

Mictrack Communication Protocol

For MT78 V1.0



1. Heartbeat Data Format:

*<Head>,<ID>,<V6>,<UTC time>,<GPS status>,<Latitude>,<N/S

Indicator>,<Longitude>,<E/W Indicator>,<Speed>,<Direction>,<Date>,<Device
status><MCC>,<MNC>,<LAC>,<CI>,<ICCID#

For example:

*HQ,7026238813,V6,043602,A,2234.9273,N,11354.3980,E,000.06,000,100715,FBFFBBFF,4
60,00,10342,4283,898602A2091508006821#

2. The parameter description

Parameter	Example	Description
Head	HQ	
ID	7026238813	Device ID: 10 digits
V6		
UTC Time	043602	hhmmss
GPS status	A	A=valid,V=invalid
Latitude	2234.9273	ddmm.mmmm
N/S Indicator	N	N=north or S=south
Longitude	11354.3980	dddmm.mmmm
E/W Indicator	E	E=east or W=west
Speed	000.06	
Direction	000	
Date	100715	DDMMYY
Device status	FBFFBBFF	4 bytes in total, representing the device's operational status, alarm status, and other related states. Represented using ASCII characters for hexadecimal values. The following defines the meaning of each bit within every byte of this variable. Note: Bits use negative logic — a bit is considered active when its value is 0. Refer to Appendix at the end of the document for detailed definitions.
MCC	460	Mobile Country Code
MNC	00	Mobile Network Code
LAC	10342	Location Area Code
CI	4283	Cell Tower Identity
ICCID	898602A2091508006821	ICCID of SIM Card

2. Normal Data Format:**For example:**

24 7026238813 043602 100715 22349273 06 113543980E 014028

FBFFBBFF 00000000 00000000 01CC 00 2866 10BB XX

Parameter	Example	Description
00	\$	Record Head (0X24)
01	7026238813	Device ID
02		
03		
04		
05		
06	043602	UTC Time, hhmmss
07		
08		
09	100715	Date, DDMMYY
0A		
0B		
0C	22349273	Latitude, ddmm.mmmm
0D		
0E		
0F		
10	06	Backup Battery Power. when it is less than 7%, add F in front, and fix a word if it is greater than or equal to 7% according to actual
11	113543980E	dddmm.mmmm
12		Meaning of the last byte (index 0x15):
13		bit3: 1 = East longitude, 0 = West longitude
14		bit2: 1 = North latitude, 0 = South latitude
15		bit1: 1 = A (GPS position fixed), 0 = V (GPS not fixed) bit0: Undefined
16	014028	Speed: 014 knots
17		(1 knot = 1 nautical mile per hour = 1.852 km/h = 0.514444 m/s)
18		Direction: 028 (in decimal format), where 0° represents true north.
19-1C	0xFFFFBBFF	Device status and user-defined alarm

		status are represented in binary format. The meanings are identical to those defined in the heartbeat packet.
1D~20	0x00000000	Reserved field.
21~22	0x01cc	mcc
23	0x00	mnc
24~25	0x2688	lac
26~27	0x10bb	Cell id
28	0x1E	rx
29~2A	0x2866	lac
2B~2C	0x1286	Cell id
2D	0x17	rx
2E~2F	0x2866	LAC
30~31	0x1287	Cell ID
32	0x15	rx
33~38	...	bssid
39	0x3A	rssi
3A~3F	...	bssid
40	0x40	rssi
41~46	...	bssid
47	0x46	rssi
48	00	Record Number

3. Appendix:

Device Status

Bit Order	Reserved		Device Status		Device Status		Alarm Status	
	First Byte		Second Byte		Third Byte		Fourth Byte	
0	1	Reserved	1	Reserved	1	Reserved	1	Reserved
1	1	Reserved	0	Vibration Alarm	1	Reserved	0	SOS Alarm
2	0	Supplementary Data	1	Reserved	0	Reserved	0	Over Speed
3	1	Reserved	1	Reserved	1	Reserved	1	Reserved
4	1	Reserved	1	Reserved	1	Reserved	1	Reserved
5	1	Reserved	1	Reserved	1	Reserved	1	Reserved
6	1	Reserved	1	Reserved	1	Reserved	0	Low battery alert
7	1	Reserved	1	Reserved	1	Reserved	1	Reserved

4. How to interpret the device status

For examples the raw data is : **FFFFBFD**:

The raw data consists of 4 bytes: FF FF FB FD

Convert each byte into binary form:

- FF → 11111111
- FF → 11111111
- FB → 11111011
- FD → 11111101

According to the **Appendix**:

- The fourth byte represents the Alarm Status.
- In binary 11111101, the second bit (from right to left) is 0.
- Bit 1 = 0 corresponds to SOS Alarm.

Therefore, when the device reports FFFFFBFD, it indicates an SOS Alarm event.

(End of this document)

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