

Mictrack Communication Protocol

(for MT700)

V1.0



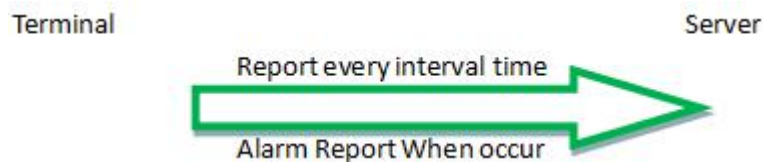
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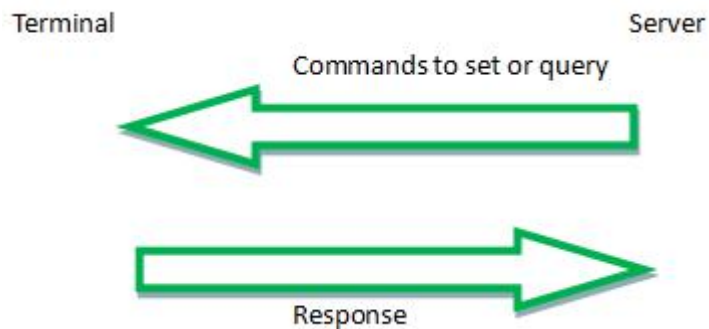
1. Communication rules

MT700 Support TCP/UDP/SMS communication protocol, including auto reports, alarms and command settings,without ACK.

1.1 Report--Auto Report/Alarm Report



1.2 Command-Setting/Query Parameter



2. Terminal to Server Message Package Format

Message Head+Message body

2.1 Message Head

Item	Example	Description
Separator	#	
IMEI	867198059727390	Device ID (15 digits)
Separator	#	
GPRS User Name	MT700	Fix value
Separator	#	
GPRS Password	0000	Fix value
Separator	#	
Report Event Status	AUTO	Report Event Status (more detail please check 2.2.3).
Separator	#	
Report interval time	1	Upload data quantity (fix to 1)
<CR><LF>		End of message Head termination

For example:

#867198059727390#MT700#0000#AUTO#1

2.2 Message Body

2.2.1 GPS data

Item	Example	Description
Separator	#	pound
Backup Voltage	38	38 means 3.8V
Message Type	\$GPRMC	RMC Protocol header
Separator	,	comma
UTC time	105721.00	hhmmss.ss
Separator	,	comma
Status	A	A=valid,V=invalid,L=Last Location
Separator	,	Comma
Latitude	2238.3071	ddmm.mmmm
Separator	,	comma
N/S Indicator	N	N=north or S=south
Separator	,	Comma
Longitude	11401.7575	Dddmm.mmmm
Separator	,	comma
E/W Indicator	E	E=east or W=west
Separator	,	comma
Speed Over Ground		knots
Separator	,	comma
Course Over Ground	96.70	degrees
Separator	,	comma
Date	250321	DDMMYY
Separator	,	comma
Reserved		
Separator	,	comma
Reserved		
Separator	,	comma
A	A	Fix Value
Checksum	*74	checksum is an XOR of all the bytes between the \$ and the * (not including the delimiters themselves) and written in hexadecimal.
<CR><LF>		End of message body termination
Separator	##	End of message package termination

For example:

#38\$GPRMC,105721.00,A,2238.3071,N,11401.7575,E,,96.70,250321,,,A*74

##

2.2.2 WiFi data

Item	Example	Description
Separator	#	
Backup Voltage	40	39 means 3.9V
Message Type	\$WIFI	WIFI Protocol header
Separator	,	comma
UTC time	123532.00	hhmmss.ss
Separator	,	comma
Status	A	A=valid,V=invalid,L=Last Location
Separator	,	comma
RSSI	-62	Received Signal Strength Indication.
Separator	,	comma
MAC	D8325A0ABADD	MAC address of AP
Separator	,	comma
RSSI	-64	Received Signal Strength Indication.
Separator	,	comma
MCA	EC172F8965BC	MAC address of AP
Separator	,	comma
RSSI	-64	Received Signal Strength Indication.
Separator	,	comma
MAC	7405A5D457D4	MAC address of AP
Separator	,	comma
Date	260321	DDMMYY
Checksum	*07	checksum is an XOR of all the bytes between the \$ and the * (not including the delimiters themselves) and written in hexadecimal.
<CR><LF>		End of message body termination
Separator	##	End of message package termination

For example:

```
##40$WIFI,123532.00,A,-62,D8325A0ABADD,-64,EC172F8965BC,-64,7405A5D457D4,260321*07
##
```

2.2.3 Report Event Status

Status	Description
AUTO	MODE 1
AUTOLOW	MODE 2
HT	MODE 3
TOWED	MODE 4
WiFi	MODE 5

DEF	Device remove alert (Light sensor)
BLP	Backup battery low voltage
CALL	Heartbeat report

3. Server to Terminal Message Format

3.1 Setup APN

If sim card have APN,APN username and password, send command:

Command format: 803,apn, apn,username,apn password

For examples: 803,internet,internet,Internet

If sim card only have APN, APN username and password are blank, send command:

Command format: 803,apn,,

For examples: 803,nbiot,,

Response:

- #IMEI#REPLY#803,OK##
- #IMEI#REPLY#803,FS##

3.2 SET IP/Port

This command is used to set the server IP and port.

Command format: 804,IP,Port

For example: 804,e.trackits.com,7700

After setup the device will connect to server and then report data to this server.

Response:

- #IMEI#REPLY#804,OK##
- #IMEI#REPLY#804,FS##

3.3 Working Mode

3.3.1 MODE 1 (Real Time Mode)

Command format: MODE,1,T

Example: MODE,1,60

Note: Device will report data every 60s .T is interval time and range is [60-600] seconds.

On this mode GPS and TCP will always ON.

Response:

- #IMEI#REPLY#MODE,OK##
- #IMEI#REPLY#MODE,FS##

3.3.2 MODE 2 (GPS Auto Mode)

Command format: MODE,2,T, X, Y

For examples: MODE,2,10,1,1

Note: 1. T is report interval time and the range is [10,60] minutes.

2. X=0 means GPS will wake-up only when report interval time is arrive; X=1 means GPS will always on,.

3. Y=0 means TCP will wake-up only when report interval time is arrive; Y=1 means TCP will always connected.

Response:

- #IMEI#REPLY#MODE,OK##
- #IMEI#REPLY#MODE,FS##

3.3.3 MODE 3 (Deep Sleep Mode)

Command format: MODE,3,T

For examples: MODE,3,1

Note: Device will wake up and report one data to server every 1 hour, after that it will go to sleep again until next 1 hour. T is [1-24] hours.

Response:

- #IMEI#REPLY#MODE,OK##
- #IMEI#REPLY#MODE,FS##

3.3.4 MODE 4 (Vibrate Mode)

Command format: MODE,4,T

For examples: MODE,4,60

Note: When the device detects continuous vibration for more than 1 minute, it will wakes up and starts to connect to the network, After connected it will Immediately report a data to the platform;

If the device is still in a vibrating state, MT700 will report to server every 60 seconds

If there is no vibration for more than 10 minutes, the device will automatically go to sleep .

T is [60-600] seconds

Response:

- #IMEI#REPLY#MODE,OK##
- #IMEI#REPLY#MODE,FS##

3.3.5 MODE 5 (WiFi only Mode)

Command format: MODE,5,T, X, Y

For examples: MODE,5,5,0,1

Note: 1. T is report interval time and the range is [1,60] minutes.

2. X fix to 0.

3. Y=0 means TCP will wake-up only when report interval time is arrive; Y=1 means TCP will always connected.

Response:

- #IMEI#REPLY#MODE,OK##
- #IMEI#REPLY#MODE,FS##

3.4 Network Mode

3.4.1 Setup to Cat M1 network only

Command format : NWM,3,0,2

Note: In this mode device will only work under Cat M1 network.

Response:

- #IMEI#REPLY#NWM,OK##
- #IMEI#REPLY#NWM,FS##

3.4.2 Setup to NB-IoT network only

Command format :NWM,3,1,3

Note: Device will only work under NB-IoT network.

Response:

- #IMEI#REPLY#NWM,OK##
- #IMEI#REPLY#NWM,FS##

3.4.3 Setup to GSM only

Command format : NWM,1,2,1

Note: Device will only work under GSM network.

Response:

- #IMEI#REPLY#NWM,OK##
- #IMEI#REPLY#NWM,FS##

3.5 Lock the Band

3.5.1 Lock to CAT M1 Band

Command format : BAND,X,0

For examples: BAND,12,0

Note: X is band, after send this command device will lock to CAT M1 B12

Response:

- #IMEI#REPLY#BAND,OK##
- #IMEI#REPLY#BAND,FS##

3.5.2 Lock to NB-IoT Band

Command format : BAND,0,X

For Example: BAND,0,20

Note: X is band, after send this command device will lock to NB-IoT B20

Response:

- #IMEI#REPLY#BAND,OK##
- #IMEI#REPLY#BAND,FS##

3.6 Set eDRX

This Command is to enable or disable eDRX.

eDRX For CAT M1

Enable eDRX: EDRX,1,4,0010

Disable eDRX: EDRX,0,4,0010

Response:

- #IMEI#REPLY#EDRX,OK##
- #IMEI#REPLY#EDRX,FS##

eDRX For NB-IoT:

Enable eDRX: EDRX,1,5,0010

Disable eDRX: EDRX,0,5,0010

Response:

- #IMEI#REPLY#EDRX,OK##
- #IMEI#REPLY#EDRX,FS##

3.7 Setup Last location report

Disable Last Location :LEP,0

Response:#IMEI#REPLY#LEP,OFF##

Enable Last Location :LEP,1

Response::#IMEI#REPLY#LEP,ON##

3.8 Set Heartbeat report

Command format: HBC,T

For example: HBC,5

T is report interval time and the range is [5,60] minutes.

Response:

- #IMEI#REPLY#HBC,OK##
- #IMEI#REPLY#HBC,FS##

3.9 Set Assisted WiFi Location

Disable WiFi Location : AGPS,0

Response: #IMEI#REPLY#AGPS,OFF##

Enable WiFi Location :AGPS,1

Response: #IMEI#REPLY#AGPS,ON##

3.10 Set WiFi HotSpot

Command format : AP,X,SSID,MAC

Note: X is hotspot number and the range is [1,3]

SSID is the hotspot name, max 32 bytes.

MAC is the Mac address (6 types)

Response:

- #IMEI#REPLY#AP,OK##
- #IMEI#REPLY#AP,FS##

3.11 Set Protocol

Command format: 800,X

For examples: 800,TCP

Note: X=TCP mean setup to TCP protocol, X=UDP means set to UDP Protocol.

Response:

- #IMEI#REPLY#800,OK##
- #IMEI#REPLY#800,FS##

3.12 Read Config

This is a command to query current device config info.

Command format: RCONF,X

For examples: RCONF,1

Note: X range is [1,3].

Response:

- #IMEI#REPLY#RCONF,1#info1##
- #IMEI#REPLY#RCONF,2#info2##
- #IMEI#REPLY#RCONF,3#info3##

3.13 Reboot

The device will restart after send this command.

Command format : REBOOT

Response:

- #IMEI#REPLY#REBOOT,OK##
- #IMEI#REPLY#REBOOT,FS##

(End of this document)

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