4G MP50G User Manual V1.0

Learn how to set up your new MiCODUS Tracker

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1. Main Features

Compact Size

4G LTE+
2G GSM

GNSS+
WiFi+LBS

Real-time
Tracking

Track
Playback

4000mAh

Waterproof
IPX7

Firmware
Remote Upgrade

Magnetic
Charge

Electronic
Fence Alarm

Find Pet by
Sound Light

Reply Google
Maps Link
After Calling

Network Blind
Area Data
Re-uploading

Low Power
Alarm

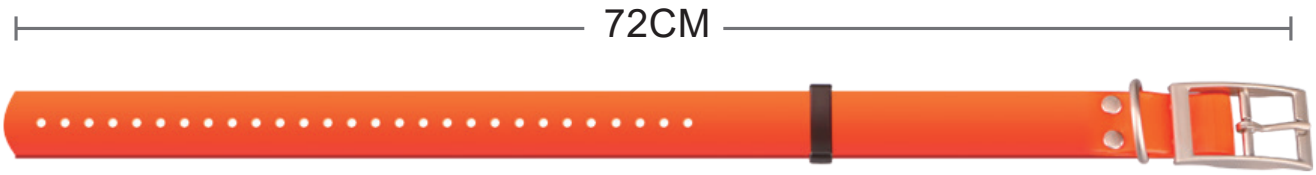
Motion
Alarm

No Motion
Alarm

2.Specifications

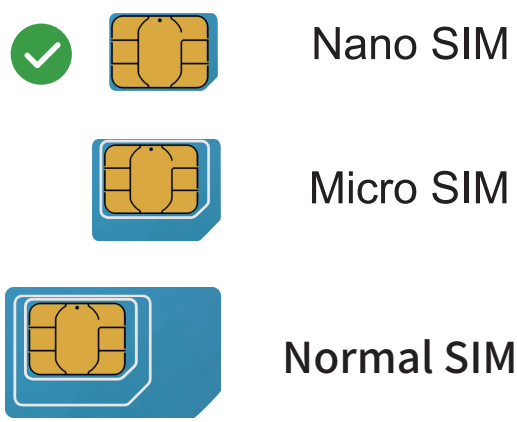
Device Information	Model	MP50G
	Weight	147.6g
	Dimensions	82mm(L)*37mm(W)*48mm(H)
	Battery	Built-in 3.7V 4000mAh Polymer Battery
Working Parameters	Working Voltage	3.4-4.5V DC
	Working Current	12V/Average 60mA
	Sleep Current	12V/Average 5mA
	Working Temperature	-20°C - 75°C
	Working Humidity	10%-85%RH
Celluar Specifications	SIM Card	Nano SIM
	Celluar Antenna	Built-in, FPC
	Working Frequency	2G GSM/GPRS: 850/900/1800/1900MHz
		4G LTE CAT1: LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28/B66
GNSS Specifications	GNSS	GPS+BDS+GLONASS
	GPS Frequency	L1: 1575.42±1.023MHz
	BDS Frequency	B1:1561.098±2.046MHz
	Satellite Channels	32
	Hot/Cold Start	<1s，<32s @ Open Sky
	GNSS Antenna	Built-in Ceramics GNSS Antenna
	Positioning Type	GNSS+WiFi+LBS+AGPS
	Accuracy	Location accuracy: <10m（1σ）
		Timing accuracy: <30ns（1σ）
		Speed accuracy: <0.1m/s（1σ）
External Interfaces	Magnetic Charge Port	1 Channel
	Buzzer	1 Channel
	Led Indicator	Charge(Red), GPS(Blue), Celluar(Yellow), Seeking Pet(White)

3.Product Stucture



4.How to manage the tracker to get online?

Step 1 SIM card requirements



Please get a suitable SIM card from your local place. The SIM card must meet below points:

- It must be compatible with the 4G LTE or 2G GSM network
- Please enable SMS, call, internet data traffic of the SIM card
- Enable the caller ID display feature
- Remove the PIN code
- Use Nano size SIM card for the tracker
- Please inquire the SIM card provider for the exact correct APN information

Step 2 SIM card installation

Step 3 Configure APN

Please get the exact correct APN name from local SIM card provider.Take the tracker to a good signal place for operation and configure the APN for it as below:

SMS Command Format	Reply	Example	Note
APN,ApnName,User, Password#	SET APN OK	APN,orange, orange,orange#	If the SIM card has APN user and APN password, then use this command.
APN,ApnName#	SET APN OK	APN,internet#	If the SIM card operator ***doesn't*** have APN user and APN password, then please use this command.

Note: The APN information is very important, it must 100% correct to match with the sim card of the tracker, if you configured wrong APN, the tracker also will reply "SET APN ok" but it will can't get online!

Step 4 Indicator status description

LED	Event	State
POWER LED (RED)	Charging	Solid
	Fully charged/Ran out of battery	Dark
CELL LED (YELLOW)	Searching and registering network	Flash every 2 seconds
	Registered network successfully	Solid
	Celluar module sleep or turn off	Dark
GPS LED (BLUE)	Searching for satellite signals	Flash every 2 seconds
	GPS/GLONASS successfully positioned	Solid
	Satellite module sleep or turn off	Dark
FINDING PET LED (WHITE)	LED flash fastly to find pet more easily	Flash fastly

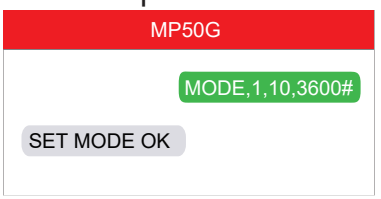
5. Package Content

GPS Tracker	x 1
Collar	x 1
Charging cable	x 1
Screwdriver	x 1
User Guide	x 1
Genuine Packing Box	x 1

6. Functions Explanation

a. Working Modes Setting

For example:



* SMS command format: ***MODE,A,T1,T2#***

A=1/2/3, 1： Realtime tracking mode 2： Regular reporting mode 3: Power saving mode; Default mode: 1

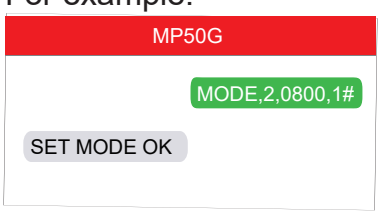
A=1 (For example: MODE,1,10,3600# means the tracker will work under mode 1, it will upload every 10s under moving status and 3600s under static status)

T1： upload interval of GPS data in moving status,unit: second,10-3600s; default: 10s
T2： upload interval of GPS data in static status, unit: second, 180-86400s; default: 3600s

NOTE:
1. Device sends data to server according to the time interval and always stays online.
2. User needs to set reporting time to server when moving and when no moving. GPS/WIFI on when moving and off when not moving.

A=2 (For example: MODE,2,0800,1# means the tracker will work with mode 2 since the 08:00am, and upload every 1 hour)
T1: interval start time,format: HHMM
T2: time interval,range: 1-72 unit: hour,default interval: 24hours

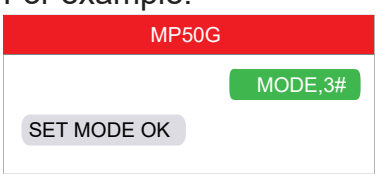
For example:



NOTE:
Under Mode 2 the device will disconnect with server after reporting, but it still can receive SMS and Call.

A=3 (For example: MODE,3#)

For example:



NOTE:
1. Under mode 3, no need set reporting time interval, the device will always keep connect with server with the heartbeat data.
Device only sends data to server when an alarm occurs.
2. GPS/WiFi only triggers when there is an event. (the rest of the time, GPS is off)

7. Full SMS Commands List

Query Commands

Functions	Command Format	Explanation
Version Inquiry	VERSION#	Device Reply Example: ID: ID number of the tracker IMEI: IMEI number of the tracker ICCID: The ICCID number of the SIM card in the tracker VERSION: The firmware version of the tracker
Parameter Inquiry	PARAM#	Device Reply Example: ID: ID number of the tracker IMEI: IMEI number of the ICCID: The ICCID number of the SIM card in the tracker APN: APN name,APN user,APN password, IP: Domain name and port number or IP address,port pumber MODE: Working mode;interval or starting time,upload interval SPEEDLIMIT: The overspeed threshold CENTER: Center number of the tracker SOS: SOS1,SOS2,SOS3 GMT: Time zone
Status Inquiry	STATUS#	TRAFFIC: ON/OFF BATTERY: XX% (Built-in Battery Power Percent) INTERNET: CLOSED (No Network) FAILED (Connecting Network or Failure) SUCCESS (Connected to Network) NET: NONE (No GSM Signal) , HIGH / MED / LOW (Signal Strength) 18 GPS: CLOSED (GPS Module Closed), FIXED,N (Positioned and satellite number), UNFIX,0 (Not Positioned yet) SPEED:30KM/H (The current speed of the target)
Alarms Parameters	ALARM#	ID: 19172012644 (Device ID number) SPEED: ON(OFF); 30km/h(speed limit); alarm ways MOTION: ON(OFF); 300s(static time);alarm ways NO MOTION: ON(OFF);3600s(static time);alarm ways LOW BATTERY: ON(OFF);alarm ways FENCE1: ON(OFF), 500m(Radius) , alarm ways FENCE2: ON(OFF), 300m(Radius) , alarm ways FENCE3: OFF FENCE4: OFF
Latitude&Longitude Inquiry	WHERE#	LAT:N23.02930,LON:E114.32180,SPEED:0.00KM/H, DATETIME:2015-05-23 14:39:11
Map URL Inquiry	URL#	http://map.google.com/?q=22.557868,113.935090 <0.0km/h 0.0> <2014-12-12 07:32:13> IMEI:354188047752402

Setting Commands

Functions	Command Format	Explanation
APN Setting	APN,APN name,APN user, APN password#	Example: APN,CMNET# (if no APN User & APN Password) APN,internet,internet,internet# (if with APN User & APN Password)
Server Setting	If set with Domain Name: SERVER,1,Domain,Port#	SERVER,1,d.micodus.net,7700#
	If set with IP: SERVER,0,IP,Port#	SERVER,0,47.254.77.28,7700#
Restore factory settings	FACTORY#	FACTORY OK
Restart device	RESTART#	RESTART OK
Internet Traffic Switch	TRAFFIC,ON#	OPEN TRAFFIC OK
	TRAFFIC,OFF#	CLOSE TRAFFIC OK
Time Zone Setting	GMT,Time zone orientation,Whole Time Zone[,Half Time Zone]#	Example: GMT,E,8# (if no half time zone) GMT,W,9,30# (if has half time zone) NOTE: Parameter : E / W; 0 ~ 12; 0/15/30/45
Mileage Statistics	MILEAGE,A,B#	A=ON/OFF, On/Off mileage calculation, default: Off B=0～999999， Mileage initial value , unit： km ; default: 0, mileage return to zero
	MILEAGE#	Query current mileage
Add SOS Administrator Number	SOS,A,1st number, 2nd number,3rd number#	Set 3 numbers at a time: SOS,A,13800138000,1380013800 1,13800138002# Set the first numberseparately: SOS,A,13800138000# Set the second number separately: SOS,A,,13800138001# Means to set 3rd number separately: SOS,A,,,13800138002#
Delete SOS Administrator Number	SOS,D,1st number,2nd number,3rd number# or SOS,D,1,2,3#	Directly delete the number: SOS,D,13800138000# Delete 1st number: SOS,D,1# Delete 2nd number: SOS,D,2# Delete the 2nd and 3rd number: SOS,D,2,3#

Add Center Number	CENTER,A, center number#	Example: CENTER,A,+8613800138000# Note: Please set up the center number with the country code as prefix!
Delete Center Number	CENTER,D#	DEL CENTER OK
Set Up GEO-Fence	FENCE,S,R,LNG,LAT#	Example: FENCE,1,500,22.65897,114.985231# (Means set up the fence 1 as center dot 22.65897,114.985231, radius 500m) FENCE,2,300,,# (Means set up the fence 2 with the center dot as the last GPS fixed position, radius: 300m) S=1～4, fence serial number R=100-65535m, Radius value LNG=Longtidue of the center dot LAT=Latitude of the center dot NOTE: 1. Fence only can be setup when the device has GPS signal, if no GPS signal, then reply: Unable to set GEO fence now, please fix the GPS location firstly! 2. User can set with or without coordinates in the command, if without coordinates then it will set up as the last GPS fixed position
Geo-fence Parameters	FENCE#	ID: 19172012644 (Device ID number) FENCE1: 500m(Radius), 22.65897,114.985231(center coordinate) FENCE2: 300m(Radius), 22.65897,114.985231(center coordinate) FENCE3: 400m(Radius), 22.65897,114.985231(center coordinate) FENCE4: 400m(Radius), 22.65897,114.985231(center coordinate)
Delete GEO-Fence	DFENCE,S#	Example: DFENCE,1# (Means delete the fence 1) DFENCE,0# (Means delete all fence) S=0～4, fence serial number
Search Mode	SEARCH#	Example: SEARCH# Note: 1. After received this command, device will start live tracking every 10 seconds and last for 10 minutes. 2. When there is an Geo-fence alarm, this search mode will be activated automatically
Buzzer Switch	BEEP,A#	Example: BEEP,ON# BEEP,OFF#
LED Switch	LED,A#	Example: LED,ON# LED,OFF#

Working Mode Setting	MODE,A,T1,T2#	A=1/2/3, 1： Realtime tracking mode 2： Regular reporting mode 3: Power saving mode; Default mode: 1 A=1 (For example: MODE,1,10,3600# means the tracker will work under mode 1, it will upload every 10s under moving status and 3600s under static status) T1： upload interval of GPS data in moving status,unit: second,10-3600s; default: 10s T2： upload interval of GPS data in static status, unit: second, 180-86400s; default: 3600s NOTE: Device sends data to server according to the time interval and always stays online. User needs to set reporting time to server when moving and when no moving. GPS/WIFI on when moving and off when not moving. A=2 (For example: MODE,2,0800,1# means the tracker will work with mode 2 since the next 08:00am, and upload every 1 hour) T1: interval start time,format: HHMM T2: time interval,range: 1-72 unit: hour,default interval: 24hours Note: Under Mode 2 the device will disconnect with server after reporting, but it still can receive SMS and Call. A=3 (For example: MODE,3#) NOTE: Under mode 3, no need set reporting time interval, the device will always keep connect with server with the heartbeat data. Device only sends data to server when an alarm occurs. GPS/WIFI only triggers when there is an event. (the rest of the time, GPS is off)
Heartbeat Packet Upload	HBT,time#	Example: HBT,3# (Means the tracker will send hearbeat data package to server very 3min to keep the network connected) Time: 1-60min, default 3min

Alarm Commands

Functions	Command Format	Explanation
Overspeed Alarm Setting	SPEED,A,B,M#	Example: SPEED,ON,120,1# (Means the speed limit is 120km/h and the alarm way is via SMS and Server) A=ON/OFF, open or close over speed alarm, default： OFF B=1～255(km/h), speed limit, default： 100(km/h); M=0/1/2, way of alarm, 0 : SERVER only, 1: SERVER+SMS, 2: SERVER+SMS+CALL; default: 1
	SPEED,OFF#	CANCEL OVERSPEED ALARM OK

Set Up GEO-Fence Alarm	FENCE,A,S,M#	Example: FENCE,ON,2,1# (Means the fence 2 alarm already been enabled, once the device enter or leave the fence 2 the alarm message will be sent via server and SMS) A=ON/OFF, open or close over speed alarm, default: OFF S=1～4, fence number M=0/1/2, way of alarm, 0 : SERVER only, 1: SERVER+SMS, 2: SERVER+SMS+CALL; default: 1
Cancel GEO-Fence Alarm	FENCE,A,S#	FENCE,OFF,2# (Means cancel alarm of the fence 2) A=OFF S=1～4, Fence serial number
No Motion Alarm Setting	NMOTION,A,T,M#	Example: NMOTION,ON,3600,1# (Means if device doesn't move (no motion) for 60 minutes, within 61 minutes, the no motion alarm will be activated, device will send alarm message to platform and SMS) A=ON/OFF, open or close over speed alarm, default: OFF T=60～36000s, Static time, Unit: second, Default: 3600s ; M=0/1/2, way of alarm, 0 : SERVER only, 1: SERVER+SMS, 2: SERVER+SMS+CALL; default: 1
	NMOTION,OFF#	CANCEL NO MOTION ALARM OK
Motion Alarm Setting	MOTION,A,T,M#	Example: MOTION,ON,300,1# (Means if device doesn't move for 5 minutes and then start move and lasts for 3 seconds, this motion alarm will be activated and the alarm message will be sent via server and SMS) A=ON/OFF, open or close over speed alarm, default: OFF T=60～36000s, static time, unit: second, default: 300s ; M=0/1/2, way of alarm, 0 : SERVER only, 1: SERVER+SMS, 2: SERVER+SMS+CALL; default: 1
	MOTION,OFF#	CANCEL MOTION ALARM OK
Low Battery Alarm Setting	BATALM,A,M#	Example: BATALM,ON,1# (Means the low battery alarm already been enabled and the alarm message will be sent via Server and SMS) A=ON/OFF, default: ON; M=0/1/2, way of alarming, 0: SERVER only, 1: SERVER+SMS, 2: SERVER+SMS+Call, default:1; NOTE: Once the battery level is below 20% device will alarm
	BATALM,OFF#	CANCEL LOW BATTERY ALARM OK

8. Troubleshooting

Type	Use
Unable to connect to tracking platform	Check the APN and settings. Check whether the data service of SIM card is enabled. Check the balance of SIM card.
Tracker shows offline	Check whether external power is still connected. Check if the vehicle entered network blind area. Check the balance of SIM card.
Unable to locate	Make sure the top side facing upward without metallic things shielded. Make sure it's not in area with no satellite coverage.
Location drift	In area with poor GNSS signal (tall building around or basement), drifting may happen. Check whether vibration happens around to trigger the accelerator.
No command reply	Make sure command format is correct. Vehicle may be in network blind area. Make sure SIM card is well inserted and has SMS service.

9. Any Questions?

E-mail: support@micodus.com
Skype: MiCODUS

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