;
5. Reply as Geo-Fence Alarm;
6. GPRS exiting command is 0x12, entering command is 0x13;
7. Send W*****, 302 to turn off Geo-fence function;

Example:

W000000,302,22.000000,-114.123456,3000,1,1

Remarks:

1. Only one alarm can be set in either In or Out;
2. Only one alarm can be set in either Movement Alarm or Geo-fence Alarm.



12. Track by Distance

Command: W*****,303,X

Description: Send this command to set distance interval

Note:

1. X= [1, 4294967295], suggest to be set above 300 meters
2. X=0, turn off

Example: W000000,303,1000

12.1 remove blind data storage

SMS commands: W*****, 703

~~Description: if the cached data is not important, as long as uploading new data, use this command.~~

Description: clear the blind area of the stored data will not be returned

For example: W000000703

Reply: clear exflash data OK

13. Set Sensitivity of Tremble Sensor

Command: W*****,035,XX

Description: Send this command to set sensitivity of tremble sensor

Note:

1. XX=[1,255], it will more sensitive if XX is more smaller
2. Default value is 30

Example: W000000,035,30

13. Listen-in (Voice Monitoring)

Command: W*****,030,T

Description: Authorize a phone number to make a silence call to the tracker, the track answers the call automatically and allows the caller to listen to what happens around the tracker. There is no voice indication that the call is in progress

Note:

1. T is the telephone number for wiretapping and max. 16 digits
2. Calls from unauthorized number are treated as normal incoming calls and indicated by beeps.

Example:

W000000,030,88888888

14. Heartbeat

Command: W*****,015,data

Description: Set an interval for heartbeat.

Note:

data is the interval in unit of minute

data=0, to turn off this function;

data=1~65535, set interval for heartbeat.

Example:

W000000,015,10

In this example, the tracker will send heartbeat every 10 minutes.

15. Power Down

Command: W*****,026,XX

Description: Make the tracker into power down mode when it is inactive or immobile for a period of time. In Power Down states, GPS stops working and GSM enters sleep and stop sending out message until it is activated by message, incoming calls or movement or triggered by three buttons.

Note:

XX=00, to turn off this function.

XX=01~99, to turn on Power Down after a specified period of being inactive (or stationary). It is in unit of minute.

Example: W000000,026,10

The tracker will enter power down mode after it is inactive (or stationary) for 10 minutes.

16. Get IMEI

Commands: W*****, 601

Description: read device IMEI number

Note: IMEI is usually 15 digit

For example: W000000601

Reply: 011691002271305

W000000600 SMS commands to get version information

17. Initialization

Command: W*****,990,099###

Description: This is to make all settings (except for the password) back to factory default.

is the ending character and is required in the text message.

Example: W000000,990,099###

18. Password Initialization

Command: W888888,999,666

Description: This is to make the password back to factory default in case you forget your password..
If you had set authorized telephone number, when password preset successfully, the telephone will get W888888,999,666

Example: W888888,999,666

For more details regarding SMS commands, please go to Annex 1 Command List.

19. Parameter Editor

The tracker can be configured by computer using the Parameter Editor.

Parameter Configure Tool_V1.06

Port:COM1 Baud:38400 OPEN Version Read All Parameter Write All Parameter Default Parameter

Gprs Property

APN: USER NAME: USER PASSWORD: PORT: PROTOCOL:

IP: TRACKER ID: INTERVAL TIME: (0-65535)S

Sms Track Property

TRACK TELEPHONE: INTERVAL TIME: (0-999)Min SMS CMD PASSWORD:

Parameter Property

MONITOR TEL: GEO FENCE: LOW BATTERY: COURSE : (0-359)DEGREE SLEEP TIME: (0-99)Min

LOG INTERVAL: (0-65535)S GPS MODE: SMS ZONE: (-12-12)H SPEED LIMIT: (0-200)KM/H

Authority Telephone And Sms String

SOS/IN1 TEL: IN2 TEL: IN3 TEL:

SOS/IN1 TEL (SMS): IN2 TEL (SMS): IN3 TEL (SMS):

SOS/IN1 SMS CONTENT: IN2 SMS CONTENT: IN3 SMS CONTENT:

Extend Property

☐ Call For Sms ☐ Sms Format (EMEA0183) ☐ Hang Up In Calling ☐ Tracker Power On ☐ Gps Blind Area Alarm

☐ Led Off ☐ External Power Off

port: bps: Status::Port Close

Annex 2. Troubleshooting

Problem: Unit will not turn on	
Possible Cause:	Resolution:
Battery needs charging	Recharge battery for 3 hours
Problem: Unit will not reply with SMS	
Possible Cause:	Resolution:
Green LED is flashing (1 second on and 2 seconds off)	Make GT601B connected to GSM network.
GSM Network is slow	Some GSM networks slow down during peak time or when they have equipment problems.
Unit is sleeping or in power down mode	Cancel sleeping mode or power down
Wrong password in your SMS or wrong SMS format	Write correct password or SMS format
The SIM in GT601B has run out of credit	Replace or top up the SIM card
Problem: Green LED is Flashing (1 second on and 2 seconds off)	
Possible Cause:	Resolution:

No GSM signal	Check with a mobile phone to see if there is a signal in the area or try to call the unit to see if you hear a ring tone.
No SIM card	Insert a working SIM card. Check in phone that the SIM can send SMS message.
SIM card has expired	Check in phone that the SIM can send SMS message. Replace SIM card if needed.
SIM has PIN code set	Remove PIN code by inserting SIM in you phone and deleting the code.
SIM is warped or damaged	Inspect SIM, clean the contacts. If re-inserting does not help try another to see if it will work.
Roaming not enabled	If you are in a different country your SIM account must have roaming enabled.
Battery is low	Recharge the unit and the GSM will start working.
Problem: Blue LED is Flashing (1 second on and 2 seconds off) or the SMS received starts with 'Last...'	
Possible Cause:	Resolution:
Unit does not have clear view of the sky	Move the unit to a location where the sky is visible. Tall buildings, trees, heavy rain, can cause problems with the GPS reception.
Bad GPS reception	Place the front side of GT601B towards sky
Battery is low	Recharge the unit and the GPS will start working.
Problem: Unit Fails to Connect to Server via GPRS	
SIM card in GT601B does not support GPRS function	Enable SIM card GPRS function.
GPRS function of GT601B is turned off	Turn on GPRS function of GT601B.
Incorrect IP address or PORT	Get the right IP address and PORT and reset to GT601B.
GSM signal is weak	Move the unit to a location with good GSM reception.

