

GPS Vehicle Tracker

User Manual (Model: MT02)



Please Read This Manual Carefully Before Operation



Security of Rental Car



Monitoring of Public Conveyance



Ambulance assignment



Cargo Logistic Assignment



Fleet Management



Taxi Assignment



Security of the Outdoor Activities

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1. Product Overview

MT02 is a kind of mini GPS vehicle tracking product can be used for tracking and security of motorcycle and automobile etc. Mini size, built-in antenna and waterproof designed, easy to be installed and concealed, with power voltage range from 6V~24V, therefore can satisfy tracking and security demands for all kinds of vehicles.

2. Applications

- Vehicle Real Time Tracking
- Motorcycle/car Security/Anti-Hijack
- Fleet Management

3. Features & Functions

- * Tracking by SMS/GPRS (TCP/UDP)
- * Tracking by time/distance interval
- * Compact size with waterproof design
- * Real time tracking via the web-platform (Optional)
- * Get position location via call/SMS
- * Arm/Disarm by SMS or phone call
- * Get location physical name via SMS & from the web-platform
- * Google Map link for location via SMS, it shows your location on map via mobile phone.
- * Mileage calculation with longitude and latitude via SMS; view mileage data via GPS web-based tracking centre system
- * Over speed alert
- * Geo-fence alert
- * Movement alert

4. Specifications

Items	Specifications
Dimension	68*52*14mm
Weight	55g
Input voltage	DC 9V~24V/1.5A
Back-up Battery	N/A
Power Consumption	65mA standby current
Operating Temperature	-20°C~75°C
Humidity	5%~95%
LED	2 LED lights to show GPS, GSM status
Button	1 power on/off
GSM Frequency	GSM 850/900/1800/1900MHz
GPS Chip	GPS SIRF-Star III Chipset
GPS Sensitivity	-159dB
Positioning Accuracy	10meters, 2D RMS
I/O	N/A

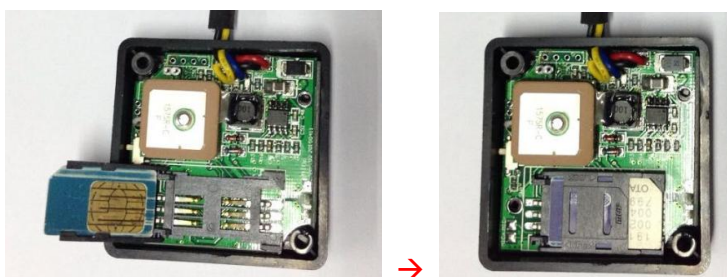
5. First Use

5.1 Install SIM Card

1) Prepare a GSM SIM card, make sure it has credit.

(test the SIM in a phone to make sure it can send and receive SMS);

2) Unlock the SIM slot, and put the SIM card inside.



5.2 Connect to power

Connect the device with external power like car battery, and turn on its power switch and it will work automatically.

5.3 LED indications

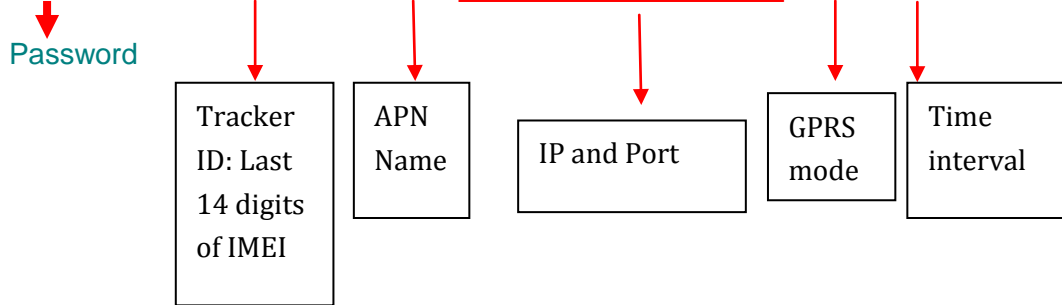
Push the power switch to turn on/off MT02

GPS LED (Red)	
Flashing (every 0.1 second)	Initializing or back-up battery power is low
Flashing (0.1 second on and 2.9 seconds off)	Device has GPS signal
Flashing (1 second on and 2 seconds off)	Device has no GPS signal
GSM LED (Green)	
Flashing (every 0.1 second)	Initializing or low power
Flashing (0.1 second on and 2.9 seconds off)	Device has GSM signal
Flashing (1 second on and 2 seconds off)	Device has no GSM signal

6. Connect MT02 to GPRS01 Platform

After confirming the tracker has picked up signal, please send WWW to tracker and compare if the setting are OK for your SIM card. Normally the reply is as following:

000000;62131545863254;internet;www.global-track.net,9600;TCP;00006



Normally you need to check the APN of your SIM card, you can ask your SIM provider for its APN

① Set ID by SMS

Command: W000000,010,ID

Description: every tracker should have a unique ID. MT02 has its own fixed unique ID, so you do not need to change its ID.

② Set APN by SMS

Command: W000000,011,APN,APN name, APN password

Description: APN name, APN username, APN password

If no password required, just put in APN name only.

For example, internet is your APN, it has no APN account and APN password.

Then send command W000000,011,internet to the SIM of tracker.

③ Set IP Address and Port by SMS

Description: IP address is 210.209.68.180 Port is 9600

SMS command: W<password>,012,<IP>,<port>

Example:

SMS send: W000000,012, 210.209.68.180,9600

We support domain name instead of IP address:

Example: W000000,012,www.global-track.net,9600

④ Enable GPRS Function

Command: W<password>,013,X

Description: X=0,close GPRS(Default)

X=1,enable TCP

X=2,enable UDP

Here TCP is recommended. Because some SIM doesn't support UDP.

⑤ Set Time Interval for Sending GPRS Packet

Command: W<password>,014,XXXXX

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

XXXXX =00000, to disable this function

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

Note: More GPRS01 Platform functions, please check manual of Operation Instruction of Topshine web-based tracking platform GPRS01.

Next Step: Add tracker on GPRS01 Platform

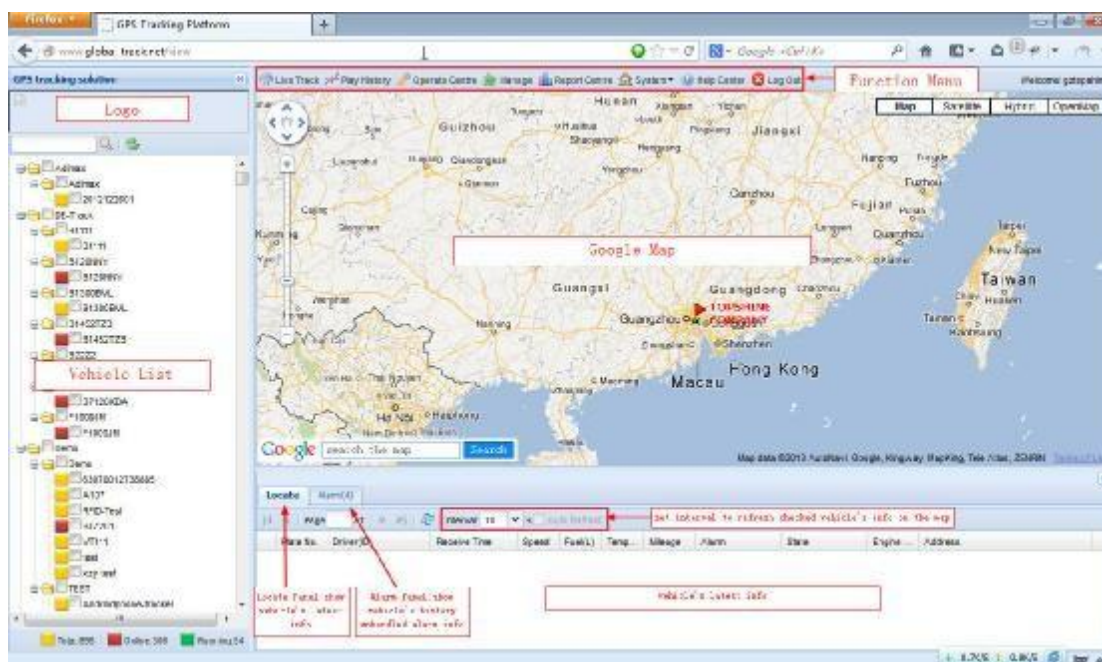
Turn on the tracker MT02, when it normal working (has the GSM & GPS signal),

① Login Topshine GPRS01 Platform

Website: www.global-track.net

User Name: ***

Password: ***



Note: Red icon means the vehicle Online;

Yellow icon means the vehicle offline;

Green icon means the vehicle running.

② Vehicle Management

Centralized management of all vehicles in the platform, the “Kind, GPRS ID, Plate No.” are mandatory terms, and the **GPRS ID** must be consistent with the **tracker ID**.

Set up a new group and new vehicle information. For example,


Group name: demo123

Username: demo123

Password: 123

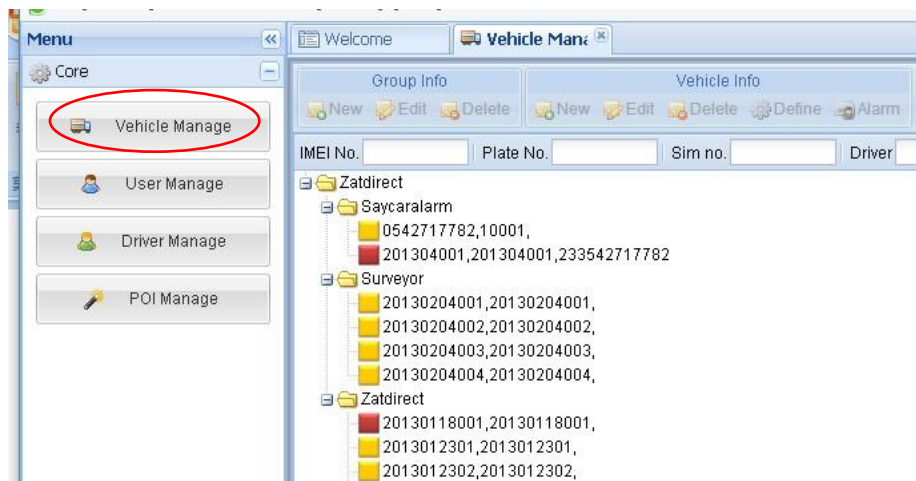
Vehicle name: Benz2012

③ Set up a new group e.g. ‘demo123’

Click picture 1 “manage”  and then click the picture 2, “Vehicle Manage.”




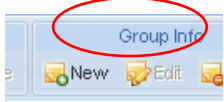
Picture 1



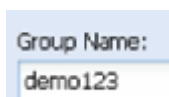
Picture 2

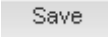
Click the company name, e.g.  in picture below:

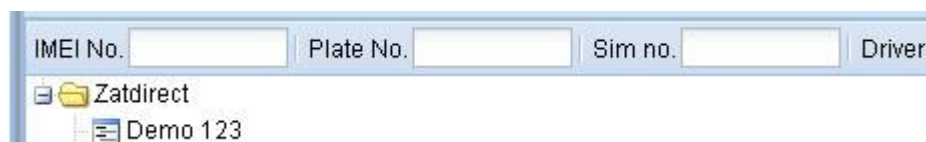


Click  in  (circled in red), then you can see picture below:

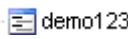

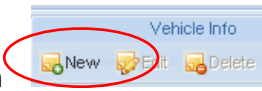
Input 'demo123' in the blank of Group Name

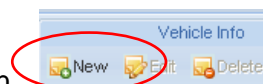


Click  , then group 'demo123' is ready as below:



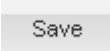
④ Set up information for a new vehicle e.g. 'Benz123'

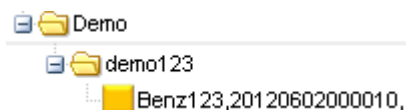
Click the group name  , and click  in  , then you can see picture below:



The screenshot shows the 'Vehicle Man' software window. The form contains the following fields and values:

- Kind*: TS310/TS300/M
- Base Mileage: 0
- Driver ID: [Empty]
- GPRS ID*: 2012060200010
- Brand: [Empty]
- Driver: [Empty]
- Plate No.*: Benz123
- Type: [Empty]
- Model: [Empty]
- Sim no.: [Empty]
- Color: [Empty]
- Chassis: [Empty]
- Group Name*: Demo 123
- Time Zone(Hour): 0
- Engine Number: [Empty]
- Manufacture Date: [Empty]
- Purchase Value: 0
- Depreciation Value: 0
- MapInfo: Open Street Map(Free)
- Init Temp: Low Temp: 0, High Temp: 0, Min Temp: 0, Max Temp: 848
- Init Fuel: Quart: 0, Min Fuel: 0, Max Fuel: 0

Input the correct Kind, GPRS ID and Plate No. and Customize Mark etc. necessary information, click , then you can see group 'demo123' and vehicle 'Benz123' with tracker ID 20120602000010 have been set ready as below.



Once again into the main page, check the little box before the red icon; you will see the map locate the tracker's position automatically. Such as following picture:

The screenshot displays a web-based GPS tracking application. The interface includes a navigation menu at the top with options like 'Live Track', 'Play History', 'Operate Centre', 'Manage', 'Report Centre', 'System', 'Help Center', and 'Log Out'. On the left, a tree view shows a list of devices under a 'Demo' folder, with 'personal tracker' selected. The main area features a Google Map of East Asia, with a red pin indicating the location of the selected vehicle. A pop-up window provides detailed information for this vehicle.

Vehicle ID:20131119001 Plate No.:personal tracker

Latitude: 23.14877 Longitude: 113.31620
 Status: Engine Off; Close; Speed: 0Km/h
 Signal: GPS Timestamp: 2013-11-19 11:42:21
 Address:

Buttons: Vehicle Info, Live Track, Take Photo

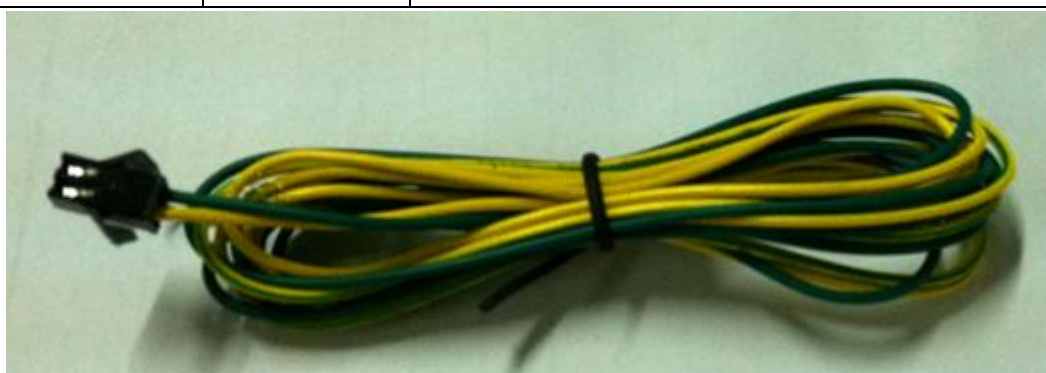
Below the map, there is a 'Locate' button and an 'Alarm(0)' indicator. A data table shows the tracking history for the selected vehicle.

Plate No.	Driver(ID)	Receive Time	Speed	Fuel(L)	Temp...	Mileage	Alarm	State
1 person...		2013-11-19 11:...	0	.00	0	.18		Engine Off, Clos

7. Installation

7.1 Wiring

PIN Number	Color	Description
GND	Yellow-Green wire	Ground, Negative
POWER	Green wire	DC in (power source). Input voltage: 9V-24V, 12V suggested.



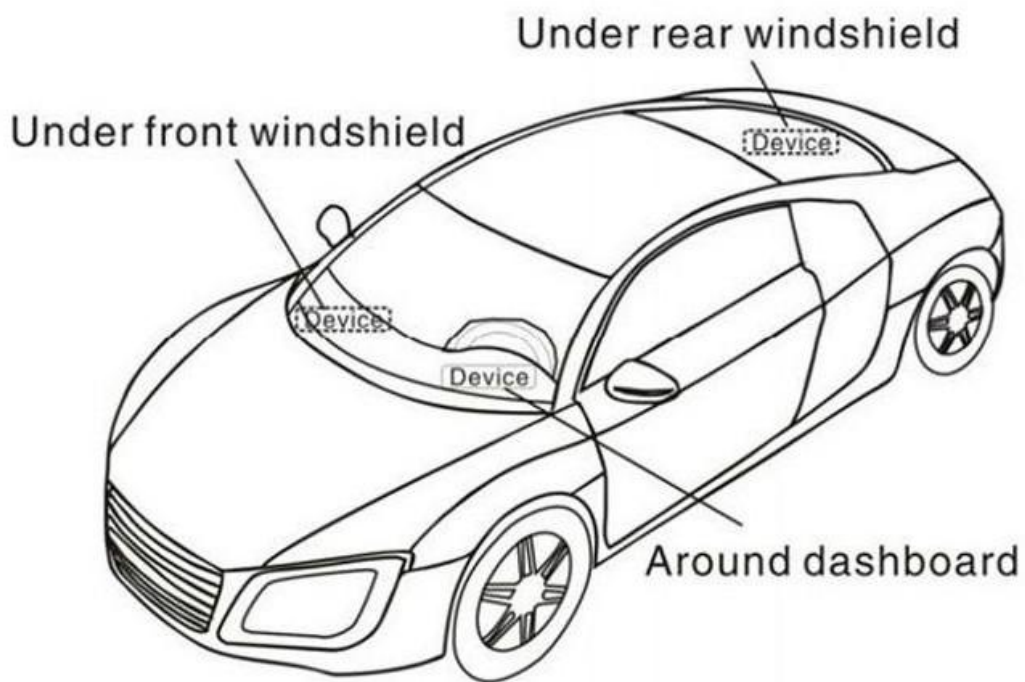
7.2 Install GPS/GSM Antenna

MT02 has built-in GSM & GPS antennas, do not need to install.

Note: Do not shield or cover the GPS Antenna with any objects containing metal

7.3 Recommended installation place

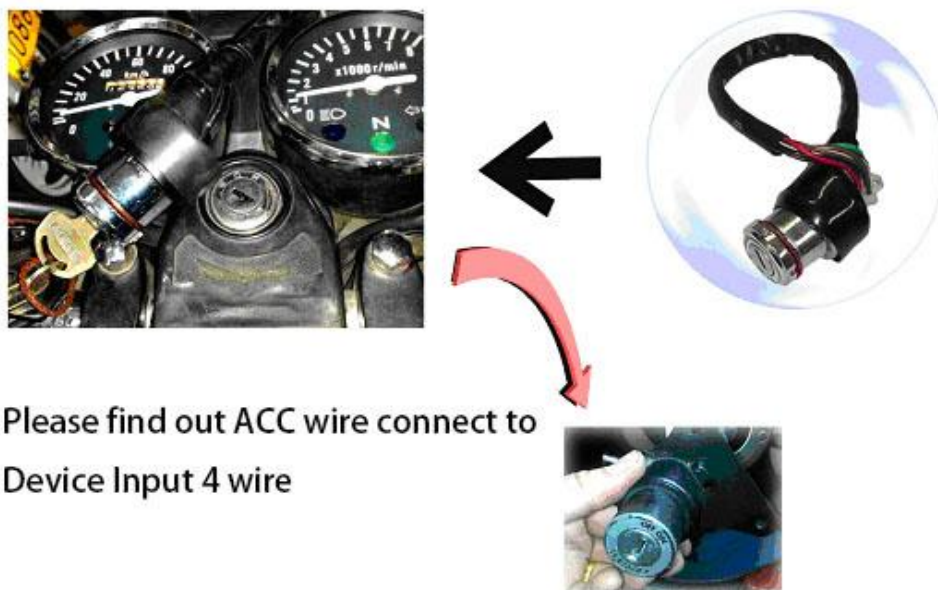
For automobile:



For Motorcycle:



Please let device positive (red wire) is connected to the battery's positive (red wire), device negative (black wire) is connected to the battery negative (black wire).



8. How to operate it:

Note:

① The default password is 000000, you should change the password when use the device.

Change user's password: W000000,001,*****

(000000 is old password; *****is new password)

Password should be 6 numbers.

② All Command Letter must be capital letters.

8.1 Arm / Disarm by phone calling

User could also use the alarm-received mobile phone to call the tracker's SIM card number, so as to Arm/Disarm the system.

Arm: After hearing several ring tones, if the system hangs up the call automatically, and call back you, it means that the system is armed.

Disarm: After hearing several ting tones, if the system hangs up the call automatically, and don't call back you, it means that the system is disarmed.

Note:

- (1) There is no communication fee for this operation, it is a very convenient way to arm & disarm the system.
- (2) The SIM card inside the device must have the function of caller ID display.
- (3) Only the Alarm-received mobile phone can realize this function.

8.2 Arm / Disarm the system by SMS

SMS command: **000000ARM**

This SMS instruction is used to arm the system;

When the system is armed, the movement alert is activated automatically. When the motorcycle / car moves, the alarm will be triggered.

SMS command: **000000DSM**

This command is used to disarm the system & stop sending alert SMS.

8.3 Check the location by Google map's URL

SMS command: **000000MAP**

Upon receiving the SMS command, the tracker will automatically send back the SMS including the Google map's URL, user an use smart phone (GPRS data service is enabled) to open the URL, the car's location will be showed on the Google map.



8.4 Authorize the alarm-received mobile

SMS command: **W***** ,003,F,P,<Mobile number>**

*****is the user password, default one is 000000.

(F=0, to turn off this function; F=1, to send alert SMS)

(P=1, the first phone; P=2, the second phone; P=3, the third phone)

In case of alert, the alarm SMS will be sent to this preset mobile number automatically.

Example: W000000,003,1,1,13800138000 to the tracker's SIM card number, if there is any alert, system will send alert SMS to the first mobile 13800138000

8.5 Change user password

SMS command: **W<000000>,001,#####**

<000000>is old password,##### is new password, default one is 000000

The length of the user's password is 6 digits. Users are suggested to change to the new password in use.

Example: W000000,001,123456

8.6 Check the real physical address

SMS command: **000000ADD**

W000000,111

When user sends this SMS command to the tracker, the tracker will automatically send back the car's real physical address (such as city name, street name) to your mobile by SMS. There is no need for the user to setup any server, but it needs supports from our GPRS01 server.

Remark:

- (1) The GPRS data service of the tracker's SIM card must be activated, and the correct GPRS setting is needed (refer to the chapter of the setting of GPRS

connection), user can set up the GPRS upload time interval to 0 so as to save the GPRS flow;

- (2) The physical address depends on the Google map's address information. If the place has very detailed information on Google map, then the physical address by SMS is very detailed.

8.7 Check the GPS coordinates by SMS

SMS command: **000000CHK**

This instruction is used to inquiry the vehicle's location & system's status. The system will send back the SMS, includes the similar information, such as "System is Armed..."

8.8 Stop the car by SMS

SMS command: **000000STP**

This instruction is used to cut off the power supply or fuel supply so as to stop the motorcycle/car immediately.

Attention: It is very dangerous to stop the car when the vehicle is running at high speed. We do not take any responsibility to the consequence caused by this action.


8.9 Restore the stopped car to normal status

SMS command: **000000RES**

This instruction is used to restore the car to normal status after stopping the car.

Note: More SMS Commands, please check Appendix 2: Command List

9. MT02 optional Accessories

Optional Accessories	Image	Function
USB Configure Cable		<p>Configure tracker's parameter</p> <p>Upgrading the tracker's firmware</p>

10. Troubleshooting

Problem: Unit can not turn on	
Possible Cause:	Resolution:
Wiring was not connected properly	Check and make sure wiring connection is in order.
Battery needs charging	Recharge battery
Problem: Unit can not respond to SMS	
Possible Cause:	Resolution:
GSM antenna was not installed properly	Make MT02 connected to GSM.
GSM Network is slow	<p>Wait for SMS. Some GSM networks slow down during peak times or when they have equipment problems.</p>
Wrong password in your SMS	Insert the correct password
The SIM in MT02 has run out of credit	Replace or top up the SIM card
No SIM card	Insert working SIM card. Check in phone

	that the SIM can send SMS messages.
SIM card has expired	Check in phone that the SIM can send SMS messages. 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
Problem: SMS from MT02 states 'Last.....'	
Possible Cause:	Resolution:
Unit does not have clear view of the sky	Move the tracker to a place where the sky is visible.
MT02 is in an inner place	Wait for the target to come out

11. Command List

Description	Command	Remarks
Get current location	W*****,000	Get current location of MT02
Get location in Google map URL	W*****,100	http://maps.google.com/maps?f=q&hl=en&q=22.542563

format via SMS		,114.077971&ie=UTF8&z=16&iwloc=addr&om=1
Change user's password	W*****,001,#####	***** is old password ##### is new password
Set interval for automatic timed reports	W*****,002,XXX	XXX is the interval in minute. If XXX=000 it will stop tracking
Set preset phone number for SOS button	W*****,003,F,P,T1,T2	F=0, to disable this function; F=1, only sending SMS; F=2, only calling preset phone number; F=3, both SMS and calling (default) P is the button number and should be 1, or 2, or 3. If SOS button is linked to IN1, then P=1. T: Preset phone number (T must be less than 16 digits) T1: When no T2, T1 for short message number or dial the number; when have T2, T1 for message number. T2: for dial the number.
Set over speed alarm When MT02 speeds higher than the preset value, it will send one over speed alarm SMS to the SOS preset	W*****,005,XX	XX (the speed preset value) =00 , disable =[01<XX<20] (unit: 10Km)

number.		
<p>Set Geo-fence alarm (foursquare)</p> <p>When the MT02 moves out of preset scope, it will send one Geo-fence SMS to the SOS preset number.</p>	W*****,006,XX	<p>XX (set distance from current central point place)</p> <p>=00, disable</p> <p>=01, 30m</p> <p>=02, 50m</p> <p>=03, 100m</p> <p>=04, 200m</p> <p>=05, 300m</p> <p>=06, 500m</p> <p>=07, 1000m</p> <p>=08, 2000m</p>
Extend Settings	W*****,008,ABCDEF GHIJ###	<p>A=0, disable position report function when a call is made to MT02</p> <p>A=1, enable position report function to get position SMS by Calling MT02</p> <p>I=0, disable power failure alert</p> <p>I=1, enable power failure alert</p> <p>The functions of BCDEFGHJ are remained for further use.</p> <p>### is the ending character.</p>
<p>Set Geo-fence alarm</p> <p>017 command is for alarm when tracker moves out the preset scope;</p> <p>117 command is</p>	<p>W*****,017,data</p> <p>W*****,117,data</p>	<p>data is the coordinates which include:</p> <p>Lower-left X, Lower-left Y,Upper-right X,Upper-right Y</p> <p>For example, 11404.0000,E,2232.0010,N,11505.1234,E,2333.5678,N</p> <p>Note:</p>

<p>for alarm when tracker moves in.</p> <p>When the tracker moves in or out, it will send an SMS alarm to the authorized phone number for SOS.</p>		<ol style="list-style-type: none"> 1. Lower-left X,Y (longitude and latitude) should be smaller than Upper-right X,Y; 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. Send W*****,017 or W*****,117 without data to disable this function.
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Presetting by SMS for GPRS tracking		
Set ID for MT02 by SMS	W*****,010,ID	Tracker ID must be less than 14 digits
Set APN by SMS	W*****,011,APN,APN Name, APN Password	<p>APN Name, APN Password If no password required, just insert APN name only;</p> <p>APN defaulted as 'CMNET';</p> <p>APN name + password not over 39 characters.</p>
Set IP Address and Port by SMS	W*****,012,IP, Port	<p>IP: xxx.xxx.xxx.xxx</p> <p>Port: [1,65536]</p>
Enable GPRS Function	W*****,013,X	X=0, close GPRS

		(default); X=1, enable TCP X=2, enable UDP
Set Time Interval for Sending GPRS Packet	W*****,014,XXXXX	XXXXX should be in five digitals and in unit of 10 seconds. XXXXX=00000,to disable this function; XXXXX=00001~65535, time interval for sending GPRS packet and in unit of 10 seconds.
Output Control	W*****,020,P,F	P =1, Out1 =2, Out2 =3, Out3 =4, Out4 =5, Out5 F =0, to disable the output =1, to enable the output
Output Control (Safe mode) This function is achievable when the speed is below 10km/h and GPS is available.	W*****,120,ABCDE	ABCDE represents Out1, Out2, Out3, Out4, Out5 respectively. If A or B or C or D or E, =0, to disable the output =1, to enable the output =2, to remain previous status
Set time zone difference	W*****,032,T	T=0, to disable this function

		<p>T=[1, 65535] to set time difference in minutes to GMT.</p> <p>Default value is GMT</p> <p>+, not necessary for those ahead of GMT. For example, either +120 or 120 is acceptable.</p> <p>-, required for those behind GMT. For example, -120.</p>
Set tracking by driving angle change function	W*****,036,Degree	<p>Measured by Degree(s), Degree=0,disable this function ; X=1-359 , means set angle degree interval in this function.</p>
Set tracking by distance function	W*****,045,X	<p>Measured by Meter(s), X=0, disable this function: X=1—65535 , means the distance interval in this function.</p>
Set clear/reset odometer function	W*****,046	<p>To clear and reset odometer information to zero.</p>
Set function of receiving location physical address name via SMS	W*****,111	<p>This function need support of the GPRS01 or SMS01 tracking platform, address SMS will be received in text format.</p>
Get version and serial number	W*****,600	<p>To get version and serial number of</p>

		current firmware
Get IMEI No.	W*****,601	To get device IMEI No.
Reboot GPS and GSM Module	W*****,900###	### is the ending character.
Initialization To turn all the parameters / settings (except for the password) to factory default.	W*****,990,099###	### is the ending character.
Password Initialization	W888888,999,666	This command will reset the current password to factory default password 000000