

CC828 GPRS Communication Protocol

This Protocol is used for communication between real time tracking platform server and the tracker device, command & message from server to device is download command & message, command & message from device to server is upload command & message. The command & message is transfer by TCP/IP through GPRS .

Suit for GPS Tracker:

CCTR-811/820/CCTR-821/CCTR-822/CCTR-822D/CCTR-828/CCTR-830

Version

Version 2.0

Date 2013-08-08

Version 2.1

Date 2014-04-28

Version 2.2

Date 2014-08-02

Heart Beat Data bug fixed

Notes:

The following message & command words and symbols all are english upper case letters, blank and other symbol are illegal.

1. General Upload Message (Tracker to Platform)

*HQ,YYYYYYYYYY,VV,HHMMSS,S,latitude,D,longitude,G,speed,direction,DD
MMYY,vehicle_status#

Note: * : Message Head Symbol, 1 byte.

HQ: Fixed Command, HQ is GPS Tracker Using Command, CC is remote control command.2 byte.

, : Delimiter (separator character).

YYYYYYYYYY: Tracker ID number (Normally is the 10 digital of the IMEI number after remove the last 1 digital, or the last 10 digital of the serial number),10 byte.

VV=V1: Normal message, for example Login message, Shake hand Message, Location Message, Alarm Message etc. 2 byte.

HHMMSS: GPS Time (GMT time), 6 byte.

S: GPS data valid or not (A/V), A means GPS data is valid, V means GPS data is invalid. 1 byte.

latitude : Latitude, Format is DDFF.FFFF, DD: the degree of the latitude(00 ~ 90), FF.FFFF: the minute of the latitude(00.0000 ~ 59.9999), keep 4 digitals behind the radix point, 9 bytes.

D: South or North of the Latitude(N: North,S:South),1 byte.

Longitude: Longitude, Format is DDDFF.FFFF, DDD: the degree of the longitude(00 ~ 180), FF.FFFF : the minute of the longitude(00.0000 ~ 59.9999), keep 4 digitals behind the radix point, 10 bytes.

G: East or West of the Longitude(E: East,W:West),1 byte.

Speed: Speed, from 000.00 ~ 999.99 miles/hour, keep 2 digitals behind the radix point, 6 bytes. This data maybe is nop, means the speed os zero, for example: longitude,G,,direction,means the speed is 0.

Direction: direction angle, the north is 0 degree, the other direction is the angle from the north, total is 360, clock wise, 3 bytes. This data maybe is nop, means the speed os zero, for example: longitude,G,speed,, MMDDYY, means the degree is 0.

DDMMYY: GPS date, Day/Month/Year(GMT Date), 6 bytes.

vehicle_status: Vehicle Status, 4 bytes, indicate the status of the vehicle running, Accessory status or Alarm status etc. ASCII symbol indicate the status, the following is the definition of every bit, Bit=0 means active.

Bit	Byte 1		Byte 2		Byte 3		Byte 4	
0	0	Temperature alarm	0	GPS fault alarm	0	Door Open	0	Shock Alarm
1	0	Password error alarm	0	Battery Low Alarm	0	Arm	0	SOS Alarm
2	0	GPRS error alarm	1	Nop	0	ACC Off	0	Over Speed
3	0	Turn off Engine	0	Use Backup Battery	1	Nop	0	Start engine alarm
4	0	Power Down Alarm	0	Battery Removed	1	Nop	0	Enter Geo-fence alarm
5	0	High Triggered Sensor 1 is High	0	No GPS Antenna	0	Engine Start	0	No GPS Antenna
6	0	High Triggered Sensor 2 is High	0	GPS antenna Shot	1	Nop	0	GPS antenna Shot
7	0	Low Triggered Sensor 1 is GND	0	Low Triggered Sensor 2 is GND	0	Over Speed	0	Break Geo-fence alarm

General Message Example:

Login Message: Tracker login platform, send once is OK, the platform is not

necessary to reply any information:

*HQ,1400046168,V1,055600,A,2234.3066,N,11351.6829,E,000.0,000,080813,FFFF
FBFF#

Location Message: same with login message,GPS data valid symbol is A, the platform is not necessary to reply any information:

*HQ,1400046168,V1,055600,A,2234.3066,N,11351.6829,E,000.0,000,080813,FFFF
FBFF#

If GPS data valid symbol is V, then the location should not be updated, only Online status can be updated.

Alarm Message: Shcok alarm(Byte 4 bit 0 is 0),the platform is not necessary to reply any information:

*HQ,1400046168,V1,055600,V,2234.3066,N,11351.6829,E,000.0,000,080813,FFFF
FFFE#

2、 Heart Beat / Shake Hand Message (Tracker to Platform)

When the tracker stop moving, heart beat or shake hand message is used to keep the link between tracker & platform, the shake hand message have 32 byte, the format is as follow (16 hex format):



Number	00	01	02	03	04	05	06	07	08	09	0A	0B
Meaning	Head	ID number					Time(H/M/S)			Date(D/M/Y)		
Example	24	10	30	73	10	01	05	03	16	22	07	14

Number	0C	0D	0E	0F	10	11	12	13	14	15	16	17
Meaning	Latitude				Fixed	Longitude (N . E . V)					Fixed	Fixed
Example	22	12	87	45	00	11	34	66	57	4C	00	00

Number	18	19	1A	1B	1C	1D	1F
Meaning	Fixed	Vehicle Status				Fixed	Counter
Example	00	FF	FF	FB	FF	FF	00

Description:

Head: 0x24, means the shake hand data beginning.

ID number: 0x1030731001, means the tracker ID number is 1030731001.

Time : 0x050316, means time is 05 hour 03 minute 16 seconds.

Date: 0x220714, means date is Year 2014 month is 07 and day is 22.

Latitude: 0x22128745, means latitude is 22 degree 12.8745 minute.

Longitude: 0x113466574C, means longitude is 113 degree 46.6574 minute.

Number 15 low 4 bit definition:

Bit3: 1: East Longitude, 0: West Longitude.
Bit2: 1: North Latitude, 0: South Latitude.
Bit1: 1: A (GPS Available) 0:V (GPS not available)
Bit0: Fixed 0.

Vehicle Status is same with the above 3 definition.

Counter: From 0 count, every time send one shake hand data add 1.

3. Get location description in english(Tracker to Platform):

***HQ,YYYYYYYYYY,V8,en,HHMMSS,S,latitude,D,longitude,G,speed,direction,DDMMYY,vehicle_status#**

Note:VV=V8: send command to platform to get the location description in english, 2 bytes.

en: get the location description in english.

The other is same with above.

For Example send message to platform to get location description in english:

***HQ,1400046168,V8,en,075738,A,2234.3066,N,11351.6829,E,000.0,000,080813,FF
FFFBFF#**

4. Confirm Message to Platform(Tracker to Platform):

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

Note: CMD: The command been Confirmed by tracker, 3 bytes.

Hhmmss: The time of the command sending been confirmed, 6 bytes.

The other is same with above.

5. General Download Message (Platform to Tracker)

***HQ,YYYYYYYYYY,CMD,HHMMSS,PARA1,PARA2,...#**

Note: * : Message Head Symbol, 1 byte.

HQ: Fixed Command, HQ is GPS Tracker Using Command, CC is remote control command.2 byte.

, : Delimiter (separator character).

YYYYYYYYYY: Tracker ID number (Normally is the 10 digital of the IMEI number after remove the last 1 digital, or the last 10 digital of the serial number),10 byte.

CMD: Command sending from the platform. 2-3 bytes.

HHMMSS: Download command Time (Server time), 6 byte.

PARA1,PARA2,...: Parameters, the length is not fixed.

End Symbol.

6. General Download Message (Platform to Tracker)

Arm the car from the platform:

*HQ,1400046168,SCF,135645,0,0#

Disarm the car from platform:

*HQ,1400046168,SCF,135715,1,1#

Reset and re-power on the tracker:

*HQ,1400046168,R1,150958#

Back to factory configuration:

*HQ,1400046168,S25,150114#

Set IP(58.64.155.133) and port (8011), Repeat 5 times:

*HQ,1400046168,S23,150233,58,64,155,133,8011,5#

Set over speed alarm 60km/h(about 32 miles/hour):

*HQ,1400046168,S14,150345,32#

Turn off Car oil power continually (Keep output low), time is 30 seconds:

*HQ,1400046168,S20,150637,1,30#

Turn off Car oil power with interval (output low with interval), time is 30 seconds:

*HQ,1400046168,S20,150726,0,30#

Turn on car engine oil power:

*HQ,1400046168,S20,150600,0,0#

Listen in car, Listen phone number:13987654321, tracker will call back this number, pick up the calling is OK.

*HQ,1400046168,R8,150835,13987654321#

Reset alarming from platform

*HQ,1400046168,R7,150922#

Set TCP upload time interval is 30 seconds

*HQ,1400046168,D1,151033,30,1#

7. Platform Reply Location Description in English Message

(Platform to Tracker):

Platform will reply the following message to tracker after receive the get location description in english command (V8):

*HQ,YYYYYYYYYY,I2,en,HHMMSS,DisplayTime,Code,Info_lenHQ,Information

Note: * : Message Head Symbol, 1 byte.

HQ: Fixed Command, HQ is GPS Tracker Using Command, CC is remote control command.2 byte.

, : Delimiter (separator character).

YYYYYYYYYYY: Tracker ID number (Normally is the 10 digital of the IMEI number after remove the last 1 digital, or the last 10 digital of the serial number),10 byte.

I2: Reply Command from the platform (reply the location description in english command), 2 bytes.

en: Indicate the reply the location description is english, 2 bytes.
HHMMSS: Download command Time (Server time), 6 byte.
DisplayTime: displaytime on screen, Unit is seconds, from 0-65535.
Code: code farmat, 1 is Unicode.
Info_lenHQ: Indicate the length of the information, from 1 to 256.
Information: Location Description in english content.

For Example: (The Blue is english location words, ucs2 encode):

***HQ,1400046168,l2,en,161021,10,1,26,00350030003100200058006900780069
0061006e00670020004100760065006e00750065002c002000420061006f00270061
006e002c0020005300680065006e007a00680065006e002c0020004700750061006
e00670064006f006e0067002c0020004300680069006e0061002c002000350031003
8003100320036**