

Mictrack Communication Protocol For MP91 V1.0



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1. Heartbeat Data Format:

*<Head>,<ID>,<Data Type>,<UTC time>,<GPS status>,<Latitude>,<N/S Indicator>,<Longitude>,<E/W Indicator>,<Speed>,<Direction>,<Date>,<Vehicle status><MCC>,<MNC>,<LAC>,<CI><mileage>,vol#

V1 example(heartbeat data)

*HQ,8168000008,V1,043602,A,2234.9273,N,11354.3980,E,000.06,000,100715,FBFFBFFF,460,00,10342,4283#

V5 example (with mileage and external power voltage)

*HQ,8168000008,V5,043602,A,2234.9273,N,11354.3980,E,000.06,000,100715,FBFFBFFF,460,00,10342,4283,1000,125#

V6 example (with ICCID Data)

*HQ,8168000008,V6,043602,A,2234.9273,N,11354.3980,E,000.06,000,100715,FBFFBFFF,460,00,10342,4283,898602A2091508006821#

1.1 The parameter description

Parameter	Example	Description
Factory Name	HQ	Fix Value
ID	8168000008	Vehicle ID
Data Type	V1	Data types: V1 heartbeat packet, V2 address request, V5 with mileage and external power voltage, V6 with ICCID.
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	11402.1399	dddmm.mmmm
E/W Indicator	E	E=east or W=west
Speed	000.06	
Direction	000	
Date	100715	DDMMYY
Vehicle status	FBFFBFFF	Use four bytes to represent the vehicle and alarm status. Use ASCII characters to represent hexadecimal values (see Appendix A for details).
MCC	460	Mobile Country Code

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MNC	00	Mobile Network Code
LAC	10342	Location Area Code
CI	4283	Cell Tower Identity
mileage	1000	For V5 only
Vol	125	External power voltage, for V5 only, 125 means 12.5v
ICCID		For V6 only

1.2 Appendix:

Vehicle Status use four bytes to represent the vehicle and alarm status. Use ASCII characters to represent hexadecimal values. The specific meanings of each bit in each byte of the variable are shown in the table below, where "bit" represents negative logic, i.e. bit=0 is effective.

bit order	Reserved		Device status		Vehicle status		Alarm Status	
	First byte		Second byte		Third byte		Fourth byte	
0	1	Reserved	1	Reserved	0	Door is open	1	Reserved
1	0	Towed Alarm	0	Shake Alarm	0	Fence	0	SOS Alarm
2	0	blind spot data	1	Reserved	0(or 1)	0: ACC OFF 1: ACC ON	0	Over Speed
3	0	Cut-off fuel and power	0	External power disconnected	0	Reserved	0	Unauthorized ignition alarm.
4	0	Battery removal alarm	1	Reserved	0	Reserved	0	Unauthorized door opening alarm.
5	1	Reserved	1	Reserved	0	Reserved	0	Vehicle battery low alert
6	1	Reserved	1	Reserved	1	Reserved	1	Backup battery low alert
7	1	Reserved	1	Reserved	1	Reserved	1	Reserved

2. Normal GPS Data Format:

HEX encoding format, the data example is as follow:

24 8168000008 043602 100715 22349273 06 113543980E 014028
FBFFBFF 00000000 00000000 01CC 00 2866 10BB XX

Serial number	Example	Description
00	\$	Record Header (0X24)

01	8168000008	Device ID
02		
03		
04		
05		
06	043204	UTC Time, hhmmss
07		
08		
09	100715	Date, DDMMYY
0A		
0B		
0C	22349273	Latitude, ddm.mmmm
0D		
0E		
0F		
10		
11	06	06 represents 100%, 05 represents 80%, 04 represents 60%, 03 represents 20%, 02 represents 10%, 01 represents 5%, 00 represents 0%.
12		
13		
14		
15		
16	113543980E	dddmm.mmmm last Byte(Serial number 0x15) mean: bit3, 1: East Longitude, 0: West Longitude bit2, 1: North Latitude, 0: South Latitude bit1, 1: A, 0: V bit0, undefined
17		
18		
19		
1C		
16	014028	Speed, Direction (The speed is 014 knots (1 knot = 1 nautical mile/hour= 1.852 kilometers/hour= 0.514444 meters/second).The direction is 028, with 0 representing Positive north in decimal.)
17		
18		
19-1C	0xFFFFFBFF	vehicle status. The vehicle status and user-defined alarm status expressed in binary. The same as the heartbeat data format.
1D~20	0x00989680	Mileage
21-24	0x00000000	Reserved
25-26	0x01cc	mcc
27	0x00	mnc
28-29	0x2866	lac

2A-2B	0x10bb	Cell id
2C	XX	Record Number, The record number is represented in binary and is automatically incremented by 1 for each record sent.

3. Server to Terminal Message Format

3.1 Center Command Format:

*<Head>,<ID>,<CMD>,<UTC time>,<PARA1>,<PARA2>,...#

For example:

*HQ,8168000008,V,043602,A,2234.9273,N,11354.3980,E,000.06,000,100715,FBFFBBF
F,460,00,10342,4283#

Parameter	Example	Description
Head	HQ	Fix Value
ID	8168000008	Vehicle ID
CMD	R12	Command number
UTC Time	043602	hhmmss
PARA1		Command parameters.
PARA2		Command parameters.
...
#	#	End

3.2 Device return data format:

*<Head>,<ID>,<Date Type>,<CMD>,<Time 1>,<Time2><GPS status>,<Latitude>,<N/S Indicator>,<Longitude>,<E/W Indicator>,<Speed>,<Direction>,<Date>,<Vehicle status><MCC>,<MNC>,<LAC>,<CI><mileage>#

For example:

*HQ,8168000008,V,043602,A,2234.9273,N,11354.3980,E,000.06,000,100715,FBFFBBF
F,460,00,10342,4283#

Parameter	Example	Description
Header	HQ	Fix Value
ID	8168000008	Vehicle ID
Data Type	V1	Data types: V1 heartbeat packet, V2 address request, V5 with mileage data, V6 with ICCID.
CMD	R12	Central command

Time1	043602	The time value in the confirmed command.
Time2		UTC Time
GPS status	A	A=valid,V=invalid
Latitude	2234.9273	ddmm.mmmm
N/S Indicator	N	N=north or S=south
Longitude	11402.1399	dddmm.mmmm
E/W Indicator	E	E=east or W=west
Speed	000.06	
Direction	000	
Date	100715	DDMMYY
Vehicle status	FBFFBFFF	Use four bytes to represent the vehicle and alarm status. Use ASCII characters to represent hexadecimal values (see Appendix for details).
MCC	460	Mobile Country Code
MNC	00	Mobile Network Code
LAC	10342	Location Area Code
CI	4283	Cell Tower Identity
#	#	End

4. Center Commands

4.1 R12

R12 is the confirmation command when server receives the uplink data

Device report: *HQ data and 24 data, and the server returns following data.

Server reply :HQ,8168000005,R12,062108#

8168000005: Device ID

062108: UTC time.

4.2 D1

D1 is Command to set the device data upload interval when ACC ON

For exampe: *HQ,8168000005,D1,062108,30,1#

Device reply: *HQ,8168000005,V4,D1,30,65535,062108,062225,A,2235.0086,N,11354.3668,E,000.00,000,160716,FFFFBFFF,460,00,10342,3721#

4.3 S20 Cut off oil and power command

Cut-off fuel and power command: *HQ,8168000005,S20,061158,1,1#

Device response: *HQ,8168000005,V4,S20,OK,061158,061202,
A,2235.0086,N,11354.3668,E,000.00,000,160716F7FFBBFF,460,00,10342,3721#

Restore fuel and power command: *HQ,8168000005,S20,061713,0,0#

Device response: *HQ,8168000005,V4,S20,OK,061713,061730,
A,2235.0086,N,11354.3668,E,000.00,000,160716,FFFFB9FF,460,00,10342,3721#

4.4 Command to set the defense and disarmament SF and CF.

Set defense: *HQ,8168000005,SF,061837,0,0#

Device response: *HQ,8168000005,V4,SF,061837,061955,
A,22350086,N,11354.3668,E,000.00,000,160716,FFFFB9FF,460,00,10342,3721#

Disarm: *HQ,8168000005,CF,061939,1,1#

Device response: *HQ,8168000005,V4,CF,061939,062057,
A,2235.0086,N,11354.3668,E,000.00,000,160716,FFFFBBFF,460,00,10342,3721#

4.5 Command to set the main control number S71.

Server sends: *HQ,8168000005,S71,062328,01,18688993050#

Device response: *HQ8168000005,V4,S71,01,062328, 062355,
A,2235.0086,N,11354.3668,E,000.00,,160716,FFFFB9FF,460,00,10342,3721#

4.6 Command to clear the alarm R7.

Server sends: *HQ,8168000005,R7,063012#

4.7 SMS command transparent reply (ASCII code).

Server sends SMS command: admin123456 138888888888

Device response: *HQ,8168000005,SMS,SET OK#

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Any questions please do not hesitate to contact us:

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