ZT-100

GPS Personal Tracker

User Manual

V6.3

Contents

1 Product Overview

The ZT-100 is a GPS/GPRS based personal tracking device, which is compact and easy to use.

ZT-100 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.

ZT-100 supports two way voice communications and can be activated either by the guardian calling the tracker or the tracker holder activating the SOS button. The tracker can be configured to report its location to the server base or mobile phone at preset intervals.

With internal memory, ZT-100 can store GPS coordinates when there is no GPRS connection or at a specified interval requested by the user.

ZT-100 has the following functions and features:

- SMS and GPRS TCP/UDP Communication (Meiligao Protocol)
- Track on Demand
- Show Location Directly on Mobile Phone
- Track by Time Interval
- Two-way Audio
- GSM Blind Area Memory
- Internal Memory for Logging
- Inbuilt Motion Sensor for Power Saving
- SOS Panic Button
- Movement Alarm
- Geo-fencing Control
- Low Battery Alarm
- Speeding Alarm
- GPS Blind Area Alarm (in/out)
- Three Buttons for Making Phone Call and/or Sending Message
- Built-in Super Magnet (optional)

2 For Your Safety

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

Switch on safely	Do not switch on ZT-100 when wireless phone use is prohibited or when it may cause interference or danger.
Switch off in hospitals	Follow any restrictions. Switch ZT-100 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 ZT-100 when at a refueling point. Do not use near fuels or

	chemicals.
Switch off near blasting	Follow any restrictions. Do not use ZT-100 when blasting is in progress.
Qualified service	Only qualified personnel can repair ZT-100.
Water resistance	ZT-100 is not fully water resistant. Keep it dry. Use waterproof bag if necessary.

3 ZT-100 Characteristics

Items	Specification
Charging Voltage	DC 4.2-5.5V/400mA (Mini USB port)
Internal Battery	Rechargeable and replaceable 1350 mAh battery (3.7V),
Dimension	77 mm × 51 mm × 25 mm
Weight	80g (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	55 hours in power-saving mode and 12 hours in normal mode
Memory	4MB flash memory
LED	3 LED lights to show power, GPS, GSM and other status.
Button	3 buttons(SOS/B/C) for making phone calls and sending SMS

4 Getting Started

This section will describe how to set up your ZT-100.

4.1 Hardware and Accessories

ZT-100 is supplied in a box which includes:

ZT-100 with Battery

Earphone with Mic

Wall Charger

Car Charger

USB Data Cable

CD

4.2 View

Front View

Side View

Back View

4.3 Functional Parts

Your ZT-100 has four buttons and three LEDs with three different colors 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)	ZT-100 has a GPS fix
Flashing (1 second on and 2 seconds off)	ZT-100 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)	ZT-100 is connected to the GSM network
Flashing (1 second on and 2 seconds off)	ZT-100 is not connected to the GSM network
Buttons	
Power On/Off Button	To turn on/off ZT-100
SOS Button	To make a phone call and/or send an SMS to the preauthorized phone number. Press it to receive an incoming call. Press it to increase volume during conversation.
Call B	To make a phone call and/or send an SMS to the preauthorized phone number. Press it to reject a call, cancel calling or complete a conversation.
Call C	To make a phone call and/or send an SMS to the preauthorized phone number. Press it to decrease volume during conversation.
Other Connectors	
Mini USB	Used for charging, firmware update, configuration on PC and exporting stored data. (USB Data Cable or USB-to-Serial Adaptor is required for firmware update, configuration and exporting stored data)
SIM Card	To insert SIM card here
Earphone Plug	For connecting earphone
Lanyard Loop	For connecting lanyard.

4.4 First Use

Please read this manual before using your ZT-100.

4.4.1 Ensure that your ZT-100 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 ZT-100, please make sure the SIM installed supports displaying caller ID.

4.4.2 Charge the battery for at least 3 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 off when charging is complete.

4.4.3 Push the Power On/Off button to the ON side and wait for about 20 seconds. It will then enter standby mode. It is suggested that you be in an outer place where it can receive better GPS when you turn on the device.

Check that the Red LED (Battery) is flashing 1 second on and 2 seconds off.
Check that the Green LED (GSM) is flashing 0.1 second on and 2.9 seconds off.
Check that the Blue LED (GPS) is flashing 0.1 second on and for 2.9 seconds off.

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 SMS

- Track on Demand - Reply with longitude, latitude, speed and date

Command: W******,000

Description: Get the current location of the tracker, send this SMS or make a telephone call directly to the tracker and it will report its longitude and latitude by SMS with format as follows:-

Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50

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

Note: Only smart phones and PDA support this function.

Example:

W000000,100

7.2 Track by Calling

Make a missed call to the tracker and it will report its longitude and latitude by SMS with format as follows:-

Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50

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.

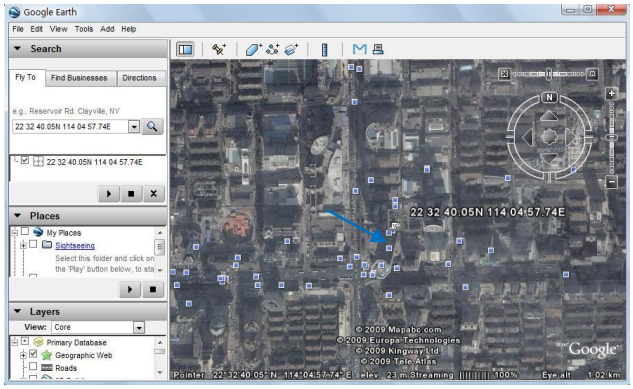
Example:

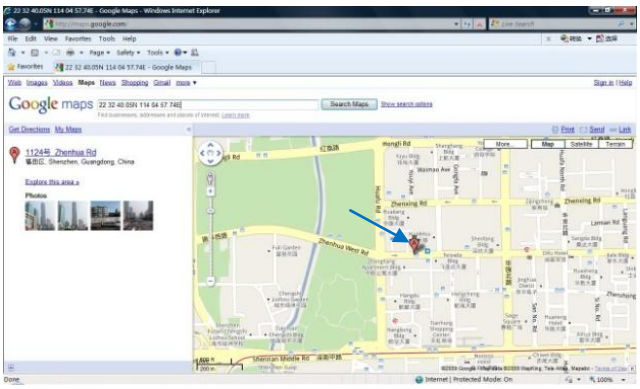
When you receive: Latitude = 22 32 40.05N Longitude = 114 04 57.74E

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:

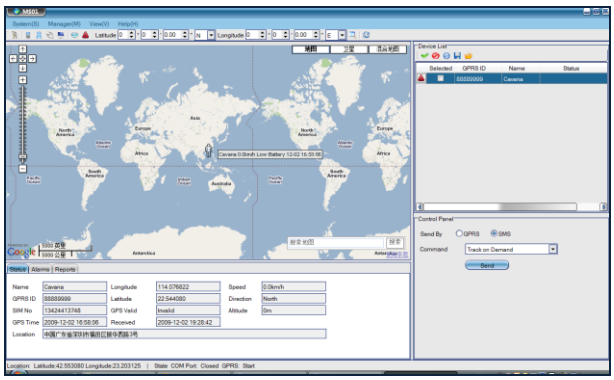


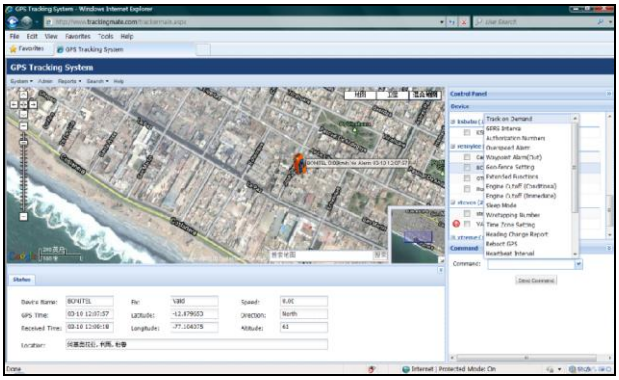


Or you can use local map software on PDA or car navigation device to input the coordinates.

7.5 Track by MS01/MS02

If you have bought our GPS Tracking Software MS01 or MS02, after proper configuration, you can do tracking on MS01/MS02.





Please refer to MS01/MS02 User Guide for more information.

7.6 Track by GPRS (Meiligao Protocol) between Server and Tracker

7.6.1 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

7.6.2 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,Meiligao,6688

W000000,011,CMNET

7.6.3 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, 220.121.7.89,8500

W000000,012,www.meiligao.net,8500

7.6.4 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

7.6.5 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

7.6.6 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>

7.7 Track by GpsGate

The ZT-100 supports GpsGate Software.
Please contact us or GpsGate for more information of settings.

8. Authorization

Command: W******,003,F,P,T1 or W******,003,F,P,T1,T2 (optional)
Description: Authorize phone numbers for the buttons/inputs for receiving location reports or SMS alarms or phone calls
Note:
F=0, to turn off this function; (default)
F=1, only send SMS to the authorized phone number;
F=2, only call the authorized phone number;
F=3, both SMS and calling
P=1, set an authorized number for SOS button (Input 1)
P=2, set an authorized number for B button (Input 2)
P=3, set an authorized number for C button (Input 3)
T1: Preset phone number. Max.16 digits
If you need to set different numbers for receiving SMS and phone call, you can then use W******,003,F,P,T1,T2, In this case T1 is the phone number for receiving SMS and T2 for receiving phone call.
Example:
W000000,003,3,1,88888888
W000000,003,3,1,88888888,99999999

9. Call Function

You can use the earphone for conversation purpose.

9.1 Receiving Phone Call

Use your phone or mobile phone to call the tracker, the green LED will be on. Press SOS button to receive the incoming call or press Call B button to reject the call.

9.2 Making Phone Call

After you have authorized phone numbers for SOS/Call B/Call C button, you can press one of these buttons to make a call to the preset phone number.
Press Call B button to cancel a calling or to end a conversation.

9.3 Volume Adjustment

During a conversation, press SOS button to increase the volume or press Call C button to decrease the volume.

10. Low Battery Alarm

Command: W******,004,X
Description: When the tracker's voltage is lower than the preset value, it will send an SMS alarm to the authorized phone number for SOS.
Note:
X is the preset value of voltage.

=0 , to turn off this function	=1, <3.3V	=2 , <3.4V
=3 , <3.5V (default)	=4 , <3.6V	=5 , <3.7V

Example: W000000,004,2

11. Speeding Alarm

Command: W******,005,XX
Description: Turn on speeding alarm. When the tracker speeds higher than the preset value, it will send an SMS to the authorized phone number for SOS.
Note: XX is the preset value of speed and in 2 digits.
=00 , to turn off this function
=[01, 20] (unit: 10Km/h)
Example: W000000,005,08
When the tracker's speed is over 80km/h, an SMS alarm will be sent out.

12. Movement/Geo-fence

12.1 Movement Alarm

Command: W******,006,XX

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

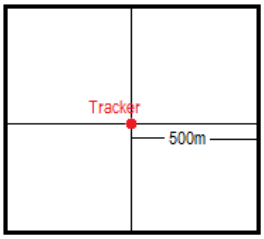
Note:

XX is the preset distance to the tracker's original place

=00, to turn off this function

=01, 30m	=02, 50m	=03, 100m	=04, 200m
=05, 300m	=06, 500m	=07, 1000m	=08, 2000m

Example: W000000,006,06



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

12.2 Geo-fence Alarm

Command: W******,017,X or W******,117,X

Description: Turn 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. 017 is for alarm when tracker moves out the preset scope;
2. 117 is for alarm when tracker moves in.
3. X is the coordinates which include: Lower-left X,Lower-left Y,Upper-right X,Upper-right Y
4. Lower-left X should be less than Upper-right X;
5. All longitudes and latitudes should be in ASCII format as follows:-
   Longitude: DDDMM.MMMM,E/W. 4 places of decimal. '0' is needed to be stuffed if no value available.
   Latitude: DDMM.MMMM,N/S. 4 places of decimal. '0' is needed to be stuffed if no value available;
6. Send W******,006,00 to turn off Geo-fence function.

Example:

W000000,017,11404.0000,E,2232.0010,N,11505.1234,E,2333.5678,N

W000000,117,11404.0000,E,2232.0010,N,11505.1234,E,2333.5678,N

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.

13. 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.

14. Track Log

14.1 Log by Interval

Command: W******,031,X
Description: Set time interval for logging GPS information. The information is stored within the device memory. When the memory gets full, the newest record will be overwritten on top of the oldest (FIFO - First In, First Out). In that case, only the newest information is stored.
Note:
1. X=0, to turn off this function. X=[1, 65535] to set interval in the unit of SECOND.
2. The logged message is in GPRMC format and includes:
   Date and time
   Longitude
   Latitude
   Speed
   Direction
3. All data, stored within the memory, may be exported to the PC using the USB connector. For this matter the "GPSLog" program has to be used *(please refer to < GPSLog User Guide> and <GPRS Communication Protocol> for more information).*
4. The device has 4MB internal memory space for storing the track log and is able to store up to 180,000 records within the memory.
Example:
W000000,031,60
The tracker will store GPS data every 60 seconds.

14.2 Auto Log when no GPRS

When there is no GPRS connection, the tracker can store all GPS information triggered by preset tracking interval, alarms, request, or button activation and send this information (FIFO - First In, First Out) to server by GPRS or preauthorized mobile phone by SMS when GPRS connection recovers.
The interval memory can store up to 1500 SMS and 4600 GPRS message.

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. Initialization

Command: W******,990,099###
Description: This is to make all settings (except for the password) back to factory default.
Note: Turn on the device, press the SOS button for five times continuously and the red LED will be on, and then send (within 120 seconds) this SMS to the tracker.
is the ending character and is required in the text message.
Example: W000000,990,099###

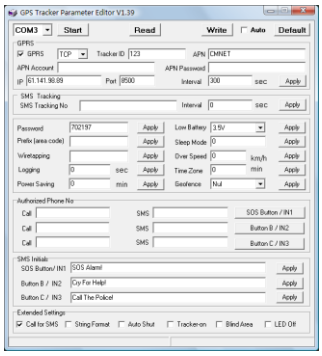
17. Password Initialization

Command: W888888,999,666
Description: This is to make the password back to factory default in case you forget your password.
Notes: Turn on the tracker, press the SOS button for five times continuously and the red LED will be on, and then send this SMS (within 120 seconds) to the tracker to make the password back to factory default (000000).
Example: W888888,999,666

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

18. Parameter Editor

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



GPS Tracker Parameter Editor V1.39

Please refer to <GPS Tracker Parameter Editor> for more information.

19. Copyright and Disclaimer

Annex 1. SMS Command List

Note: ****** 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.

Description	SMS Command	Example
Track on Demand	W******,000	W000000,000
Remarks: To get the current location of the tracker, send this SMS or make a telephone call directly to the tracker and it will report its longitude and latitude by SMS with format as follows:- Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50		
Track on Demand -Google Link	W******,100	W000000,100
Remarks: 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 (Note: Only smart phones and PDA support this function.)		
Change Password	W******,001,######	W000000,001,123456
Remarks: To change user's password. ###### is the new password. Password should be 6 digits.		

Track by Interval	W******,002,XXX	W000000,002,030
Remarks: To set interval for automatic timed report. XXX is the interval in minute. If XXX=000 to turn off tracking by time. In this example, the tracker will send location data back to your mobile phone every 30 minutes.		
Authorization	W******,003,F,P,T1 (W******,003,F,P,T1,T2)	W000000,003,3,1,88888888 W000000,003,3,1,88888888,99999999
Remarks: To authorize phone numbers for the buttons/inputs for receiving location reports or SMS alarms or phone calls. F=0, to turn off this function; (default) F=1, only sends SMS to the authorized phone number; F=2, only calls the authorized phone number; F=3, both SMS and calling P=1, set an authorized number for SOS button (Input 1) P=2, set an authorized number for B button (Input 2) P=3, set an authorized number for C button (Input 3) T1: Preset phone number. Max.16 digits If you need to set different numbers for receiving SMS and phone call, you can then use W******,003,F,P,T1,T2, In this case T1 is the phone number for receiving SMS and T2 for receiving phone call.		
Low Battery Alarm	W******,004,X	W000000,004,2
Remarks: When the tracker's voltage is lower than the preset value, it will send an SMS alarm to the authorized phone number for SOS. X is the preset value of voltage.		
=0 , to turn off this function	=1, <3.3V	=2 , <3.4V
=3 , <3.5V (default)	=4 , <3.6V	=5 , <3.7V
Speeding Alarm	W******,005,XX	W000000,005,08
Remarks: When the tracker speeds higher than the preset value, it will send an SMS to the authorized phone number for SOS. XX is the preset value of speed and in 2 digits. =00 , to turn off this function =[01, 20] (unit: 10Km/h) In this example, when the tracker's speed is over 80km/h, an SMS alarm will be sent out.		
Movement Alarm	W******,006,XX	W000000,006,06
Remarks: When the tracker moves out of a preset square scope, it will send an SMS alarm to the authorized phone number for SOS. XX is the preset distance to the tracker's original place =00, to turn off this function		
=01, 30m	=02, 50m	=03, 100m	=04, 200m
=05, 300m	=06, 500m	=07, 1000m	=08, 2000m
Geo-fence Alarm	W******,017,X	W000000,017,11404.0000,E,2232.0010,N,11505.12

	W******,117,X	34,E,2333.5678,N W000000,117,11404.0000,E,2232.0010,N,11505.1234,E,2333.5678,N
Remarks: 017 is for alarm when tracker moves out the preset scope; 117 is for alarm when tracker moves in. When the tracker moves in or out, it will send an SMS alarm to the authorized phone number for SOS. X is the coordinates which include: Lower-left X,Lower-left Y,Upper-right X,Upper-right Y For example, 11404.0000,E,2232.0010,N,11505.1234,E,2333.5678,N Note: 1. Lower-left X should be less than Upper-right X; 2. All longitudes and latitudes should be in ASCII format as follows:- Longitude: DDDMM.MMMM,E/W. 4 places of decimal. '0' is needed to be stuffed if no value available. Latitude: DDMM.MMMM,N/S. 4 places of decimal. '0' is needed to be stuffed if no value available; 3. Only one alarm can be set in either Movement Alarm or Geo-fence Alarm; 4. Send W******,006,00 to turn off Geo-fence function.		
Extended Functions	W******,008,ABCDEFGHIJ### #	W000000,008,1011100011###
Remarks: **A=0**, turn off the function of sending SMS location report after a phone call is made to the tracker. **A=1**, turn on the function of sending SMS location report after a phone call is made to the tracker. **B=0**, location data of NMEA 0183 GPRMC will be interpreted into normal text for easy reading. For example, Latitude = 22 32 36.63N Longitude = 114 04 57.37E, Speed = 2.6854Km/h, 2008-12-24,01:50 **B=1**, location data complies with NMEA 0183 GPRMC protocol. For example, $GPRMC,161509.000,A,2232.5485,N,11404.6887,E,0.3,153.7,290709,,*03 **C=0**, turn off the function to automatically hang up an incoming call. **C=1**, turn on the function to automatically hang up an incoming call after 4 - 5 rings. **D=0**, turn off the function of sending an SMS when the tracker is turned on. **D=1**, turn on the function of sending an SMS to the authorized phone number for SOS button when the tracker is turned on. **E**, defaulted as 1 (the tracker shuts down automatically when the power voltage is lower than 3V). **F=0**, turn off the SMS alarm when the tracker enters GPS blind area. **F=1**, turn on the SMS alarm when the tracker enters GPS blind area. SMS is to be sent to the authorized phone number for SOS. **G=0**, 3 LEDs work normally. **G=1**, 3 LEDs stop flashing when the tracker is working. **H**, reserved and defaulted as '0' **I**, reserved and defaulted as '0' **J**, reserved and defaulted as '1' **###** is the ending character (ABCDEFGHIJ defaulted as 1000100001)		
Presetting by SMS for GPRS tracking (*Ensure that your SIM card supports GPRS connection prior to setting)*		
Set Tracker's GPRS ID	W******,010,ID	W000000,010,00001
Remarks: to set a digital GPRS ID for the tracker.		

GPRS ID must not over 14 digits.		
Set APN	W******,011,APN,Username, Password	W000000,011,CMNET,Meiligao,6688 W000000,011,CMNET
Remarks: If no APN username and password are required, just input APN only; APN defaulted as 'CMNET'; APN + username + password should not over 39 characters.		
Set IP and Port	W******,012,IP,Port	W000000,012, 220.121.7.89,8500 W000000,012,www.meiligao.net,8500
Remarks: IP is your server's IP or the domain name. Port: [1,65534]		
Set DNS Server IP	W******,009,DNS Server IP	W000000,009,220.23.4.90
Remarks: 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.		
Enable GPRS Tracking	W******,013,X	W000000,013,1
Remarks: X=0, to turn off GPRS tracking (default); X=1, to enable GPRS tracking via TCP X=2, to enable GPRS tracking via UDP		
Set GPRS Interval	W******,014,XXXXX	W000000,014,00060
Remarks: to set time interval for sending GPRS packets. 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).		
Set Heartbeat Interval	W******,015,data	W000000,015,10
Remarks: to set interval for heartbeat. Data: in unit of minute data=0, to turn off this function; data=1~65535, set interval for heartbeat. In this example, the tracker will send heartbeat every 10 minutes.		
Heading Change Report	W******,036,degree	W000000,036,90
Remarks: when the heading direction of the tracker changes over the preset degree, a message with location data will be sent back to the server by GPRS. degree=0, to turn off this function. degree=[1,360], to set degree of direction change.		

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

Sleep Mode	W******,021,XX###	W000000,021,02###

Remarks: this setting is for power saving.

XX=00 turn off sleep mode	XX=01 Level I	XX=02 Level II

is the ending character

Here is some explanation for the sleep mode. First, assume that the GPS acquisition time is ONE minute.

[1] In Level I

The GPS module will be working for the first three minutes (i.e. 3 times of acquisition time) and then shut down for ONE minute (i.e. equivalent to acquisition time), and then work again for another three minutes……

[2] In Level II

The GPS module will be working for the first two minutes (i.e. twice of acquisition time) and then shut down for ONE minute (i.e. equivalent to acquisition time), and then work again for another two minutes……

Power Down	W******,026,XX	W000000,026,10

Remarks: to set power down mode when the tracker is inactive or stationary for a period of time.

In Power Down mode, GPS stops working and GSM enters sleep and stop sending out message until it is activated by message, incoming calls, movement, or triggered by three buttons.

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.

In this example, the tracker will enter power down mode after it is inactive (or stationary) for 10 minutes.

Listen-in (Voice Monitoring)	W******,030,T	W000000,030,88888888

Remarks: T is the telephone number for wiretapping and max. 16 digits.

This is an optional function which requires an external microphone.

Set Log Interval	W******,031,X	W000000,031,60

Remarks: to set the interval for storing GPS data into tracker's flash memory.

(Note: this interval is not relevant to the interval of SMS/GPRS tracking)

X=0, to turn off this function.

X=[1, 65535] to set interval in second.

In this example of W000000,031,60, the tracker will store location data every 60 seconds.

Time Zone	W******,032,T	W000000,032,480 W000000,032,-120

Remarks: Default time of the tracker is GMT. You can use this comment to correct it to your local time. This command is for SMS tracking only.

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.

Set SMS Header	W******,033,P,Char	W000000,033,1,help

Remarks: this command is to set initial characters for SOS message when SOS/IN1, Button B/IN2, Button C/IN3 is pressed.

P=1, SOS button/Input1	P=2, B button/Input2	P=3, C button/Input3
Char is the character in SOS message and max 32 characters and defaulted as:		
1 SOS Alarm!	2 Cry For Help!	3 Call The Police!
Set Prefix (Country Code)	W******,502,*Data#	W000000,502,*+86#
Remarks: be advised caution in this setting. Normally, your country code (for example in China it is +86) will be automatically added and displayed prior to a phone number when sending SMS. In this case, you don't have to do this setting. If the country code is not added, you are required to input the country code, for example, +86, to enable the tracker can send out SMS to your mobile phone. Data: max 10 digits		
Get Version No. and Serial No.	W******,600	W000000,600
Remarks: to get the version and serial number of tracker's firmware		
Get IMEI	W******,601	W000000,601
Remarks: to get IMEI of the tracker		
Reboot GSM	W******,901###	W000000,901###
Remarks: to reboot the GSM module of the tracker		
Reboot GPS	W******,902###	W000000,902###
Remarks: to reboot the GPS module of the tracker		
Initialization	W******,990,099###	W000000,990,099###
Remarks: Turn on the device, press the SOS button for five times continuously and the red LED will be on, and then send (within 120 seconds) this SMS to the tracker to make all settings (except for the password) back to factory default. ### is the ending character.		
Password Initialization	W888888,999,666	W888888,999,666
Remarks: In case you forget your password, turn on the tracker, press the SOS button for five times continuously and the red LED will be on, and then send this SMS (within 120 seconds) to the tracker to make the password back to factory default (000000).		

Annex 2. Troubleshooting

Problem: Unit will not turn on when pushing the power switch to On side	
Possible Cause:	**Resolution:**
Power switch was not pushed properly	Check and make sure the power button is pushed to On side.
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	Make ZT-100 connected to GSM network.

seconds off)	
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 ZT-100 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 ZT-100 towards sky
Battery is low	Recharge the unit and the GPS will start working.
Problem: Unit Fails to Connect to Server via GPRS	
Possible Cause:	**Resolution:**
SIM card in ZT-100 does not support GPRS function	Enable SIM card GPRS function.
GPRS function of ZT-100 is turned off	Turn on GPRS function of ZT-100.
Incorrect IP address or PORT	Get the right IP address and PORT and reset to ZT-100.
GSM signal is weak	Move the unit to a location with good GSM reception.

Contacts

If you encounter any problems when using our products, and cannot solve them by yourself, please contact our technical support team by writing an E-Mail to info@meitrack.com. We will be pleased to help you.