



4G MVS800G User Manual V1.0

Learn how to set up your new MiCODUS Tracker

1. Main Features



4G LTE+
2G GSM



GPS+BDS
+GLONASS



Geo-fence



Realtime
Tracking



Historical Route
Playback



Overspeed
Alarm



Solar
Powered



IP67
Waterproof



Remote
OTA Upgrade



Temperature
Monitor



15600mAh
Battery



Remote
Listen-in



Two-way
Calling



Vibration
Alarm



SOS Emergency
Call



Iridium
Communications



Disassembly
Alarm



Blind Area
Data Storage

2. Specifications

Device Information	Model	MS800G
	Weight	650g
	Dimensions	266(L)*81mm(W)*34mm(H)
	Battery	15600mAh (3.7V 18650*6P)
Working Parameters	Working Voltage	DC 3.4V - 4.5V
	Working Current	4V/Average 68mA
	Sleep Current	4V/Average 200uA
	Working Temperature	-20°C - 60°C
	Working Humidity	10%-85% RH
	Built-in Memory	5000pcs GPS data can be stored at network blind area
Cellular Specifications	SIM Card	Micro SIM
	Cellular Antenna	Built-in, FPC
	Communication Module	Quectel EG912U-GL
	Working Frequency	2G GSM/GPRS: B2/3/5/8 4G LTE-FDD: B1/2/3/4/5/7/8/12/13/17/18/19/20/25 /26/28/66 LTE-TDD: B34/38/39/40/41
GNSS Specifications	Positioning Module	Zhongke Microelectronics AT6558R
	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, 35mm*35mm*4mm
	Positioning Type	GNSS+BDS+LBS+AGPS
	Accuracy	Location accuracy:
Timing accuracy:		<30ns (1σ)
Speed accuracy:		<0.1m/s (1σ)

Iridium (Optional)	Frequency	1616 ~ 1626.5 MHz
	Max Transmit Message	340 bytes
	Max Receive Message	270 bytes
	Duplex Mode	TDD (Time Division Duplex)
	Antenna	Built-in ceramic antenna Dimensions: 25×25×4mm
External Interface	TYPE-C	

3.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



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
CELL LED (YELLOW)	Searching for network	Flash every 1 second
	Network has been registered	Solid
GPS LED (BLUE)	GPS is in fixing	Flash every 1 second
	GPS has fixed	Solid
ALL LED	Device is working but stopped more than 5min	ALL LED TURN OFF
	Device has not been turn on	
	Device ran out of battery	

4. Package Content

GPS Main Unit	x 1
User Guide	x 1
Genuine Packing Box	x 1

5. Functions Explanation

a.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:



b. Working modes setting

* MS800G has 3 working modes to meet different tracking demands, the setting command format is as below:

MODE,A,T1,T2# OR MODE,A,T1,T2,T3,T4#

A=1/2/3, 1: Intelligent mode 2: Power saving mode
3: Clock 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,10-86400s; default: 10s

T2: upload interval of GPS data in static status, unit: second, 180-86400s; default: 3600s. **0: means no data uploading when static**

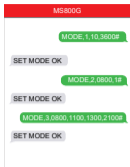
A=2 (For example: **MODE,2,0800,60#** means the tracker will work with power saving mode since the next 08:00am, and upload every 1 hour)

T1: start time of this mode,format: HHMM

T2: time interval, range: 5-43200, unit: minute, default interval: 60min

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:



c. Vibration Alert:

This vibration alert function just work under stationary status. How to use this function:

* Configure SOS numbers for the tracker by this sms command:

SOS,A,1st number,2nd number,3rd number#

3 SOS numbers supports at the most

* Enable the device to enter into arm mode by this sms command: **ARM#**

* Configure the alarm ways by this sms command:

SENALM,[A],[M]#

A=ON/OFF, default: OFF;

M=0/1/2, way of alarming,

0:GPRS only, 1: SMS+GPRS, 2: GPRS+SMS+phone call, default:1

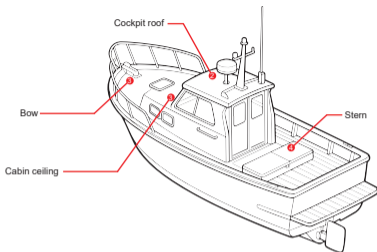
* Keep the device under stationary status more than 5min to let it enter into sleep arm mode;

* Vibrate the device then the tracker will send the vibration alarm messages

For example:



6. Installation Recommendation



- 1) The device should face up to the sky.
- 2) Metal thermal barrier of heating layer of the windshield affects the signal.

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 service.

8. Full SMS Commands List

Setting Commands

Functions	Command Format	Explanation
Change IMEI	IMEICHG,354188046912460#	NEW IMEI No. : 354188046912460
Change protocol	PROTOCOL,password,M#	Example: PROTOCOL,888888,2# (Means the will be changed to GT06 type) A=0-2; default: 0 0 : JT808, 1: TQ, 2: GT06
	PROTOCOL#	
Restore factory settings	FACTORY#	RESTORE FACTORY SETTINGS 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
Heartbeat Packet Upload	HBT,time#	Example: HBT,3# (Means the tracker will send heartbeat data package to server every 3 min for connection maintenance) NOTE: Range :1-60min, default 3min.
Sensor Sensitivity	SENLEVEL,A#	Example: SENLEVEL,4# (Means shake sensor level is set to 4) A=1-9 NOTE: 1-9 is from week to strong vibration
Arm	ARM#	Set the device into arm mode
Disarm	DISARM#	Set the device out of arm mode

Functions	Command Format	Explanation
Add SOS Administrator Number	SOS,A,1st number,2nd number,3rd number#	Example: Set 3 numbers at a time: SOS,A,13800138000,13800138001,13800138002# 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#	Example: 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,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#
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;
Lock IP and Domain name	LOCKIP,PASSWORD#	Example: LOCKIP,888888#
Unlock IP and Domain name	UNLOCKIP,PASSWORD#	Example: UNLOCKIP,123456#
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)

Functions	Command Format	Explanation
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#
Working Mode Setting	MODE,A,T1,T2# or MODE,A,T1,T2,T3,T4#	<p>A=1/2/3, 1: Intelligent mode 2: Power saving mode 3: Clock mode; Default mode: 1</p> <p>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,10-86400s; default: 10s T2: upload interval of GPS data in static status, unit: second, 180-86400s; default: 3600s. 0: means no data uploading when static</p> <p>A=2 (For example: MODE,2,0800,60# means the tracker will work with power saving mode since the next 08:00am, and upload every 1 hour) T1: start time of this mode,format: HHMM T2: time interval, range: 5-43200, unit: minute, default interval: 60min</p> <p>A=3 (For example: MODE,3,0800,1100,1300,2100# means the tracker wake up at 08:00, 11:00, 13:00, 21:00)</p>
Upload the last GPS point when device stops or can't position via satellite	GPSDUP,A#	<p>A=ON/OFF (Only valid in intelligent mode) ON:The GPS anchor point is uploaded to the terminal at the set interval OFF:Close this function</p>
	GPSDUP#	
Voice Monitor Mode	MONITOR#	<p>NOTE:1. Both center number and SOS numbers can monitor voice; 2. Before monitoring the voice around the device, the user must change the device to this monitor mode firstly.</p>
Two-way Talk Mode	TALK#	<p>NOTE: 1. Both center number and SOS numbers can use two-way talk mode; 2. Before monitoring the voice around the device, the user must change the device to this two-way talk mode firstly.</p>
Track Mode	TRACK#	<p>NOTE: After used the voice monitor mode, user can switch the device back to track mode by this command.</p>

Functions	Command Format	Explanation
Call Back	CALLBACK,Number for Voice Monitor#	<p>Example: CALLBACK,+8613366669999# (Means the tracker will make call to this number +8613366669999, then this number +8613366669999 can pick up the call to monitor the voice)</p> <p>N: Number for Voice Monitoring</p> <p>NOTE:</p> <p>1. Please send this monitor command via the center number;</p> <p>2. Any number can be set up to monitor the voice, the tracker will make a call to the number N and it will can pick up the call to monitor voice</p>
Sound Controlled Callback	SOUNDCALL,Number for Voice Monitor#	<p>Example: SOUNDCALL,+8613366669999# (Means the tracker will make call to this number +8613366669999 when the sound around the device is over than 45db, then this number +8613366669999 can pick up the call to monitor the voice)</p> <p>N: Number for Voice Monitoring</p> <p>NOTE: 1. Please send this monitor command via the center number;</p> <p>2. Any number can be set up to monitor the voice, the tracker will make a call to the number N and it will can pick up the call to monitor voice</p>
Buzzer Switch	BEEP,A,T#	<p>Example: BEEP,ON,1#</p> <p>A=ON/OFF</p> <p>T=Alarm duration, range:1-1440, unit:minute</p> <p>BEEP,OFF#</p>
LED Switch	LED,A,T#	<p>Example: LED,ON,1#</p> <p>A=ON/OFF</p> <p>T=LED on duration, range:1-1440, unit:minute</p> <p>LED,OFF#</p>
Sleep Mode Setting	SLEEP,T#	<p>Example: SLEEP,5# (Means the tracker enter into sleep mode automatically after stop more than 5min)</p> <p>T: Static duration before entering sleep mode, Range: 0-1440, Unit: minute, Default: 5</p> <p>0: means no sleep mode</p>
	SLEEP#	
Roll Alarm Calibrate	ROLLCAL#	SET ROLL ALARM CALIBRATE OK
	CKRALLCAL#	RALLCAL:0x9,0x3,0x60
Limit Device Power Off Setting	PWRLIMIT,A#	<p>A=ON/OFF</p> <p>ON: Not allow user manually shutdown device</p> <p>OFF: Allow user manually shutdown device (default)</p>
	PWRLIMIT#	

Inquiry 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 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 GNSS: CLOSED (GNSS Module Closed), FIXED,N (Positioned and satellite number), UNFIX,0 (Not Positioned yet) SPEED: 30KM/H (The current speed of the target) SENSOR: ON/OFF (Sensor on or off), LEVEL: 3 (Sensitivity level 1-9) TEMP: 20 C (The environment temperature) BLE: OFF (Bluetooth status) STATE: ARM (Arm or Disarm)
Solar Parameters Inquiry	CKSOLAR#	

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,COURSE:0.00,S PEED: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
Check IMEI	IMEI#	DEVICE IMEI No. : 354188046912460

Alarm 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; NOTE: Once the battery level is below 20% device will alarm
	BATALM,OFF#	Close auto arm function
Vibration Alarm Setting	SENALM,A,M#	Example: SENALM,ON,2# (Means the vibration alarm already been enabled and the alarm message will be sent via Server, SMS and Call) A=ON/OFF, default: OFF; M=0/1/2, way of alarming, 0 :GPRS only, 1: SMS+GPRS, 2: GPRS+SMS+phone call, default:1
	SENALM,OFF#	CANEL VIBRATE ALARM OK
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

Functions	Command Format	Explanation
Shift Alarm Setting	SHIFT,A,B,M#	Example: SHIFT,ON,100,1# (Means Setting 100 meters shift alarm range, when the ignition turned off, vehicle's 100 meters' shift will trigger the alarm and the alarm message will be sent via Server and SMS) A=ON/OFF; default:ON B=Shift Distance (Range: 100-9999m) M=0/1/2; way of alarm, 0 : SERVER only, 1: SERVER+SMS, 2: SERVER+SMS+CALL, default:1
	SHIFT,OFF#	CANCEL SHIFT ALARM OK
No Satellite Signal Alarm Setting	GNSSALM,A,M#	Example: GNSSALM,ON,2# (Means the no GNSS signal 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
	GNSSALM,OFF#	CANCEL GNSS ALARM OK
SIM Card Change Alarm	SIMALM,A,M#	Example: SIMALM,ON,2# (Means the SIM alarm already been enabled and the alarm message will be sent via Server, SMS and Call) A=ON/OFF; default: OFF M=0 ~ 3; way of alarming, 0: GPRS, 1: SMS+GPRS; M=2 GPRS+SMS+phone call; 3: GPRS+phone call. default: 0;
	SIMALM,OFF#	CANCEL SIM CARD ALARM OK
Waterfall Alarm	WATERALM,A,M#	Example: WATERALM,ON,2# (Means the waterfall alarm already been enabled and the alarm message will be sent via Server, SMS and Call) A=ON/OFF; default: OFF M=0 ~ 3; way of alarming, 0: GPRS, 1: SMS+GPRS; M=2 GPRS+SMS+phone call; 3: GPRS+phone call. default: 0;
	WATERALM,OFF#	CANCEL WATERFALL ALARM OK
Light Sensor Alarm	LIGHTALM,A,B,M#	Example: LIGHTALM,ON,5,2# (Means the light sensor alarm already been enabled,once the light change detection time last 5s the alarm will be triggered and the alarm message will be sent via Server, SMS and Call) A=ON/OFF; default: OFF B=Light detection duration; range: 1-99; unit: second M=0 ~ 3; way of alarming, 0: GPRS, 1: SMS+GPRS; M=2 GPRS+SMS+phone call; 3: GPRS+phone call. default: 0;
	LIGHTALM,OFF#	CANCEL LIGHT SENSOR ALARM OK

Functions	Command Format	Explanation
Hall Alarm	HALLALM,A,B,M#	Example: HALLALM,ON,5,2# (Means the hall alarm already been enabled,once the hall alarm detection time last 5s the alarm will be triggered and the alarm message will be sent via Server, SMS and Call) A=ON/OFF; default: OFF B=Light detection duration; range: 1-99; unit: second M=0~3; way of alarming, 0: GPRS, 1: SMS+GPRS; M=2 GPRS+SMS+phone call; 3: GPRS+phone call. default: 0;
	HALLALM,OFF#	CANCEL HALL ALARM OK
Roll Alarm	ROLLALM,A,M#	Example: ROLLALM,ON,2# (Means the roll alarm already been enabled, once the alarm triggered the alarm message will be sent via Server, SMS and Call) A=ON/OFF; default: OFF M=0~3; way of alarming, 0: GPRS, 1: SMS+GPRS; M=2 GPRS+SMS+phone call; 3: GPRS+phone call. default: 0;
	ROLLALM,OFF#	CANCEL ROLL ALARM OK

9. Any Questions?

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