GPS Tracker Protocol

1.Device returned information structure：

General Information

*XX,YYYYYYYYYY,V1,HHMMSS,S,latitude,D,longitude,G,speed,direction,DDMMYY,vehicle_status#

Confirm information

*XX,YYYYYYYYYY,V4,CMD,hhmmss,HHMMSS,S,latitude,D,longitude,G,speed,direction,DDMMYY,vehicle_status#

Among them * command header

XX Manufacture example TH DC XY etc. separator

YYYYYYYYYY device serial number

CMD The command center has been confirmed

Hhmmss Time value is recognized in the command.

HHMMSS Device Time, standard Time 8-hour time difference with GMT

S Data significance. A/V A representative of GPS positioning data is valid data V indicates that the GPS positioning data is invalid data.

latitude latitude format DDFF.FFFF, DD Degree latitude 00 ~ 90 ,FF.FFFF Degree latitude... 00.0000 ~ 59.9999 Retention of four decimal places.

D Latitude flag N north latitude S south latitude .

longitude longitude，格式DDDFF.FFFF DDD Degrees longitude 000 ~ 180 FF.FFFF Longitude points 00.0000 ~ 59.9999 Retention of four decimal places.

G Longitude logo E Longitude W West longitude .

speed speed range 000.00 ~ 999.99 byte Two decimal places.

The information field may be empty is longitude,G,,direction, Speed is expressed 0

direction Azimuth North to 0 degree Resolution 1degree Clockwise direction.

The information field may be empty is longitude,G,speed,, MMDDYY, Expressed as an angle 0.

DDMMYY date/month/year

vehicle_status Vehicle condition A total of four bytes Vehicle device represents member state Vehicle component status and alarm status. ASCII character represented by the hexadecimal value The following is the specific meaning of each bit of each byte of the variable bitRepresentation using negative logic bit=0 is effective.Shown in the following table

2.It sends a command center set:

1 **Positioning monitoring command D1**

*XX,YYYYYYYYYY,D1,HHMMSS, interval, count #

interval Polling time slice Ranges 30 ~ 65535 In seconds.

count Device location information of the number of transmissions to the monitoring center.

The Directive requires an onboard device to the interval intervals Return count time location information Up to 65535 times.After the vehicle device receives the instruction Monitoring center immediately began to return General Information If the count is 1 or 0 Invalid interval That is a return of general information.

Vehicle device will receive the instruction to send the first locate information immediately (V1) While D1 interval timer starts counting from 0 seconds (set to 0) If there are previously finished unsent D1 command places replaced by a new command.

example *TH,000,D1,130305,60,4#

This command requires an onboard device every 60 seconds to return to the center once information.A total of 4 times return.

Vehicle device returns the following information

*TH,2020916012,V1,050316,A,2212.8745,N,11346.6574,E,14.28,028,220902,FFFFFBFF#

attetion Return time 050316 Beijing time 13:00 equivalent to the standard time of

5:00

2 **Automatic monitoring setting command S17**

*XX,YYYYYYYYYY,S17,HHMMSS, interval#

Interval Polling time slice Ranges 30 ~ 65535 In seconds.

The instruction set of the complete automatic monitoring parameters interval.It is the interval of an onboard device periodically sends location information to the monitoring center When the vehicle device automatically monitoring options open Vehicle device in accordance with the specified time interval interval Send general type of location information to the monitoring center.

example *TH,000,S17,130305,1800#

This command requires vehile device every half hour to return a message to the center.

Vehicle device will receive the instruction to open the option of automatic monitoring and immediately sends an acknowledgment message V4 S 17 while the interval timer is set to 0 If there is previous S17 command replaced by a new command.

*TH,2020916012,V4,S17,130305,050316,A,2212.8745,N,11346.6574,E,14.28,028,220902,FFFFFBFF#

After the vehicle device at predetermined intervals Returns general information V1 (the same command D1)

3 **Clear alarm instruction R7**

*XX,YYYYYYYYYY,R7,HHMMSS #

Example:*TH, 000000,R7,130305#

Vehicle device after receiving a command to clear out all the alarm information But does not send return information Monitoring system can be added to send a single command to check whether monitor alarm has been cleared.

Security type vehicle device with software up of version 2.20 and logistics type vehicle device with software up of versions 1.05 after receiving the command will automatically make a single supervisory command, which send back a general location information.

4 **Cold start command R1** (security type vehicle device with software up of SV204 version support)

*XX,YYYYYYYYYY,R1,HHMMSS #

Example:*TH, 000000,R1,130305#

Vehicle device after receiving a command to perform a cold boot reset, does not send return information, ongoing alarm, call, etc. will all be terminated.

After a cold start non-vehicle device warning status, the status of all parameters are all clear, but will not change the system settings

5 **Listen in commands R8**

*XX,YYYYYYYYYY,R8,HHMMSS,listen_address #

listen_address: Vehicle device callback listener phone number.

If the vehicle is prohibited listening state machine returns information

*TH,2020916012,V4,R8,ERROR,130305,050316,A,2212.8745,N,11346.6574,E,14.28,028,220902,FFFFFBFF# ;

After receiving this command Automatically dials listen_address Center can install automatic recording equipment recording monitor content on this phone.

Listen in command communication right is up It will force to stop all the other ongoing communication. Such as general call, GPRS connection If the company does not support GPRS and mobile calls simultaneously The transfer monitor dialing.

1 Under the following conditions, vehicle deivce in the command channel (ASCII code) active upload information V1.

a Registration

b D1 received command

c when an alarm occurs, the interval of 4-minute intervals, total three times (the same message).

d At the end of each call (incoming, outgoing, listening)

e Customized information, the definition of a signal state change occurs.

f Received disarm the alarm command R7.

When the center receives ASCII encoding V1 information, pay attention to detect whether to re-visit, or alarm, or monitor signal state has changed.

This requirement means that you must limit the terminal numbers of GPRS services support in the same time.

Factory setting: standard recording mode.

3.GPRS information transfer protocol.

Standard recording mode (binary V1 general information) encoding format

No	00	01	02	03	04	05	06	07	08	09	0A	0B
Content	$	0x1030731001					0x050316			0x220902		
meaning	Recording head	Vehicle device Serial Number					Time			Date		

NO	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18
Content	0x22128745				0x00	0x113466574C					0x014028		
meaning	Latitude value				Retention	Longitude values N E AV					rate direction		

NO	19	1A	1B	1C	1D	1E	1F
Content	0Xffffffbff				0xff	0x00	
meaning	vehicle_status				Usr_alarm_flag	Retention	Record numbe

Explanation “$” 0x24 Recording head Center identification record starting position

Time 0x050316 standard Time 05:03:16 Equivalent to GMT 13:03:16

Date 0x220902 September 22, 2002

Latitude value 0x22128745 222 degrees 12.87455

Longitude values 0x113466574C 113 degree 46.6574 The last byte serial number 0x15 meaning

bit7654 Longitude last one

bit3 1 East longitude 0 West Longitude

bit2 1 North Latitude 0 South Latitude

bit1 1 A 0 V

bit0 Undefined

rate direction 0x014028 rate 014 byte direction 028

vehicle_status Usr_alarm_flag In binary representation of the vehicle status and user-defined alarm state._Meaning and SMS (ASCII representation) the same.

Record number:Record number binary representation, sending a record is automatically incremented.

Attention Standard mode recording (equivalent to V1 general information) no temperature data.

The difference between X mode coding format record and standard recording mode

NO	00	01	02	03	04	05	10	15

Standard Mode Content	$	0x1030731001	0x00	4C
Standard Mode Meaning	Recordin g head	Car Serial Number	Retention	N E AV
X mode content	X	0x0000130502	0x31	4D
X Mode Meaning	Recordin g head	Mileage data integer part	The absolute value of the temperature	N E AV TS

Explanation

1 X mode recording head for the "X" (0x58), is used to identify the center of the recording start position
2 mileage data integer unit 0000130502 driven distance unit 0.51444 meter 130502 BCD coded decimal 130502X0.51444=67135.449meter.
3 The absolute value of the temperature 0x31=49/2=24.5℃，若没有配If no temperature sensor configuration, The temperature value is 0xff is 127.5 Operation, after the removal of temperature sensor value is 0xfe 127 Under normal circumstances, the highest temperature value 125 is 0xfa.
4 Temperature Symbol TS NO 0x15 byte bit0=1 It indicates temperature value is negative.

note X mode recording only use TCP transport protocol No record of the serial number information Support XP mode recording GPRS communication server, SOCKET vehicle must be registered with the corresponding serial number of the machine when the vehicle device Login Register And when each record received X, Insert it into the record, and send the other services.UDP protocol can only transmit standard recording mode.

a ASCII information will not be recorded and transmitted in the same TCP packet.

b Package to record the recording head “$” 0x24 That is the first record of the first character or“X”start Length is an integer multiple of 32; The first character is ASCII packet “*” When the transmission of the first split is not necessarily a character “*”But certainly not “$” or“X” No information content “$” or“X” .

UDP packet recording the first character is a recording head “$” It is also sent to UDP record mark. UDP if the first character is not“$” It said additional information such as images, files, etc., left the definition of the future.

English Address Request Protocol (terminal request)
*XX,YYYYYYYYYY,V3,HHMMSS,S,latitude,D,longitude,G,speed,direction,DDMMYY,vehicle_status, net_mcc,net_mnc,net_lac,net_cellid#
English return address protocol (server issues)
*HQ,4106000054,I1_2_EN,130305,10,1,9,test12345

Chinese Address Request Protocol (terminal request)
*XX,YYYYYYYYYY,V2,HHMMSS,S,latitude,D,longitude,G,speed,direction,DDMMYY,vehicle_status, net_mcc,net_mnc,net_lac,net_cellid#
Chinese return address protocol (server issues)
*HQ,4106000054,I1,130305,10,1,4, 5e 7f 4e 1c

*HQ,4106000054,I0,130305,10,1,2, 5e 7f 4e 1c
net_mcc,net_mnc,net_lac,net_cellid# 460,01,43559,344224#

Standard mode upload data to increase base station location information

Encoding format

NO	00	01	02	03	04	05	06	07	08	09	0A	0B
CONTENT	$	0x1030731001					0x050316			0x220902		
MEANING	Recording head	Car Serial Number					Time			Date		

NO	0C	0D	0E	0F	10	11	12	13	14	15	16	17	18
CONTENT	0x22128745				0x00	0x113466574C					0x014028		
MEANING	Latitude value				battery power	Longitude values N E AV					rate direction		

NO	19~1C	1D	1E	1F	20	21~24	25	26	27
CONTENT	0Xfffffbff	0xff	0x00			0x000012 34	0x01CC		0x01
MEANING	vehicle_status	User_alarm_flag	Retention	GSM signal(1~31)	GPS signal	GPS Mileage units (km)	country code		Operators Number

NO	28	29	2A	2B	2C
CONTENT	0x8763		0x5B9C		0x00
MEANING	The base station number		Community ID		Record number

Base station information
country code 460=0x01CC
Operators Number, 01= 0x01
The base station number, 34569=0x8763
Community ID 23452=0x5B9C

16 binary data stream 01 CC 01 87 63 5B 9C

Status bit definitions (vehicle_status)：

Rank		The first byte	The second byte		The third byte		The fourth byte	
0	0	Temperature alarm	0	GPS Receiver fault alarm	0	Door opening	0	Illegal door alarm
1	0	Move alarm	0	Vibration alarm	0	Vehicles fortification	0	Panic Emergency alarm
2	0	Repay data	0	Tilt alarm	0	ACC close	0	Over Speed alarm
3	0	The vehicle is off the oil and power status	0	Host powered by back-up battery	0	Collision warning	0	Illegal fire alarm
4	0	Demolition battery alarm	0	The battery has been removed	1	Retention	0	No entry cross-border police
5	0	Home Emergency alarm	0	GPSAntenna Open	0	engine	0	GPS Antenna open alarm
6	0	Office Emergency alarm	0	GPS Antenna short	0	Customized alarm	0	GPS Antenna open alarm
7	0	Low Ground Sensor 1	0	Low level sensor 2 Ground	0	Car over speed	0	Exit ban cross-border police

Upload temperature protocol:
*XX,YYYYYYYYYY,V11,HHMMSS,S,latitude,D,longitude,G,speed,direction,DDMMYY,vehicle_status, net_mcc,net_mnc,net_lac,net_cellid,bat,T1_adc,T2_adc#
T1_adc, The first channel temperature values corresponding to adc
T2_adc, The second channel temperature values corresponding to adc

>60000 Invalid Data

ASCII The last field is the information charge information

*HQ,4103000861,V1,092853,A,2234.2029,N,11351.4197,E,000.40,000,270215,FFFFFBFF,460,00,0,0,6#

Multi-site agreement
*XX,YYYYYYYYYY,NBR,HHMMSS,MCC,MNC,TA,NUM,LAC,CID,RXLEV
,LAC,CID,RXLEV….,DDMMYY,vehicle_status#
XX manufacturer
YYYYYYYYYY ID
HHMMSS Time
MCC country code MCC(3 Digit)
MNC Network number MNC(3 Digit)
NUM The number of base stations Up to 6
TA GSM delay
LAC Location area codeLAC(5 Digit)
CID The base station number CID(5 Digit)
RXLEV Signal strength
DDMMYY Date
vehicle_status See <common data definitions>
Examples
*HQ,7893267560,NBR,081606,460,0,1,4,9338,3692,150,9338,3691,145,9338,3690,140,

9338,3692,139,220513,FFFFFBFF#

*XX,YYYYYYYYYY,NBR,HHMMSS,MCC,MNC,TA,NUM,LAC,CID,RXLEV
,LAC,CID,RXLEV….,DDMMYY,vehicle_status#

XX manufacturer
YYYYYYYYYY ID
HHMMSS Time
MCC country code MCC(3 Digit)
MNC Network number MNC(3 Digit)
NUM The number of base stations Up to 6
TA up to 6
LAC Location area code LAC(5位)
CID The base station number CID(5位)
RXLEV Signal strength
DDMMYY Date
Vehicle_status (See <common data definitions>)
*HQ,7893267560,NBR,081606,460,0,1,4,9338,3692,150,9338,3691,145,9338,3690,140,
9338,3692,139,220513,FFFFFBFF#

There need to increase internet protocol calibration time:
When the server receives instructions V1 and NBR Answer issued V4 Calibration time is 0 time zone
//*HQ,8856000065,V4,NBR,20150525102030#
//*HQ,0600097800,V4,V1,20150525102030#

20150525102030 Represents 0 Time Zone 2015-05-25 10:20:30 Beijing Time 18:20:30

SMS settings Working Hours:
DWaaa,bb,hhmm
aaa,_Wake-up time to work 005 720 Unit (min) aaa=999_Representation has been working.
bb,_Wake-up interval 01 72 Units (h) bb=0时，Wake-up interval 30 minutes.
hhmm,_Regular daily wake-up time The apparatus corresponds to the time zone is converted to local time Non-zero time zone bb is less than or equal to 24 hours effective.

DW030,12,0830
030_After 30 minutes of continuous work wake Wakes up once every 12 hours apart Regular wake-up time 8 30

Platform to send commands:
*HQ,000,S71,085902,31,aaa,bb,hhmm#
Parameters defined SMS:
Terminal answers
*HQ,0000000000,V4,S71,085902,31#

LK330
3D position and the amount of change Calibration Protocol:

After mounting the device, send down the calibration command.
After receiving the command,Alarm and valid positioned update gps location Otherwise Upload nominal position.
3D coordinate change amount exceeds the value reported tilt alarm.
*HQ,0000000000,V4,S71,085902,41,x,y,z,t,114.051248E,22.567185N#

x,y,zRanges 10 256
t,_Continuous vibration wake-up time 3 20