MEITRACKMT90GUser Guide

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Product name .....:	GPS Tracker
Model and/or type reference .....:	MT90G

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Contents

1 Copyright and Disclaimer

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2 Product Overview

The MT90G, a personal tracking device, is specially designed for the elderly, children, pets, and lone workers. It has the following functions:

- Two-way calling
- SOS alarm in case of emergency.
- Low power consumption and long standby time
- Polygongeo-fence alarm
- Man down alarm

3 Product Function and Specifications

3.1 Product Function

3.1.1 PositionTracking

- GPS&Base Station dual-module tracking
- Real-time location query
- Trackby time interval
- Track by distance
- Track by mobile phone
- Speeding alarm
- Directionchange report

3.1.2 Emergency Alarm

SOS alarm

3.1.3 Other Functions

- SMS/GPRS/HSPA+ (TCP/UDP) communication (Meitrack protocol)
- GPS blind spot alarm
- Support Over-the-Air (OTA)
- Low battery alarm
- 3D shake wakeup

- Listen-in/Two-way calling
- Polygon geo-fence
- Stillness/movement alarm
- Online Parameter Editor
- Super long battery life

3.2 Specifications

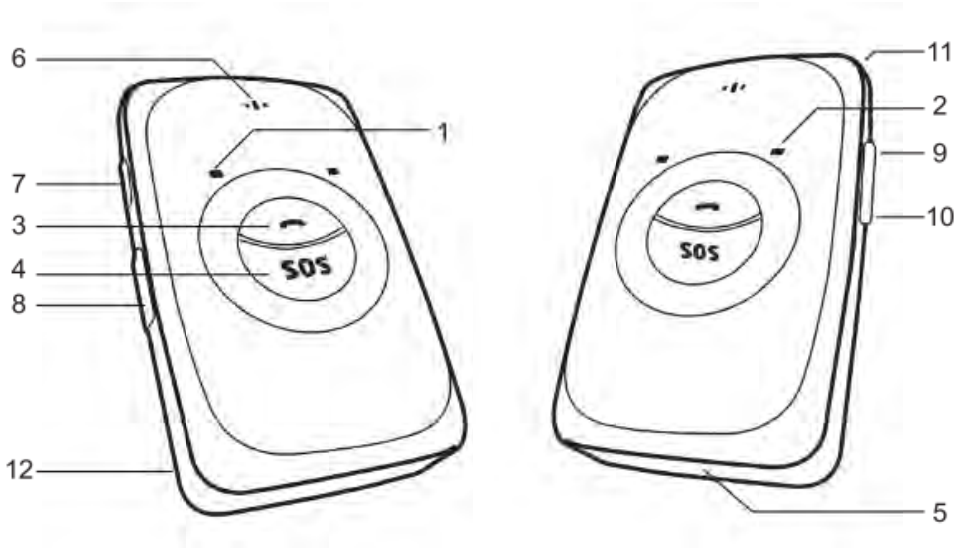
Item	Specifications	Remarks
Dimension	77 mm x 47 mm x 20mm	
Weight	76g	
Charging voltage	Micro USB charging port, DC4.2V–5.5V/500mA	
Standby battery	1100mAh/3.7Vrechargeable and replaceable lithium-ion battery (Nokia BL-5C compatible)	
Power consumption	60 mA standby current and 5 mA deep sleep	For details about the sleep function, see section 7.4 "Smart Sleep– A73."
Operating temperature	-20°Cto 55°C	Ensure thatthe device can work properly in this environment.
Operating humidity	5%–90%	Ensure thatthe device can work properly in this environment.
Working hour	180 hours in power-saving mode and 20 hours in normal mode (Location/10min.)	
LED indicator	2 indicators showing power, GSM, and GPS status	For details, see section 5.2 "LED Indicator."
Button/Switch	5 buttons/switches	Fordetails, see section 5.1 "Appearance."
Microphone/Loudspeaker	Internal microphone and loudspeaker	Used for two-way calling and listen-in.
Memory	8MBbyte (130,000GPS Logs, 8,000 GPRS/HSPA+ cache, and 256 SMS cache)	GPS log: Read via a PC only GPRS/HSPA+ and SMS: Data will be uploaded automatically after the signal recovers.
Sensor	3D acceleration sensor	Determine movement, stillness, and vibration.
GSM frequency band	850/900/1800/1900MHz	Quad-Band
WCDMA frequency band	MT90G-E(900/2100MHz) MT90G-A(850/1900MHz) MT90G-AU(850/900/2100MHz) MT90G-JP(800/2100MHz) MT90G(800/850/900/1900/2100MHz)	MT90G-E(Europe and Asia) MT90G-A(America) MT90G-AU(Australia only) MT90G-JP(Japan only) MT90G(Five Band)
Positioning accuracy	5M	Open Sky

4 MT90Gand Accessories

- MT90G tracker
- A battery
- USB cable
- Travel adapter (charger)
- Screwdriver
- CDand MEITRACKMT90GQuick Start Guide
- Lanyard

5 About the MT90G

5.1 Appearance



No.	Item	Description
1	GPSindicator (blue)	Indicates GPS and battery status. For details, see the section 5.2 "LED Indicator."
2	WCDMA/GSM indicator (green)	Indicates WCDMA/GSM status. For details, see the section 5.2 "LED Indicator."
3	Answer/Hang-up button	● Shortly press the button to receive an incoming call. ● Shortly pressthe button to terminatethe call. ● Pressand hold down the button for 2 seconds to send aGPRS/HSPA+ message to the server when no incoming call or conversation is received.In this way, the device will sound“BI” onceand vibration occurs.
4	SOSbutton	● Press and hold down the button for 2s in the case of emergency. The device will sound "BI" onceand vibration occurs. The device will also dial three authorized phone numbers in sequence. It will stop dialing when one phone number answers. Meanwhile, the device will send an SMS with positioning informationto authorized phone numbers. If the

		GPRS/HSPA+ function is enabled, the device will send a GPRS/HSPA+ message to the server. ● Shortly press the button to wake the device up if thedevice is in sleep mode.
5	Microphone	It will run automatically when the listen-in and call functions are used.
6	Loudspeaker	It will run automatically whenthe call function is used.
7	Power on/off button	● Pressand hold down the button for 2 seconds to turn on the MT90G.It will make a sound and vibration occurs. ● Press and hold down the buttonfor 2 seconds to turn off the MT90G.It will make a sound. ● Shortly press the button to wake the MT90G up from sleep mode. The power indicator will blink for 10s.
8	MicroUSB port	Used for charging, parameter settings, and software upgrading.
9	Volume+/GPS Log button	● Press the button to turn up the volume. ● Press and hold down the button for 2 seconds to start hands-free conversation. ● In standby mode, press and hold down the button for 2 seconds, when the buzzersounds “BI” once, the recorder will run automatically. (The MT90G will record the route every 30 seconds automatically when a GPS signal can be received. Route records can be exported by usinga computer. ● Press and hold down the button for 2 seconds again, when the buzzer sounds “BI” twice, and the recorder will stop automatically. Note: To avoid misoperations, you can disable theGPS Logbutton by using Meitrack Manager (default: valid).
10	Volume-/GPRS/HSPA+button	● Press the button to turn down the volume. ● In standby mode, press and hold down the button for 2 seconds, when the buzzer sounds “BI” once, the GPRS/HSPA+ function will be enabled automatically. (Precondition: GPRS/HSPA+ parametershave been set, and the default GPRS/HSPA+ message interval has beenset to 10 minutes.) ● Press and hold down the button for 2 seconds again, when the buzzer sounds “BI” twice, the GPRS/HSPA+ function will be disabled automatically. Note: To avoid misoperations, you can disable theGPRS/HSPA+buttonby using Meitrack Manager (default: invalid).
11	Lanyard hole	Placethe lanyard through the hole.
12	Battery cover	After removing the battery cover, install thebattery and SIM card.

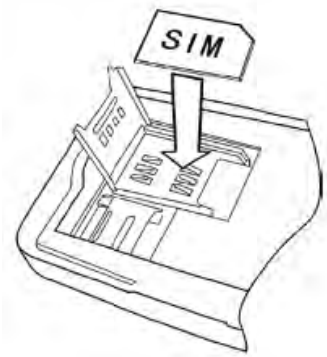
5.2 LED Indicator

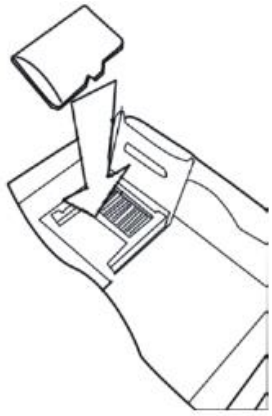
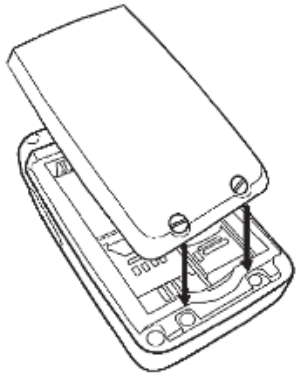
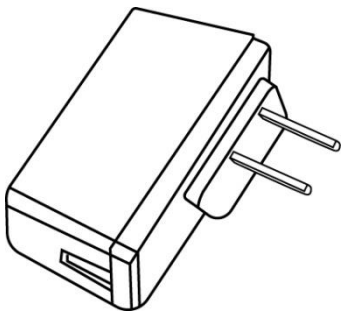
To start theMT90G, press and hold down the powerbutton for 3 to 5 seconds. The blue and green indicators blink on for 1s and blink off for 1s simultaneously.

GPS Indicator (Blue)

Status	Description
Steady on	The MT90G is charging.
Blink every 5s	The MT90G is in sleep mode.
1s on and 1s off	The GPS is invalid or the MT90Gis initializing.
Off	The GPS is valid.
0.3s on and 0.3s off	The MT90G has low power.
WCDMA/GSM Indicator (Green)	
Status	**Description**
Steady on	A call is coming in or busy.
Blink every 5s	The MT90G is in sleep mode.
1s on and 1s off	No signal is received, or theMT90G is initializing.
Off	The MT90G is connected to the WCDMA/GSM network.

6 First Use

	1. Remove the battery cover. Turn off the device. With the back panel facing you, use the mini screwdriver to remove the two screws to release the back cover. Then lift up the back cover from the notch at the bottom of the device.
	2. Insert the SIM card. Gently pushthe SIM card into the card slot until you hear a clickwith the gold-plated contacts facing down. Note: Ensure thattheSIMPIN lock is closed properly, and the SIM card has sufficientbalance and has subscribed the call ID service. If you want touse the GPRS/HSPA+ function, learn aboutthe SIM card GPRS/HSPA+ charging first.

	3. This operation is only for customers in China.
	4. Install the battery. Insert the contacts side of the battery first and then gently push the battery cover downward until it locks into place. Then fasten the two screws on the back cover.
	5. Charge the battery. To charge the battery, connect the device to the wall charger or a computer through the USB cable. When you use the device for the first time, you are advised to turn off the device and then charge the battery for 8 hours. Note: Do not remove the battery unless necessary during charging. While charging, the device may heat up. This is normal and does not affect your device's lifespan or performance. If the battery is low, it may affect positioning and data transmission. So you need to charge the battery before using.
	Charge with the travel adapter: Open the cover of the multifunctional jack of the device. Plug the small end of the adapter into the multifunctional jack. Then plug the larger end of the travel adapter into a power outlet. Note: Incorrect connection may cause serious damages to the device. Any damage caused by misuse is not covered in the warranty.

	Attach a lanyard: Slide the lanyard through the slot and hook it over the small projection.

Once you have installed the battery and SIM card, you can turn on your device and start using it.

Proper device configuration is required prior to first use. For more information about your device, please read the following instructions.

7 Quick Operation Command

Before use, common parameters must be set either by SMS command or by software.

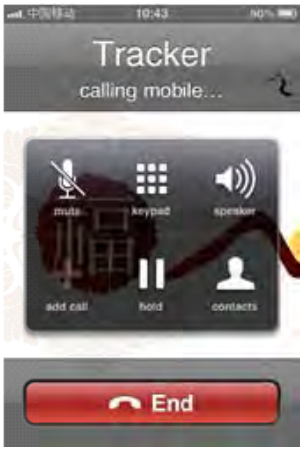
7.1 Tracking by Mobile Phone

This section describes how to query the current locationof the portable MT90G, ensuring thattheGPS is working normally.

Call the SIM card phone number that is used in the MT90G, and hang up after the dial tone rings 2-3 times.

Note: If anauthorized phone number was set by SMS command A71, only this phone number can receive SMS reports.

An SMS with a map link is received. Click the link to query the location.



SMS example:

Now,11072702:48,V,16,23Km/h,61%,http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329

The following table describes the SMS format:

Parameter	Description	Remarks
Now	Indicates the current location.	SMS header: indicates the alarm type. For details aboutthe SMS header, see the*MEITRACK SMS Protocol* and *MEITRACK GPRS/HSPA+ Protocol*.

11072702:48	Indicates the date and time in **YYMMDD hh:mm** format.	None
V	The GPS is invalid.	A = Valid V = Invalid
16	Indicates the WCDMA/GSM signal strength.	Value: 1–32 The larger the value is, the stronger the signal is. If the value is greater than 12, GPRS/HSPA+ reaches the normal level.
23Km/h	Indicates the speed.	Unit: km/h
61%	Indicates the remaining battery power.	None
http://maps.google.com/maps?f=q&hl=en&q=22.540103,114.082329	This is a map link. Latitude:22.540103 Longitude: 114.082329	None

If there is no valid GPS available, the tracker will reply the most recent valid position, along with GSM LBS information by AGPS.

If your mobile phone does not support HTTP, enter the latitude and longitude on Google Maps to query a location.

Note: The default tracker password is **0000**, which can be changedby using Meitrack Manager or SMS command. After the password is changed successfully by using an SMS command, only theauthorized phone number can receive SMS reports. The common format of an SMS command is: *Password*,*Command*,*Parameter*.

7.2 SOS– A71

This command is used to set SOS phone numbers. When you dial a phone number, an SMS report about the location will be received.

- SMS text:

  0000,A71,*Phonenumber 1*,*Phonenumber 2*,*Phonenumber 3*

  Sendthe text to the embedded SIM card phone number.

  Tip: "," should be an English comma and no space exists before and after the comma.
- The MT90Gwill automatically replythe SMS:IMEI,A71,OK. It indiates that the SOS phone number is set successfully.

  Note:

  Phone number: Contains a maximum of 16 bytes. If no phone numbers are set, leave them blank. Phone numbers are empty by default.

  Phone number 1/2/3: SOS phone numbers.When you call the tracker by using these phone numbers, the tracker will reply

an SMS with the location and send geo-fence alarms and low power alarms.

- When you press the SOS button, the MT90G will dial three authorized phone numbers in sequence. It will stop dialing when one phone number answers, andthen will send alarm information tothe phone numbers.

  Note: The phone numbers are blank by default. The phone numbers thatare set must be separated by comma (“,”) to avoid setting failures.No comma is required nextto the last phone number. For example:

  0000,A71,13500000000,,

  0000,A71,13500000000,13600000000,

  0000,A71,13500000000,13600000000,13700000000

  Reply: 353358017784062,A71,OK

  To clear all phone numbers, send 0000,A71.

If this function is unavailable, please add your Country and Area Code before your phone number when you set the presetphone numbers, or consult your local mobile operator.

7.3 Listen-in – A72

The command is used to listen in to thesurrounding environment.After the setting, the device is allowed to confidentially and automatically answer a phone and enters listen-in state for one-way communication.

Note: If **Auto Answer Incoming Call** and **Listen-in**areset for a same phone number, only **Auto Answer Incoming Call** takes effect.

To implementthe listen-in function, do not set**Auto Answer Incoming Call** for the phone number, or clear all phonenumbers by sending **0000,A71**.

- SMS text:

  0000,A72,*Listen-inphone number 1*,*Listen-inphonenumber 2*

  Sendthe text to the embedded SIM card phone number.
- The MT90G automatically replies to the SMS:IMEI,A72,OK. It indiates that the listen-in number is set successfully.
- When you call the tracker by using the preset listen-in phone number, the trackerwill answer the call automatically and enter the listen-instate. Meanwhile, the device will not makeany noise.

Note:

Phone number: A maximum of two listen-in phonenumbers can be set.Each phone number contains at most 16 digits. If only one monitor number is set, the number must be separatedby a comma (“,”) to avoidsetting failures. If no phone numbers are set and commas are remained, phone numbers set before will be deleted.The phone numbers are blank by default.

Example: 0000,A72,13844444444,13855555555

Reply: 353358017784062,A72,OK

To clear all monitor numbers, send **0000,A72**.

7.4 Smart Sleep– A73

This command is used to enable the sleep mode function, prolonging standby time to 160 hours.

- SMS text:

  0000,A73,*Sleep level*

  Sendthe text to the embedded SIM card phone number.

  The MT90G automatically replies to the SMS:IMEI,A73,OK.It indicates thatthe sleep mode is set successfully.
- To enable theGPS Log or scheduled tracking function, disablethe sleep mode.

Description:

When the sleep level is **0**, the sleep mode is disabled (default).

When the sleep level is **1**, the tracker enters the normal sleep mode. The WCDMA/GSM module always works, and the GPS module occasionally enters the sleep mode. The tracker works 25% longer in the normal sleep mode than that in the normal working mode. This mode is not recommended for short interval tracking; this will affect the route precision.

When the sleep level is **2**, the tracker enters deep sleep mode. If no event (SOS, button changes, incoming calls, or SMSs) is triggered after five minutes, the GPS module will stop and the WCDMA/GSM and MCU modules will enter sleep mode. Once an event is triggered, the GPS, WCDMA/GSM, and MCU modules will be woken up.

Note:

1. The tracker can enter normal sleep mode under vibration, while 3D shake cannot wake the tracker up from normal sleep mode.
2. In deep sleep mode, you can enable or disable the 3D shake wakeup function by Meitrack Manager.

In any condition, you can use an SMS or a GPRS/HSPA+ command to disable the sleep mode, and then the tracker exits the sleep mode and switches back to the normal working mode.

In deep sleep mode, if you want to obtain the location by SMS/call and the GPS is invalidwithin five minutes, the device will reply an SMS with a map link instead of location information.

After the device enters deep sleep mode, functions of Track By Time Interval, Track By Distance, and GPSLog are not available until you manually disable the sleep mode.

The device can be woken up from the sleep mode by pressing a key, call, or SMS. After an event is handled, the device will enter sleep mode again.

Example: 0000,A73,2

Reply: 353358017784062,A73,OK

7.5 SMS Time Zone – B35

This command is used to change the SMS report time zone.The default time zone of the tracker is GMT 0.

To changethe time zone, follow the following instructions:

- SMS text:

  0000,B35,*SMS minute*

  Sendthe text to the embedded SIM card phone number.
- The MT90G automatically replies to the SMS:IMEI,B35,OK. It indicates thatthe time zone is set successfully.

Note: The time zone is in unit of minutes. The default time zone ofthe trackeris GMT 0,and the time zone of SMS reports is different fromthat of GPRS/HSPA+ data packets. The GPSLog time zone is GMT 0.

When **SMS minute** is **0**, the time zone is **GMT 0** (default time zone).

When **SMS minute** is a value ranging from -32768 to 32767, set time zones.Set the China time zone value to **480**.

Example: 0000,B35,480

Reply: 353358017784062,B35,OK (The time zone is set to Beijing time successfully.)

The digit is your MT90G's IMEI number.

8 Configured by Computer

This section describes how to use MeitrackManager to configure the MT90Gon a computer.

Procedure:

1. Install the USB-to-serial cable driverandMeitrackManager.
2. Connect the MT90Gto a PCwiththe USB-to-serial cable.

3. Run Meitrack Manager, then the following dialog box will appear:

Meitrack Manager will detect the device model automatically and the parameter page will appear accordingly.

For details about Meitrack Manager, see the *MEITRACK Manager User Guide*.

Note: The CD delivered with the tracker contains Meitrack Manager. The software language will be automatically switched according to the operating system language. Press **Ctrl + L** to manually switch the language.

9 MS03 Tracking System

Visit http://ms03.trackingmate.com, enter the user name and password, and log in to the MS03. (Purchase the login account from your provider.)

For more information about how to add a tracker, see the *MEITRACK GPS Tracking System MS03 User Guide* (chapter 4 "Getting Started").

The MS03 supports the following functions:

- Track by time interval or distance.
- Query historical traces.
- Set polygon geo-fences.
- Bind driver and vehicle information.
- View various reports.
- Send commands in batches.
- Support OTA updates.

For details, see the *MEITRACK GPS Tracking System MS03 User Guide*.

10 Safety and Usage Instructions

Use only Meitrack-approved accessories.

Incompatible accessories may cause serious injuries or damages to your device.

Handlethe battery and charger carefully.

- Use batteries specified by Meitrack and chargers exclusively designed for your device. Incompatible batteries and chargers may cause serious injuries or damages to your device.
- Do NOT place batteries or devices on fire or in heating devices, such as microwave ovens, ovens, or radiators. Batteries may explode when overheated.

11 Battery Disposal

(Waste Electrical and Electronic Equipment Directive – Applicable in European Union and other European countries with separate battery return system.)

This symbol in the manual indicates that this product and its accessories (such as chargers, batteries and the USB cable) cannot be disposed of with other household wastes when they reach the end of their life. If batteries are not properly disposed of, these wastes may cause harm to human health and the environment. To prevent the harm, please dispose of or recycle them separately from other waste so as to boost resource recycling and reuse.

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

FCC NOTE:

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

NOTE: This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

Specific Absorption Rate (SAR) information:

This GPS Tracker meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health.

FCC RF Exposure Information and Statement The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types: MT90G has also been tested against this SAR limit. The highest SAR value reported under this standard during product certification for use when properly worn on the body is 1.273W/kg. This device was tested

for typical body-worn operations with the back of the handset kept 5mm from the body. To maintain compliance with FCC RF.

FCC ID: 2AFO2-MT90G