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MEITRACK® MT90



User Guide



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2. Applications

- Personal Tracking and Protection
- Pet Tracking
- Assets Tracking and Security
- Vehicle Tracking

3. Product Function and Specifications

3.1 Product Function

- SiRF III GPS and Quad Band GSM 850/900/1800/1900Mhz
 - Small in size (77mm x 47mm x 20mm) and lightweight (65g)
 - Waterproof IP66
 - Low Power Consumption and Long Standby Time
 - GPS and GSM base station of bi-module positioning
 - Track by SMS/GPRS (MEITRACK Protocol)
 - Track on Demand
 - Track by Time Interval
 - Track by Distance Interval
 - Track on Mobile Phone
 - Listen-in (Voice Monitoring)
 - Internal 4MB Memory for Logging
 - Inbuilt Motion Sensor
 - Inbuilt Battery
 - SOS Alarm
 - Geo-fence Alarm
 - GPS Fake Zone Alarm
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- Low Battery Alarm
- Speeding Alarm
- Mileage Report

3.2 Specifications

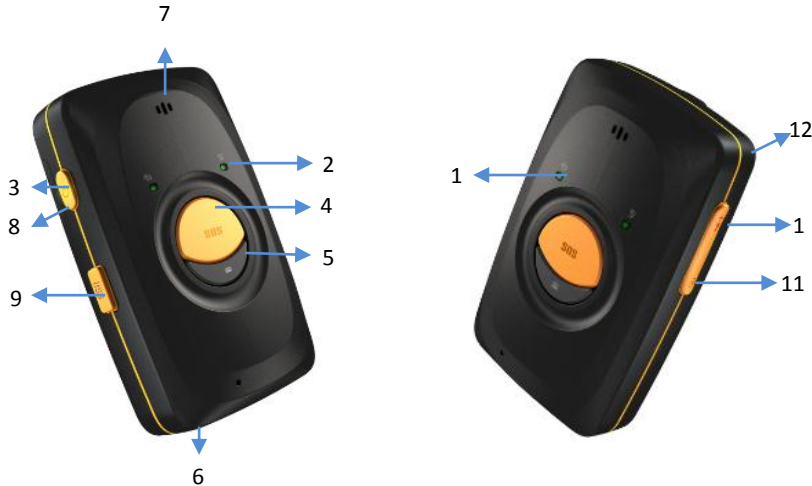
Items	Specification
Dimension	77 x 47 x 20mm
Weight	65g
Charging Voltage	Mini USB charging interface, DC4.2V~5.5V/400mA
Back-up Battery	950mAh/3.7V rechargeable and replaceable lithium-ion battery(NokiaBL-5C compatible)
Power Consumption	65mA standby current
Operating Temperature	-20°C~55°C
Humidity	5%~95%
Work Time	80 hours in power-saving mode and 10 hours in normal mode
LED	3 LED lights to show power, GPS, GSM and otherstatus
Button	5 buttons for making phone call and sending SMS
Microphone/Speaker	Internal microphone and speaker
Memory	4MB Byte
Sensor	Accelerometer
GSM Frequency	GSM850/900/1800/1900MHz
GPS Chip	Latest GPS SIRF-Star III chipset
GPS Sensitivity	-159dB
Positioning Accuracy	10 meters, 2D RMS

4. MT90 and Accessories

- MT90 main unit
 - A Battery
 - USB data cable
 - Travel charger
 - Car charger
 - CD
-

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5. View



No.	Item	Description
1	GPS LED (Blue)	Indicating GPS status, please refer to “6.3” for more details.
2	GSM LED (Green)	Indicating GSM status, please refer to “6.3” for more details.
3	Power LED(Red)	Indicating the status of charging, lower power, working, sleep mode and power off.
4	SOS Button	Long press for 2 seconds, MT90 will dial 3 preauthorized phone numbers in turn. It will stop dialing when one number answers. Meanwhile, MT90 will send an SMS to the preauthorized phone number and send GPRS message to the server if GPRS function is enabled. Press to wake up if MT90 is in sleep mode.
5	Answer/Hand-up Button	Press to receive an incoming call. Press to complete a conversation. Long press for 2 seconds to send GPRS message to the server when no incoming call or conversation.
6	Microphone	It will run automatically when using listen-in and call functions.
7	Speaker	It will run automatically when using call function.
8	Power On/Off Button	Long press for 2 seconds to turn on MT90. Long press for 2 seconds to turn off MT90. Press to wake MT90 up from sleep mode, power LED will slowly flash for 10 seconds.
9	Mini USB	Mini USB is used for charging, connecting to computer for setting up parameters, updating software and so on.
10	Volume+/Logger Button	Long press to turn up the volume. Long press for 2 seconds to start hands-free conversation. In standby mode, long press for 2 seconds, when the buffer “BI” once, the logger will run automatically. (MT90 will log the route every 30 seconds automatically. Route record can be exported with the computer.



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		Long press for 2 seconds again, when the buffer “BI” twice, and the logger will stop automatically.
11	Volume-/GPRS Button	Long press to turn up the volume. In standby mode, long press for 2 seconds, when the buffer “BI” once, GPRS function will be enabled automatically. (Precondition: GPRS parameter must be set in advance, default GPRS message interval is 10 minutes) Long press for seconds again, when the buffer “BI” twice, GPRS function will be disabled automatically.
12	Lanyard Loop	For connecting lanyard.

6. First Use

6.1 Install SIM Card

Ensure that your MT90 has a working SIM card installed.

Make sure the SIM card has enough balance (it’s available to phone and SMS test).

Make sure the SIM coded lock is turned off

If you need to use the authorized number to call MT90, please make sure the SIM has the caller ID display function.

Please power off the MT90 before inserting the SIM card.

Take out the battery and insert a SIM card then reinstall battery and back cover.

6.2 Charging

Please make sure to charge the battery for at least 3 hours. 8 hours is highly appreciated.

6.3 LED Indications

Long press the switch for 3~5 seconds to turn on/offMT90

Power LED(Red)	
On	Charging
Flashing every 5 seconds	Low battery
Flashing(1 second on and 1 seconds off)	Press any one button to wake up MT90, this status will last for 10 seconds.
Off	Working or sleeping or power off
GPS LED (Blue)	
Flashing (every 5 seconds)	Sleeping
Flashing(1 second on and 1 seconds off)	No GPS fix or initializing
Off	GPS fix

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GSM LED (Green)	
On	A call is coming in or busy
Flashing (every 5 seconds)	Sleeping
Flashing(1 second on and 1 seconds off)	No signal
Off	MT90 is connected to the GSM network

6.4 Track by Calling

Make a call to MT90 and it will report with one SMS.

For example,

Now,110727 02:48,V,16,23Km/h,61%,<http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329&ie=UTF8&z=16&iwloc=addr&om=1>



Click on the link then the location can be shown directly on Google Maps on your mobile phone.

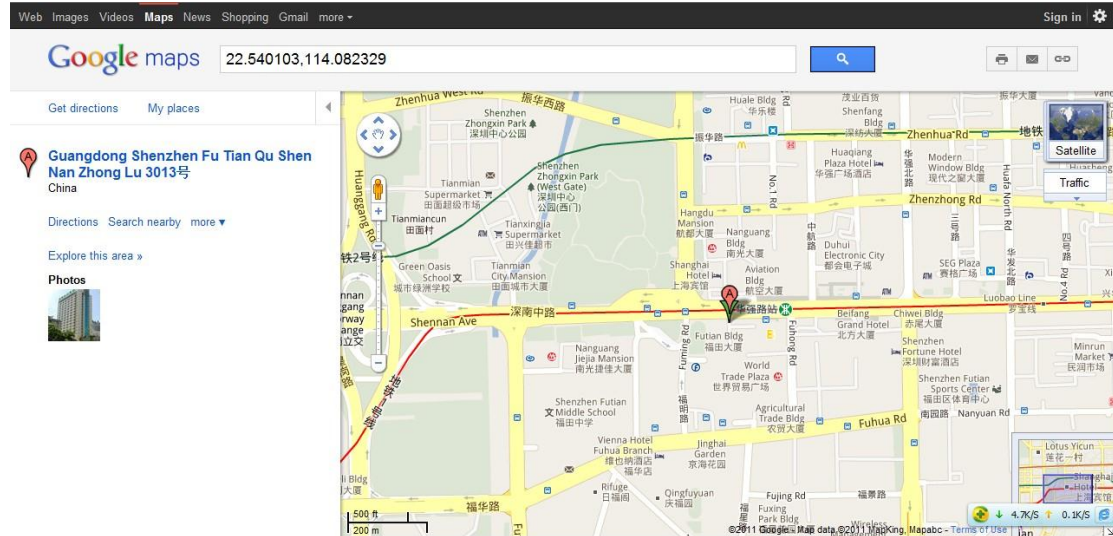
Report description:

Now,110727 02:48,V,16,23Km/h,61%,<http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329&ie=UTF8&z=16&iwloc=addr&om=1>

Content	Description	Note
Now	Current Location	Alarm Type
110721 16:40	Date & Time: 21 July, 2011, 16:40pm	Date & Time in YYMMDD HH:MM
V	No GPS fixed	GPS Status Indicator: A = valid, V = invalid
10	GSM signal=10	GSM Signal. Decimal Digit (0~31)
0Km/h	Speed=0	KM/h. Decimal digit
97%	Battery Power: 97%	Battery Power Balance (Percentage)
http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329&ie=UTF8&z=16&iwloc=addr&om=1	Latitude: 22.513015 Longitude: 114.057235	Google Maps Web Link with Latitude and Longitude. Click on the link to get the location.

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If your mobile cannot visit HTTP websites, input the latitude and longitude into Google Maps as the following picture shows to get the position:



More SMS commands

You can configure MT90 by mobile phone or by computer using the MEITRACK Parameter Editor.

For more details, please refer to part 6.5, **Configure by Computer**.

Note:

1. Password is 4 digits only and defaulted as 0000. You can change the password by Parameter Editor and SMS command.
2. MT90 will only accept commands from a user with the correct password and report SMS report to the user. If preauthorized phone number was set, only this phone number can receive SMS reports.

6.4.1 Multiple Phone numbers– A71

Command: 0000, A71, phone number 1, phone number 2, phone number 3

SMS Get: IMEI, A71, OK

Note:

Authorize a phone number for SOS alarm, calling for location report, geo-fence alarm, and low battery alarm.

Phone Number: Max 16 characters.

If no preset phone number, it is empty (default is empty).

Send command “0000, A71” to delete all phone numbers.

When the SOS button is pressed, MT90 will make a call to phone number 1, 2 and 3. It will stop calling when one number answers.

Example: 0000,A71,13811111111,13822222222,13833333333

SMS Get: 353358017784062,A71,OK

6.4.2 Listening-in (Voice Monitoring) – A72

Command: 0000, A72, phone number 1, phone number 2

SMS Get: IMEI, A72, OK



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Note:

Authorize a phone number to make a silent call to the tracker. The tracker will answer the call automatically and allows the caller to listen to what is happening around the tracker. There is no sound when the tracker is working.

Phone Number: 2 monitoring numbers at the most can be set, 16 characters per number.

If no preset phone number, it is empty (default).

If no phone number, but has “,”, the number related to this “,” is deleted.

Send command “0000,A72” to delete all phone numbers.

Example: 0000,A72,13844444444,13855555555

SMS Get: 353358017784062,A72,OK

6.4.3 Sleep Mode– A73

Command: 0000,A73, X

SMS Get: IMEI,A73,OK

Note:

This setting is for power saving.

X= 0, turn off sleep mode (default).

X=1, normal sleep.

X=2, deep sleep.

Example: 0000,A73,2

SMS Get: 353358017784062,A73,OK

6.4.4 Time Zone – B35

Command: 0000,B35,T

SMS Get: IMEI,B35,OK

Note:

Default time of the tracker is GMT. You can use this command to change the time on your tracker to your local time. This command is for SMS tracking only.

Time zone of SMS report is separated with that of GPRS data. If you need to set the time zone in GPRS data, please use SMS command: 0000, B36, T

T=0, to turn off this function.

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

For those ahead of GMT, just input the time difference in minutes directly. For example, GMT+8, W000000,032,480

‘-’ is required for those behind GMT. For example, W000000,032,-120.

Example: 0000,B35,480

SMS Get: 353358017784062,B35,OK

For more details regarding SMS commands, please refer to MEITRACK SMS Protocol.

6.5 Configure by Computer

This part mainly shows you how to use the **MEITRACK Parameter Editor**.

Please refer to the **MEITRACK Parameter Editor User Guide** for more information regarding configuration and

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functions.

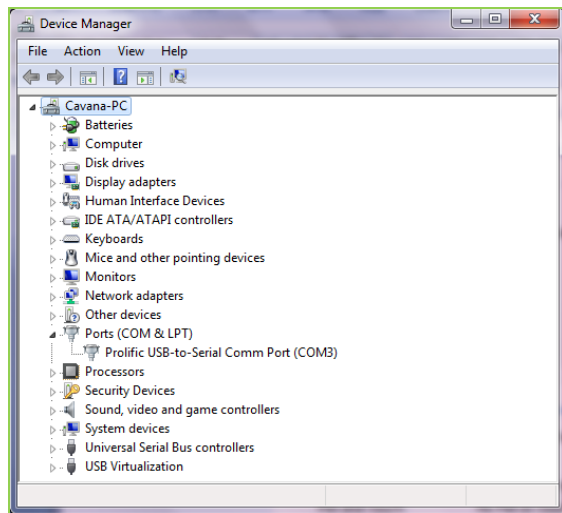
Run 'PL2303_Prolific_DriverInstaller' to install the driver for the USB data cable.

Note: PL2303_Prolific_DriverInstaller is in the folder 'USB-232 Driver' in the CD.

Connect the USB Data Cable between MT90 and PC.



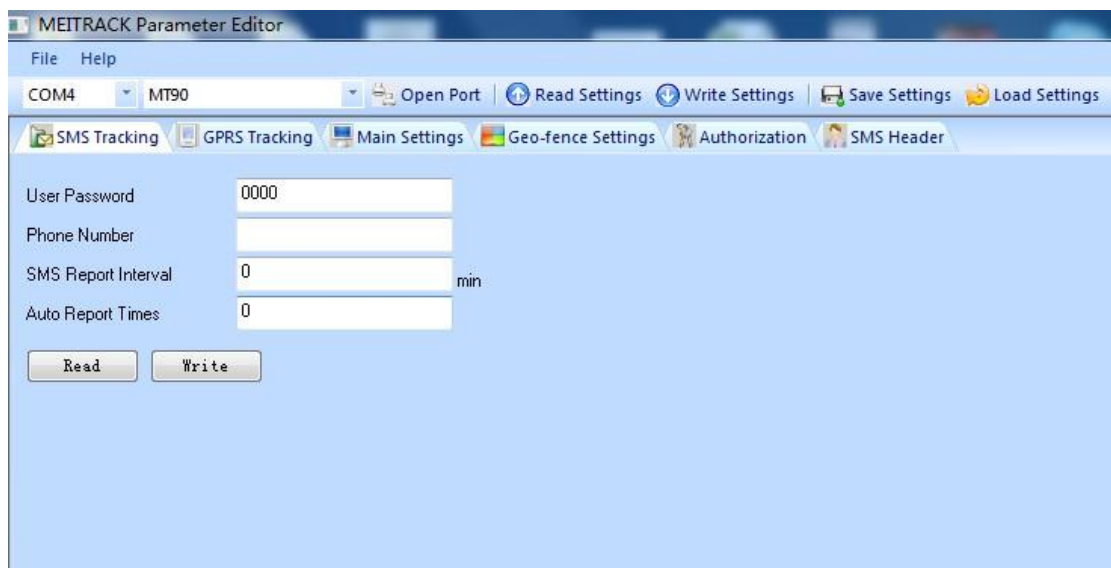
Open Device Manager (Device Manager is under Control Panel\System and Security\System). You can then find 'Prolific USB-to-Serial Comm Port' as the following picture shows.



Note: Remember this Com number. It needs to be input into the MEITRACK Parameter Editor. It is COM3 in this example and it would be COM4 or COM5 in your computer.

Run 'MEITRACK Parameter Editor.exe' and the following configuration window will pop up:

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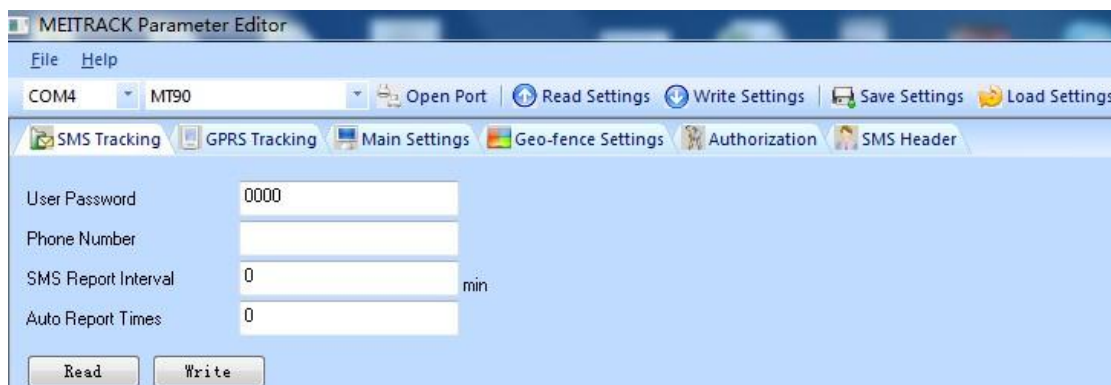
Choose the correct Com number and terminal type in previous Device Manager then click the 'Open Port' button. Click 'Read Settings' button to show the default or previous settings of the tracker.

Note: MEITRACK Parameter Editor is in the CD. The language will be automatically adjusted to be the same as your PC operation system's language. Please use "Ctrl+L" to change the language.

6.5.1 SMS Tracking

6.5.1.1 Track by Preset Interval

Click Tap I: SMS Tracking



Items	Descriptions
User Password	The defaulted value 0000 of SMS password for sending SMS commands
Phone Number	A phone number to receive SMS location reports.
SMS Report Interval	Track by time interval via SMS. Set time interval for SMS location report. =0, stop tracking by time interval (default); =[1,65535], track by interval in minute.
Auto Report Times	= 0, unlimited times for report.

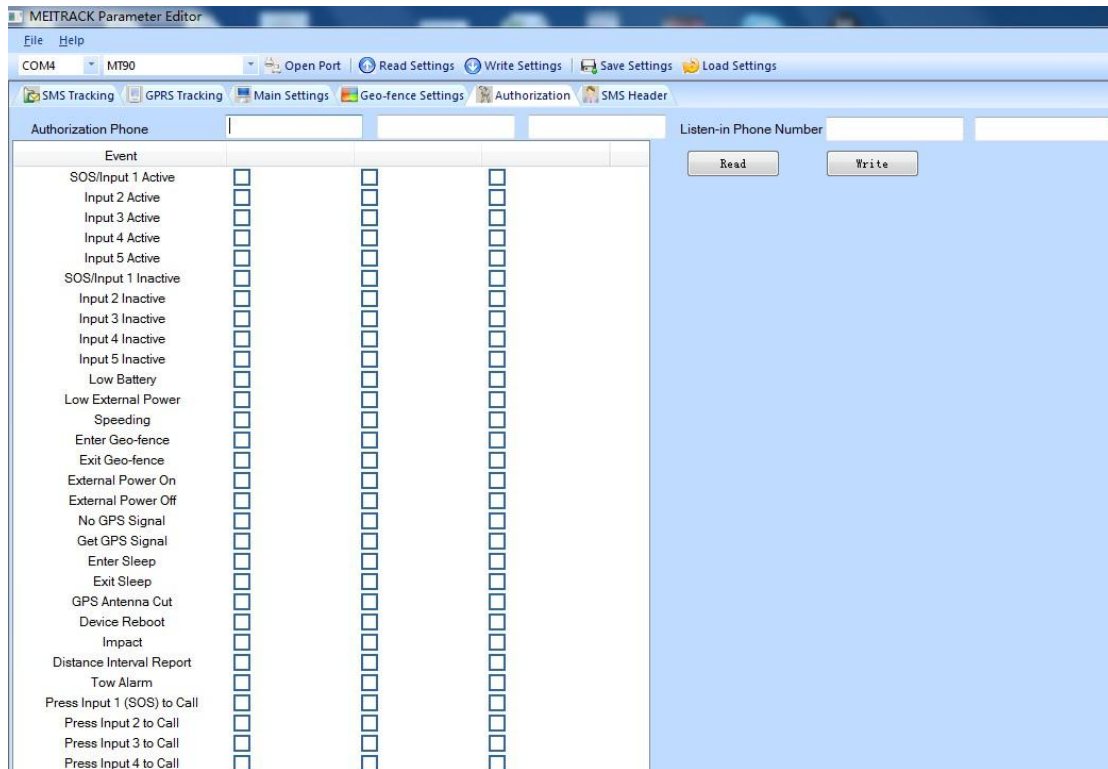


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	= [1,255], it will stop reporting when reaching preset times
Read	Read current tracker's settings for above items.
Write	Write above settings to the tracker.

6.5.1.2 SMS Report

Click Tap V: Authorization



Items	Descriptions
Authorization Phone	A phone number to receive selected event's SMS reports.
Event	Selected event's SMS reports will be sent to authorize phone number. For more details, please refer to MEITRACK GPRS/SMS Protocol. For description of events from SOS/Input 1 Active to Tow Alarm, please refer to tap II GPRS Tracking . Other events description, please refer to below chart.
Read	Read current tracker's settings for above items.
Write	Write above settings to the tracker.

Event Descriptions:

Events	Descriptions (If the box is ticked, authorized phone number will get event report by SMS or calling)
SOS/Input 1 Active	Report when input1 (SOS) is pressed.
SOS/Input1 Inactive	Report when input 1 inactive (SOS released).



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Low Battery	Report when backup battery's voltage is below 3.5V.
Speeding	Report when MT90 speeds higher than the pre-set value. Value can be changed on tap III Main Settings
Enter Geo-fence	Report when MT90 enters Geo-fence.
Exit Geo-fence	Report when MT90 exits Geo-fence. Geo-fence can be changed on tap III Main Settings .
No GPS Signal	Report when MT90 enters GPS fake zone or no GPS signal.
Get GPS Signal	Report when MT90 exits GPS fake zone or get GPS signal.
Enter Sleep	Report when MT90 enters sleep mode.
Exit Sleep	Report when MT90 exits sleep mode. Sleep mode can be changed on tap III Main Settings .
GPS Antenna Cut	Report when GPS antenna has been disconnected.
Heartbeat Report	Enable heartbeat report. Heartbeat interval can be changed on tap III Main Settings .
Heading Change Report	Report when the heading direction of MT90 changes over the pre-set degree. Degree can be changed on tap III Main Settings .
Device Reboot	Report when MT90 reboot.
Impact	Report when MT90 detects an impact (inbuilt impact sensor).
Distance Interval Report	Track by distance. Interval can be changed on tap III Main Settings .
Tow Alarm	Report when MT90 moves or trembles over pre-set time. Time can be changed on tap III Main Settings .
Press Input 1 (SOS) to call	Make call to authorized phone number when press input 1 (SOS).
Reject Incoming Call	Hang up automatically when an incoming call is received from correspondent authorized phone number.
Call for SMS Location Report	Reject incoming call or report SMS location when no answer.
Auto Answer Incoming Call	Auto answers incoming call and enables two-way audio.
Listen-in (Voice Monitoring)	Auto answers incoming call and enables listening-in (voice monitoring).

6.5.2 GPRS Tracking

Click Tap II: GPRS Tracking



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Items	Descriptions
GPRS	Select TCP/UDP to enable GPRS communication.
GPRS Interval	Track by time interval via GPRS. Set time interval for GPRS tracking. Interval is in unit of 10 seconds. Interval = 0, stop tracking by time interval. Max time interval = 65535*10 seconds
GPRS Report Times	= 0, report without limit. = [1,65535], set report times, MT90 will stop reporting when reaching the preset times.
IP & Port	Input server's IP address and port number.
Secondary IP and Port (Backup Server)	Input backup server's IP address and port number to avoid losing data when main server is down. The backup server will receive data automatically.
APN APN user name APN password	APN, APN username, APN password: max 32 bytes. If no username and password required, leave them blank.
Tracker ID	MT90's IMEI. It is the only ID in GPRS packet.
Read	Read current tracker's settings for above items.



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Write	Write above settings to the tracker.
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Tick the box for receiving GPRS report.

Events	Descriptions (If the box is ticked, the server will get event report by GPRS)
SOS/Input 1 Active	Report when input1 (SOS) is pressed.
SOS/Input1 Inactive	Report when input 1 inactive (SOS released).
Low Battery	Report when backup battery's voltage is below 3.5V.
Speeding	Report when MT90 speeds higher than the pre-set value. Value can be changed on tap III Main Settings
Enter Geo-fence	Report when MT90 enters Geo-fence.
Exit Geo-fence	Report when MT90 exits Geo-fence. Geo-fence can be changed on tap III Main Settings .
No GPS Signal	Report when MT90 enters GPS blind area or no GPS signal.
Get GPS Signal	Report when MT90 exits GPS blind area or get GPS signal.
Enter Sleep	Report when MT90 enters sleep mode.
Exit Sleep	Report when MT90 exits sleep mode. Sleep mode can be changed on tap III Main Settings .
GPS Antenna Cut	Report when GPS antenna is disconnected.
Heartbeat Report	Enable heartbeat report. Heartbeat interval can be changed on tap III Main Settings .
Heading Change Report	Report when the heading direction of MT90 changes over the pre-set degree. Degree can be changed on tap III Main Settings .
Device Reboot	Report when MT90 reboots.
Impact	Report when MT90 detects an impact (inbuilt impact sensor).
Distance Interval Report	Track by distance. Interval can be changed on tap III Main Settings .
Tow Alarm	Report when MT90 moves or trembles over pre-set time. Time can be changed on tap III Main Settings .

For more information about GPRS settings, please refer to MEITRACK SMS/GPRS Protocol.

Please do not hesitate to email us at info@meitrack.com if you have any questions.