GPS Tracker
Communication Protocol
(PT80)

CONTENT

All data in the protocol follow the [vendor*Device ID* Content Length*Content] format. The Vendor ID fixed for two bytes, Content Length fixed for four bytes ASSII code. For example, FFFF means length is 65535.

1.Command from Tracker

1.1 Maintain connection

(1) Data from Tracker
[CS*YYYYYYYYY*LEN*LK]
For example:[SG*8800000015*0002*LK]
Answer from Server:
[CS*YYYYYYYYY*LEN*LK]
For example:[SG*8800000015*0002*LK]
Explanation: The maintain connection keeps for 3mintutes. If terminal dose not receive the replied data, the maintain connection will connect one time after 3 minutes automatically.
(2) Data from Tracker
[CS*YYYYYYYYY*LEN*LK,Steps,rolling number,battery value]
For example:[SG*8800000015*0009*LK,50,100，100]
Answer from Server:
[CS*YYYYYYYYY*LEN*LK]
For example:[SG*8800000015*0002*LK]
Explanation: The maintain connection keeps for 3mintutes. If terminal dose not receive the replied data, the maintain connection will connect one time after 3 minutes automatically.
The above two situations exist.

1.2 Location data report

Data from server:
[CS*YYYYYYYYY*LEN*UD,Location data(refer to Appendix 1)]

For example:
[SG*8800000015*0087*UD,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0000,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]
Answer from Server:
No reply
Explanation: Terminal reports data and status information accordance with preset time interval, and no need server reply.

1.3 Buffer supplementary transmission

Data from server:
[CS*YYYYYYYYY*LEN*UD2,Location data(refer to Appendix 1)]

For example:
[SG*8800000015*0088*UD2,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0000,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]

Answer from Server:
No reply
Explanation: Supplement the reporting of buffer

1.4 Alarm data report

Data from server:
[CS*YYYYYYYYY*LEN*AL,Location data(refer to Appendix 1)]
For example:
[SG*8800000015*0087*AL,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0001,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]
Answer from server:
[CS*YYYYYYYYY*LEN*AL]
For example:[SG*8800000015*0002*AL]
Explanation: Tracker will send alarm to server, and keeps sending till receive of confirmation from server.

1.5 Request location command

Data from server:
[CS*YYYYYYYYY*LEN*WAD,Language,Location data(refer to Appendix 1)]

For example:
[SG*8800000015*008B*WAD,CH,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0001,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]
Answer from server:
[CS*YYYYYYYYY*LEN*RAD,Locate type,location data]
For example:[SG*8800000015*000C*RAD,GPS,corresponding language location information]

Explanation:

CH= Chinese

EN= English

location data code is GB232. Locate type have GPS positioning and BASE positioning.

1.6 Request latitude and longitude command

Data from server:
[CS*YYYYYYYYY*LEN*WG,Location data(refer to Appendix 1)]

For example:
[SG*8800000015*0087*WG,220414,134652,A,22.571707,N,113.8613968,E,0.1,0.0,100,7,60,90,1000,50,0001,4,1,460,0,9360,4082,131,9360,4092,148,9360,4091,143,9360,4153,141]
Answer from server
[CS*YYYYYYYYY*LEN*RG,locate type,latitude,Latitude flag,longitude, longitude flag]
For example: [SG*8800000015*0021*RG,BASE,22.571707,N,113.8613968,E]
Explanation: Used under the condition of no gps location, asking for latitude and longitude from platform by the way of GSM station.

2.Platform sending command

2.1 set GPRS Time Interval

Data from server:
[CS*YYYYYYYYY*LEN*UPLOAD,time interval]
For example:[SG*8800000015*0009*UPLOAD,10]

Data from tracker: Terminal reply
[CS*YYYYYYYYY*LEN*UPLOAD]
For example:[SG*8800000015*0006*UPLOAD]
Explanation: setting the terminal regular report time interval.

2.2 Set Center mobile number

Data from server:
[CS*YYYYYYYYY*LEN*CENTER,center mobile number]
For example:[SG*8800000015*0012*CENTER,00000000000]
Data from tracker:
[CS*YYYYYYYYY*LEN*CENTER]
For example:[SG*8800000015*0006*CENTER]
Explanation: setting the center mobile number and can use this number to send message command.

2.3 Set Assist center number

Data from server:
[CS*YYYYYYYYY*LEN*SLAVE,Assist center number]
For example:[SG*8800000015*0011*SLAVE,00000000000]
Data from tracker:
[CS*YYYYYYYYY*LEN*SLAVE]
For example:[SG*8800000015*0005*SLAVE]
Explanation: Setting assist center mobile number and can use this number to send message command.

2.4 Set Control password

Data from server:
[CS*YYYYYYYYY*LEN*PW,password]
For example:[SG*8800000015*0009*PW,111111]
Data from tracker:
[CS*YYYYYYYYY*LEN*PW]
For example:[SG*8800000015*0002*PW]
Explanation: Setting terminal password. Except center mobile number, all others number sending commands need add the password.

2.5 Make Phone calls

Data from server:
[CS*YYYYYYYYY*LEN*CALL,mobile number]
For example:[SG*8800000015*0010*CALL,00000000000]
Data from tracker:
[CS*YYYYYYYYY*LEN*CALL]
For example:[SG*8800000015*0004*CALL]
Explanation: Through this command to make calling for corresponding mobile number.

26. Send message

Data from server:
[CS*YYYYYYYYY*LEN*SMS,message mobile number ,content of message]
For example:[SG*8800000015*001C*SMS,00000000000,123ABC大家好]
Data from tracker:
[CS*YYYYYYYYY*LEN*SMS]
For example:[SG*8800000015*0003*SMS]
Explanation: Through this command forwarding messages to corresponding mobile numbers. Sending messages by GB232 code.

2.7 Set Monitor mobile number

Data from server:
[CS*YYYYYYYYY*LEN*MONITOR,Mobile number]
For example:[SG*8800000015*0013*MONITOR,00000000000]
Data from tracker:
[CS*YYYYYYYYY*LEN*MONITOR]
For example:[SG*8800000015*0007*MONITOR]
Explanation: Setting terminal can automatically answer coming phone call.

2.8 Set SOS mobile number

(1) The first one SOS mobile number setting

Data from server:
[CS*YYYYYYYYY*LEN*SOS1,Mobile number]
For example:[SG*8800000015*0010*SOS1,00000000000]
Data from tracker:
[CS*YYYYYYYYY*LEN*SOS1]
For example:[SG*8800000015*0004*SOS1]

(2) The second SOS mobile number setting

Data from server:
[CS*YYYYYYYYY*LEN*SOS2,mobile number]

For example:[SG*8800000015*0010*SOS2,00000000000]
Data from tracker:

[CS*YYYYYYYYY*LEN*SOS2]
For example:[SG*8800000015*0004*SOS2]

(3) The third SOS mobile number setting

Data from server:
[CS*YYYYYYYYY*LEN*SOS3, mobile number]

For example:[SG*8800000015*0010*SOS3,00000000000]
Data from tracker:
[CS*YYYYYYYYY*LEN*SOS3]
For example:[SG*8800000015*0004*SOS3]

(4) Set the thress SOS numbers at same time

Data from server: : platform sends
CS*YYYYYYYYY*LEN*SOS,mobile number,mobile number,mobile number]
For example:[SG*8800000015*0027*SOS,00000000000,00000000000,00000000000]
Data from tracker:
[CS*YYYYYYYYY*LEN*SOS3]
For example:[SG*8800000015*0003*SOS]

Explanation: Setting SOS mobile number, when there is alarm will send message and make calls to this mobile number.

2.9 OTA

Data from server:
[CS*YYYYYYYYY*LEN*UPGRADE,URL location]

Eg:[SG*8800000015*0039*UPGRADE,http://www.3g-elec.com/g29_updata/test/jt_ads.bin]
Data from tracker:
[CS*YYYYYYYYY*LEN*UP]
For example:[SG*8800000015*0007*UPGRADE]
Explanation: Controlling tracker upgrade remotely.

2.10 Set IP and port

Data from server:
[CS*YYYYYYYYY*LEN*IP,IP or domain name, port]
For example:[SG*8800000015*0014*IP,113.81.229.9,5900]
Data from tracker:
There is no answer to this command, tracker will disconnect directly at once to connect with new services.
Explanation: Setting connect platform IP and port.

2.11. Initialization

Data from server:
[CS*YYYYYYYYY*LEN*FACTORY]
For example:[SG*8800000015*0007*FACTORY]
Data from tracker:
[CS*YYYYYYYYY*LEN*FACTORY]
For example:[SG*8800000015*0007*FACTORY]
Explanation: The terminal restore factory defaults

2.12 Set languages and time zone

Data from server:
[CS*YYYYYYYYY*LEN*LZ,language,time zone]
For example:[SG*8800000015*0006*LZ,1,8]
Data from tracker:
[CS*YYYYYYYYY*LEN*LZ]
For example:[SG*8800000015*0002*LZ]
Explanation: setting terminal languages and time zone.

2.13 Inquire URL to google

Data from server:
[CS*YYYYYYYYY*LEN*URL]
For example:[SG*5678901234*0003*URL]
Data from tracker:
[CS*YYYYYYYYY*LEN*URL,google link]

For example:[SG*5678901234*006B*URL,url:
http://maps.google.com.hk/maps?q=N22.571695,E113.861404
Locate date:2014-4-23
Locate time:18:16:59]
Explanation: Inquire current URL location.

2.14 SOS message alarm on-off

Data from server:
[CS*YYYYYYYYY*LEN*SOSSMS,0 or 1]
For example:[SG*5678901234*0008*SOSSMS,0]
Data from tracker:
[CS*YYYYYYYYY*LEN*SOSSMS]
For example:[SG*5678901234*0006*SOSSMS]
Explanation: Setting whether send message to SOS number after producing SOS alarm.(0:off,1:on)

2.15 Low power message alarm on-off

Data from server:
[CS*YYYYYYYYY*LEN*LOWBAT,0 or 1]

For example:[SG*5678901234*0008*LOWBAT,1]
Data from tracker:
[CS*YYYYYYYYYY*LEN*LOWBAT]
For example:[SG*5678901234*0006*LOWBAT]
Explanation: Setting whether sending message to Center mobile number after triggering low alarm. (0:off,1:on)

2.16 Set APN

Data from server:
[CS*YYYYYYYYYY*LEN*APN,APNname,username,password,user data]
For example:[SG*5678901234*0011*APN,cmnet,,,46000]
Data from tracker:
[CS*YYYYYYYYYY*LEN*APN]
For example:[SG*5678901234*0003*APN] .
Explanation: Setting terminal APN parameter

2.17 Parameter query

Data from server:
[CS*YYYYYYYYYY*LEN*TS]
For example:[SG*5678901234*0002*TS]
Data from tracker:
[CS*YYYYYYYYYY*LEN*TS, firmware version; Device ID; IME number;IP; Port;center number;assist center number;SOS1number;SOS2number;SOS3number;GPRS time interval; battery power; language;time zone;satellite quantities;GSM signal strength;LED on-off;password;]

Explanation: Checking terminal parameter.

Eg: [SG*5678901234*00FC*TS,ver:G29_BASE_V1.00_2014.04.24_09.47.23;
ID:SG*5678901234;
imei:1234SG*56789012345;
url:113.81.229.9;
port:5900;
center:;
slave:;
sos1:;
sos2:;
sos3:;
upload:30S;
work mode:1;
bat level:3;
language:1;
zone:8.00;
GPS:NO(0);
GPRS:OK(89);
LED:OFF;
pw:123456;
]

2.18 Version query

Data from server:
[CS*YYYYYYYYY*LEN*VERNO]
For example:[SG*8800000015*0005*VERNO]
Data from tracker:
[CS*YYYYYYYYY*LEN*VERNO,version number]
For example:[SG*8800000015*0028*VERNO,G29_BASE_V1.00_2014.04.23_17.46.49]
Explanation: checking the terminal version.

2.19 Reboot

Data from server:
[CS*YYYYYYYYY*LEN*RESET]
For example:[SG*5678901234*0005*RESET]
Data from tracker:
[CS*YYYYYYYYY*LEN*RESET]
For example:[SG*5678901234*0005*RESET]
Explanation: Reboot the terminal

2.20 Locate command

Data from server:
[CS*YYYYYYYYY*LEN*CR]
For example:[SG*5678901234*0002*CR]
Data from tracker:
[CS*YYYYYYYYY*LEN*RESET]
For example:[SG*5678901234*0002*CR]
Explanation: Aroused gps module immediately, will in a state of positioning for a period of time.

2.21 Bluetooth control command

Data from server:
[CS*YYYYYYYYY*LEN*BT,open or close(1,0)]
For example:[SG*5678901234*0004*BT,1]
Data from tracker:
[CS*YYYYYYYYY*LEN*RESET]
For example:[SG*5678901234*0002*BT]
Explanation: Control the terminal bluetooth open and close. 1 is open and 0 is close.

22. Work time period setting command.

Data from server:
[CS*YYYYYYYYY*LEN*WORK,working period]
For example:[SG*5678901234*0019*WORK,6-9,11-13,13-15,17-19]
Data from tracker:

[CS*YYYYYYYYY*LEN*RESET]
For example:[SG*5678901234*0004*WORK]
Explanation: Setting the terminal work time period, and each period divided by commas.

2.23 Work time setting command.

Data from server:
[CS*YYYYYYYYY*LEN*WORKTIME,work time]
For example:[SG*5678901234*000A*WORKTIME,3]
Data from tracker:
[CS*YYYYYYYYY*LEN*RESET]
For example:[SG*5678901234*0008*WORKTIME]
Explanation: Setting terminal continuous working time, and unit is minute.

3. Appendix

Appendix 1: Location data instruction

Name	(ASII码)	Specification
Date	120414	(Day month Year) 2014 year April Dec
Time	101930	(Hour minute second)
Locate status	A	A:Positioning V:No positioning
Latitude	22.564025	Follow format DD.DDDDD. This Latitude value is 22.564025
Latitude Flag	N	N is North Latitude; S is South Latitude
Longitude	113.242329	Follow format DD.DDDDD. This Longitude value is 113.242329.
longitude Flag	E	E is East longitude W is West longitude
Speed	5.21	5.21km/hour
Direction	152	The direction at the 152°
Altitude	100	Unit is meter
satellite quantity	9	Refers to quantity of Satellite
GSM signal strength	100	(0-100) Refers to GSM signal strength(0-100) at current
Power	90	Refers to the current power rating percentage
Calculate steps	1000	1000 Calculate steps quantity is 1000
Rolling quantity	50	Rolling times is 50 times

Terminal status	00000000	Data in Hex, the meaning as follows: High 16bit represents alarm Low 16bit represents status Bit (starting from 0) Meaning(1 is sufficient) 0 Low power 1 exit geo fence 2 Enter into geo fence 3 State of the bracelet 16 SOS alarm 17 Low power alarm 18 exit Geo fence alarm 19 Enter into Geo fence alarm 20 Bracelet to remove alarm
GSM station quantity	4	Report quantity of GSM station, 0 represent not report quantity of GSM station
Connect GSM station tower	1	GSM time delay
MCC notation code	460	460 means China
MNC internet number	02	02 means China mobile
Connect GSM station area code	10133	Area code
Connect GSM station number	5173	Station number
Connect GSM station signal strength	100	signal strength
Nearby GSM station 1 location area code	10133	Area code
Nearby GSM station 1 number	5173	基站编号 GSM station number
nearby GSM station 1 signal strength	100	signal strength
Nearby GSM station 2 location area code	10133	Area code
Nearby GSM station 2 number	5173	GSM station number
nearby GSM station 2 signal strength	100	signal strength
Nearby GSM station 3 location	10133	Area code

area code		
Nearby GSM station 3 number	5173	GSM station Number
nearby GSM station 3 signal strength	100	signal strength
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