



## ML420G User Manual V1.0

Learn how to set up your new MiCODUS Tracker

## 1. Main Features



4G LTE+  
2G GSM



Real-time  
Tracking



Historical Route  
Playback



4200mAh



Geo-fence



Strong  
Magnetic



Anti Detection



Disassemble  
Alarm



Data Storage  
In Blind Area

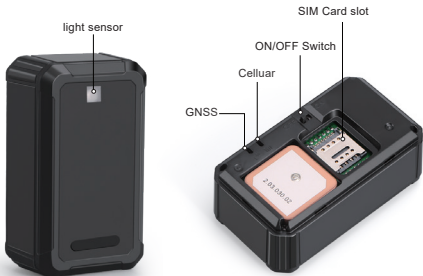


Low Power  
Alarm

## 2.Specifications

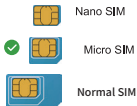
Device Information	Model	ML420G
	Weight	120g
	Dimensions	73.5mm (L)*42.8mm(W)*31.2mm(H)
	Built-in battery capacity	4200 mAh (3.0V Lithium Mn battery CR123A * 3)
Working Parameters	Operating voltage range	DC 2.5 - 3.6V
	working current	3V / average 75 mA
	The dormant current	3V / less than 3 uA
	Working Temperature	- 20°C - 75°C
	Operating humidity range	10% – 85% RH non condensing
Celluar Specifications	Communication Module	SIMCOM A7670 SA
	SIM Card	Micro
	Working Frequency	GSM/2G: 850/900/1800/1900MHz LTE/4G: LTE-FDD:B1/B2/B3/B4/B5/B7/B8/B28/B66
GNSS Specifications	GNSS	GPS+BD5+GLONASS
	Cold start time	Average 32 seconds
	Heat start time	Average 1 second
	Tracking sensitivity	-162 dBm
	Positioning antenna	Built-in antenna
	Antenna specifications	L1: 1575.42±1.023MHz
	Beidou frequency band	B1: 1561.098±2.046MHz
	Accuracy	Positioning accuracy: <10m (1σ)
		Time accuracy: <30ns (1σ)
		Rate accuracy: <0.1m/s (1σ)
	Maximum speed	515m/s
	Maximum altitude	18000m

### 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 Micro size SIM card for the tracker
- ◆ Please inquire the SIM card provider for the exact correct APN information

## Step 2 SIM card installation

- 1** Insert the Micro SIM card and turn on the power button



Spionlink  
Micro SIM



- 2** Close the back cover



## 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 <b>doesn't</b> 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
CELL LED (YELLOW)	Searching for network	Flash every 1 second
	Network has been registered	Solid
	Device entered into sleep mode	Dark
	Led indicator switch is off	Dark
GPS LED (BLUE)	GPS is in fixing	Flash every 1 second
	GPS has fixed	Solid
	Device entered into sleep mode	Dark
	Led indicator switch is off	Dark

## 4. Package Content

GPS Main Unit	x 1
User Manual	x 1
Genuine Packing Box (Optional)	x 1

## 5. Functions Explanation

Please follow with the quick user guide carefully!

### a. Working modes setting

\* ML420G has 3 working modes to meet different tracking demands, the setting command format is as below:

**MODE,A,T1,T2,T3,#**

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, 180-65535s; default: 3600s

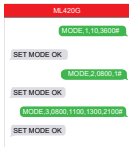
A=2 (For example: **MODE,2,0800,1#** means the tracker will work with power saving mode since the next 08:00am, and upload every 1 hour )

T1: interval start time,format: HH:MM

T2: time interval,range: 1-72 unit: hour,default interval: 24hours

A=3 (For example: **MODE,3,0800,1100,1300,2100#** means the tracker wake up at 08:00,11:00, 13:00, 21:00 )

For example:



### b.Low Battery Alarm

\* Set center number by this sms command:

**CENTER,password,A,center number#**

\*Send this sms command from the center number:

**BATALM,ON,1#**

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**

For example:



### c.Disassemble Alarm Setting

\* Set center number by this sms command:

**CENTER,password,A,center number#**

\*Send this sms command from the center number:

**TEARDOWN,A,M#**

A=ON/OFF; default:ON

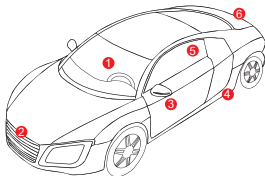
M=0/1/2; way of alarm, 0 : SERVER only, 1:

SERVER+SMS, 2: SERVER+SMS+CALL, default:1

For example:



## 6. Installation Recommendation



- ① Driving seat sundries box
- ② Front bumper
- ③ Door sundries box
- ④ Under the chassis
- ⑤ Rear windscreen
- ⑥ Rear bumper

## 7. 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 servi.

## 8. 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 number MODE: Working mode;interval or starting time,upload interval SPEEDLIMIT: The overspeed threshold ANGLERPT: Data uploading angle CENTER: Center number of the tracker SOS: SOS1,SOS2,SOS3 GMT: Time zone
Status Inquiry	STATUS#	ID: ID number of the tracker <b>BATTERY</b> : XX% (Built-in Battery Power Percent) <b>INTERNET</b> : CLOSED (No Network) FAILED (Connecting Network or Failure) SUCCESS (Connected to Network) <b>NET</b> : NONE (No GSM Signal) , HIGH / MED / LOW (Signal Strength) 18 <b>GNSS</b> : CLOSED (GNSS Module Closed), FIXED,N (Positioned and satellite number), UNFIX,0 (Not Positioned yet) <b>SPEED</b> :30KM/H(The current speed of the target) <b>SENSOR</b> : ON/OFF (Sensor on or off), LEVEL: 3 (Sensitivity level 1-9) <b>TEMP</b> : 20 C (The environment temperature) <b>BLE</b> : OFF (Bluetooth status) <b>STATE</b> : ARM (Arm or Disarm)



Functions	Command Format	Explanation
Alarms Parameters	ALARM#	ID: 19172012644 (Device ID number) STATE: ARM(DISARM) (Fortified state of device) LOW BATTERY: ON(OFF);alarm ways TEARDOWN: ON(OFF);alarm ways
Latitude&Longitude Inquiry	WHERE#	LAT:N23.02930,LON:E114.32180,- SPEED:0.00KM/H,DATEIME:2015-05-23 14:39:11
Map URL Inquiry	URL#	<a href="http://map.google.com/?q=22.557868,113.935090">http://map.google.com/?q=22.557868,113.935090</a> <0.0km/h 0.0> <2014-12-12 07:32:13> IMEI:354188047752402

## Setting Commands

Functions	Command Format	Explanation
Set the instruction password	PWD,password,ON#	Enable instruction password successfully!
	PWD,password,OFF#	Cancel instruction password successfully!
Change the instruction password	PWDCHG,[A].[B]#	A=old password, six digitals, digital range: 0-9, default: 888888; B=new password, six digitals, digital range: 0-9
Reset password	RSTPWD,A#	A=ID Number, ID number of the device;
Add Center Number	CENTER,password,A,center number#	Example: CENTER,888888,A,+8613800138000# Note: Please set up the center number with the country code as prefix!
Delete Center Number	CENTER,password,D#	Example: CENTER,888888,D#
Lock IP and Domain name	LOCKIP,PASSWORD#	Example: LOCKIP,888888#
Unlock IP and Domain name	UNLOCKIP,PASSWORD#	Example: UNLOCKIP,123456#

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# (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
Set the angle upload	ANGLEREP,X,A,B#	Example: ANGLEREP,ON,30,3# ( Means the tracker will send a data supplement when the angle change exceeds 30 degrees and lasts for 3 seconds) X=ON/OFF, default: ON; A=5~180 degrees, diversion angle degree, default: 30 degrees; B=2~5 seconds, detecting time, default: 3 seconds,
	ANGLEREP,OFF#	CANCEL UPLOAD ANGLE OK
Add SOS Administrator Number	SOS,A,1st number,2nd number,3rd number#	Set 3 numbers at a time: SOS,A,13800138000,13800138001,13800138002# Set the first number separately: SOS,A,13800138000# Set the second number separately: SOS,A,,13800138001# Means to set 3rd number separately: SOS,A,,,13800138002#

Functions	Command Format	Explanation
Delete SOS Administrator Number	SOS,D,1st number,2nd number,3rd number# or SOS,D,1,2,3#	<p>Directly delete the number: SOS,D,1380013800#</p> <p>Delete 1st number: SOS,D,1#</p> <p>Delete 2nd number: SOS,D,2#</p> <p>Delete the 2nd and 3rd number: SOS,D,2,3#</p>
Working Mode Setting	MODE,A,T1,T2,T3#	<p>A=1/2/3, 1: Tracking mode 2: Power saving mode 3: Clock mode; Default mode: 2</p> <p>A=1 (For example: <b>MODE,1,10,3600#</b> means the tracker will work under mode 1, it will upload every 10s under moving status and 3600s under static status)</p> <p>T1: upload interval of GPS data in moving status,unit: second,10-3600s; default: 10s</p> <p>T2: upload interval of GPS data in static status, unit: second, 180-65535s; default: 3600s</p> <p>A=2 (For example: <b>MODE,2,0800,1#</b> means the tracker will work with power saving mode since the next 08:00am, and upload every 1 hour )</p> <p>T1: Time point when Mode 2 starts working, format:HH:MM</p> <p>T2: time interval,range: 1-72 unit: hour,default interval: 24hours</p> <p>A=3 (For example: <b>MODE,3,0800,1100,1300,2100#</b> means the tracker wake up at 08:00,11:00, 13:00, 21:00 )</p> <p>T1: Time 1 for data reporting, format:HH:MM</p> <p>T2: Time 2 for data reporting, format:HH:MM</p> <p>T3: Time 3 for data reporting, format:HH:MM</p>
Heartbeat Packet Upload	HBT,time#	<p>Example: HBT,3# ( Means the tracker will send heartbeat data package to server very 3min to keep the network connected )</p> <p>Time: 1-60min, default 3min</p>

# Alarm Setting Commands

Functions	Command Format	Explanation
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; <b>NOTE: Once the battery level is below 20% device will alarm</b>
	BATALM,OFF#	CANCEL LOW BATTERY ALARM OK
Disassemble Alarm Setting	TEARDOWN,A,M#	Example: TEARDOWN,ON,2# ( Means the teardown alarm already been enabled and the alarm message will be sent via Server, SMS and Call ) A=ON/OFF; default:ON M=0/1/2; way of alarm, 0 : SERVER only, 1: SERVER+SMS, 2: SERVER+SMS+CALL, default:1
	TEARDOWN,OFF#	CANCEL DISASSEMBLE ALARM OK

## 9. Any Questions?

**E-mail:** [support@micodus.com](mailto:support@micodus.com)

**Skype:** MiCODUS

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