

CC800 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-800/CCTR-801/CCTR-803/CCTR-808S/CCTR-810

1. Version

Version 1.0 Date 2009-08-12

Version 1.1 Date 2013-08-28

Version 1.2 Date 2014-04-25 Download message without ID

2.1 Symbol Definition

Data Type	Description
CHAR	Signal ASCII word
C_STRING	ASCII word string, if the length not reach definition, add ASCII blank (0x20H) on the right.
N_STRING	ASCII digital string (0-9), if the length not reach definition, add ASCII zero (0x30H) on the left.
H_STRING	ASCII digital string (0-F), if the length not reach definition, add ASCII zero (0x30H) on the left.
HEX_STRING	ASCII HEX word string, for example 1 is 31, if the length not reach definition, add ASCII zero (0x30H) on the left.
BIN	Binary digital
BYTE	8 bit integer without mark,0-255

2.2 Frame Format

The command & message between device and server is transferred with data frame format, the full format data frame definition is as follow:

Frame head sign	Message serial number / time	Command word
1 byte	12 byte	4 byte

Message contents
N byte (N is less than 2K)

Frame end sign
1 byte

2.3 Command & Message

2.3.1 Frame head & end sign

The sign is used to indicate the head and end of the frame, frame start with 0X2AH(word “*”) as head sign, and frame end with 0X5EH(word “^”) as end sign.

2.3.2 Command List

Length: 4 byte, C_STRING type

Function: Define data frame command type, it indicate the command function:

Table 2 Command Definition

Command Type	Subclass	Serail number	Command Description	Remark
D (Download message)	A	00	Alarm config message	Prealarm and alarm message
		01	RED alarm message	
	B	00	Locate & check device	Device config
		01	Shake hand message	
		03	Read device configuration	
		04	Read device running status	

		06	IP address	
		07	Center phone number	
		11	Set phone number	
		12	Set max speed	
		14	Set upload interval	
		15	Listen in	
		17	Read device phone number	
	C	00	Public message	Public communica te message
		01	Dispatch Information	
		02	Reply call message(Taxi)	
		03	Call message (Taxi)	
		04	Navigation message	
	D	00	Set equitime upload	Locate message
		01	Set equidistance upload	
	E	00	Reply yellow alarm upload message	Reply message
		01	Reply red alarm upload message	
		07	Reply pick up passenger success (Taxi)	
	F			
	G			
	H	00	Circuit control signal	Control Signal
		01	Oil supply control signal	
		02		
		03		
	X	00	Upload message reply message	Extended message
		01	Alarm config message	
		02	Device function config command	
		03	Device mode config command	
		04	Initial device command	
		05	Geo-fence config command	
		06	Device login platform reply message	
U (Upload message)	A	00	Yellow alarm message	Prealarm and alarm message
		01	Red alarm message	
	B	00	Shake hand message	Device status information
		02	Reply read device config message	
		03	Reply read device running status message	

		04	Locate & Check message	
		05	Device logon information	
	C	00	Upload information	Communication message
		07	Pick up passenger success message (Taxi)	
	D	00	Continuous Equitime upload message	Device location information
		01	Continuous Equidistance upload message	
		02	Continuous upload message end	
		04	Break point upload	
	E	00	Reply download set alarm config message	Reply message
		01	Reply download red alarm message	
		04	Reply dispatch message	
		05	Reply read phone number config	
		06	Reply phone number config	
		08	Reply set equitime upload message	
		09	Reply set equidistance upload message	
		10	Reply set upload interval when device is still	
		20	Reply accept call taxi message(Taxi)	
		21	Reply call taxi message (Taxi)	
		23	Reply navigation message	
	F			
	G			
	H	00	Reply circuit control	Reply control signal
		01	Reply oil supply control	
		02		
	X	00	General download message reply message	Extended message

Not defined serial command is used for future.

2.3.3 Device ID

Length : 15 byte, C_STRING type.

2.3.4 Message serial number / Time

Length : 12 byte, C_STRING type.

When server send reply message to device, this 12 byte contents is the message serial number, when the device send message to server is the same serial number, the other condition this 12 byte message is date and time message.

2.3.5 Message Content

Length: not fixed, <=2048 byte, and can be nop.

Function: define the device message of the command.

3. Upload Command (Tracker to Server)

3.1 Device login message

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	UB05	C_STRING	4	
Device ID	Device ID	C_STRING	15	
Message		C_STRING	Not fixed	
Message contents	UB05+XX...X+GPS Data UB05 is fixed command XX...X: Device ID, 15 byte.			
End Symbol	^	CHAR	1	

For Example

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*040331141830UB05CW0800C12345678013255A2240.8419N11408.8178E000.10403
3129.2011111111L000023^
040331141830: upload message date and time is :2004-03-31, 14:18.30
UB05: Fixed command (Register)
CW0800C12345678: GPS Tracker Serial ID
013255: GPS time is 01:32:55
A: GPS is valid
2240.8419N11408.8178E: Location latitude & longitude
000.1: Speed, unit is miles/hour
040331: GPS date is 2004-03-31
29.20: The moving direction angle from north (total 360)
11111111: I/O status (Power on/off, ACC on/off, Empty/Fully, Door Open/Close)
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L000023: the miles age is 23 meters	
Platform Reply command	DX061(Success)

3.2 Shake hand message

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	UB00	C_STRING	4	
Message		C_STRING	3	
Message contents	HSO			
End Symbol	^	CHAR	1	

For Example	
*040331141830UB00HSO^	
Means upload message date and time is :2004-03-31, 14:18.30, upload shake hand message.	
Platform Reply command	DB01

3.3 Reply Locate immediately Message

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	UB04	C_STRING	4	
Device ID	Device ID	C_STRING	8	Last 8 digitals of ID
Message		C_STRING	Not fixed	
Message contents	UB04X...XY+GPS Data UB04 is fixed command. X...X: Device ID, 8 byte. Y: 1 byte, 0,1,2,3,4,5,6 0: No network or can not dial number. 1: Dial success, but can not connect SOCKET (Need follow current IP and Port) 2: No IP address, need set. 3: Voice status, can talking or send SMS. 4: Reply locate immediately once. 5: GPS error, GPS can not locate. 6: GPS data is not valid.			

End Symbol	^	CHAR	1	
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For Example	
*040331141830UB04123456784013255A2267.6805N11415.1885E000.104033129.201111111L000023^	
Means upload message date and time is :2004-03-31, 14:18.30, upload ID is CW9999C12345678, GPS data & time is 2004-03-31, 01:32.55. GPS is valid, and location is: 2267.6805N11415.1885E, speed is 000.1miles/hour, direction is 29.20 from north, I/O status is 11111111, and the miles age is 23 meters.	
Platform Reply command	Not necessary reply

3.4 Upload red alarm message

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	UA01	C_STRING	4	
Message		C_STRING	0	
Message contents	UA01XZ...Z+GPS Data UA01 is fixed command X: alarm code, 1 byte, HEX. Z...Z: Alarm content, ASCII word Alarm Code: 0: Device power supply disconnect (only send once) 1: There is accident (send every 3 seconds total 8 times until receive the reply message) 2: Car is hijack (send every 3 seconds total 8 times until receive the reply messages) 3. Car is alarming (send every 3 seconds total 8 times until receive the reply messages)			
End Symbol	^	CHAR	1	

For Example	
*040331141830UA012013255A2267.6805N11415.1885E000.104033129.201111111L000023^	
Means upload message date and time is :2004-03-31, 14:18.30, upload car is hi-jack alarm,GPS data & time is 2004-03-31, 01:32.55. GPS is valid, and location is: 2267.6805N11415.1885E, speed is 000.1miles/hour, direction is 29.20 from north, I/O status is 11111111, and the miles age is 23 meters.	
Platform Reply command	DE01

3.5 Equitime Upload Current Location Message

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	UD00	C_STRING	4	
Message		C_STRING	Not fixed	
Message contents	UD00+GPS Data UD00 is fixed command GPS Data refer GPS data format.			
End Symbol	^	CHAR	1	

For Example	
*040331141830UD00013255A2267.6805N11415.1885E000.104033129.2011111111L000023^	
Means upload message date and time is :2004-03-31, 14:18.30, GPS data & time is 2004-03-31, 01:32.55. GPS is valid, and location is: 2267.6805N11415.1885E, speed is 000.1miles/hour, direction is 29.20 from north, I/O status is 11111111, and the miles age is 23 meters.	
Platform Reply command	Not necessary reply

3.6 Upload Location Message Record in Memory

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	UD04	C_STRING	4	
Message		C_STRING	Not fixed	
Message contents	UD04+GPS Data UD04 is fixed command GPS Data refer GPS data format. This command is used to upload the location record in memory (when GSM network is not available, the tracker will record the location in memory, and will upload the location after the GSM network is available)			
End Symbol	^	CHAR	1	

For Example	
*040331141830UD04013255A2267.6805N11415.1885E000.104033129.2011111111L000023^	
Means upload message date and time is :2004-03-31, 14:18.30, GPS data & time is 2004-03-31, 01:32.55. GPS is valid, and location is: 2267.6805N11415.1885E, speed is 000.1miles/hour, direction is 29.20 from north, I/O status is 11111111,	

and the miles age is 23 meters.	
Platform Reply command	Not necessary reply

3.7 Reply Cut Car Power Supply Command from Server (IO1)

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	UH00	C_STRING	4	
Message	YY	C_STRING	Not fixed	
Message contents	UH00+YY UH00 is fixed command YY is oil power supply status, 2 byte. 00: disconnect car power supply, engine will be turned off. 01: connect car power supply, engine will keep running.			
End Symbol	^	CHAR	1	

For Example	
*040331141830UH0000^	
Means upload message date and time is :2004-03-31, 14:18.30, reply disconnect car power supply message	
Platform Reply command	Not necessary reply

3.8 Reply Cut Oil Power Supply Command from Server (IO2)

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	UH01	C_STRING	4	
Message	YY	C_STRING	Not fixed	
Message contents	UH01+YY UH01 is fixed command YY is oil power supply status, 2 byte. 00: disconnect oil power supply, engine will be turned off. 01: connect oil power supply, engine will keep running.			
End Symbol	^	CHAR	1	

For Example	
*040331141830UH0100^	
Means upload message date and time is :2004-03-31, 14:18.30, reply disconnect	

oil power supply message	
Platform Reply command	Not necessary reply

4. Download command (Server to Tracker)

4.1 Reply Device Login Message

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	DX06	C_STRING	4	
Message	X	C_STRING	1	
Message contents	DX06+X DX06 is fixed command X=1: login success X=0: login failed, device not exit.			
End Symbol	^	CHAR	1	

For Example	
*040331141830DX061^	
Means download message date and time is :2004-03-31, 14:18.30, reply the logon success.	
Tracker Reply command	Not necessary reply

4.2 Reply Shake Hand Message

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	DB01	C_STRING	4	
Message	HSO	C_STRING	3	
Message contents	DB01+HSO DB01 is fixed command HSO is Shank hand message			
End Symbol	^	CHAR	1	

For Example	
*040331141830DB01HSO ^	
Means download message date and time is :2004-03-31, 14:18.30, download shake	

hand message to device.	
Tracker Reply command	Not necessary reply

4.3 Locate immediately from Platform Server

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	DB00	C_STRING	4	
Message	LOG	C_STRING	3	
Message contents	DB00+LOG			
End Symbol	^	CHAR	1	

For Example	
*040331141830DB00LOG ^	
Means download message date and time is :2004-03-31, 14:18.30, trigger device locate immediately and upload location immediately.	
Tracker Reply command	Tracker reply UB04 command

4.4 Reply Upload Alarm Information

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	DE01	C_STRING	4	
Message	X	C_STRING	Not fixed	
Message contents	DE01+X DE01: is fixed command X is alarm information X=0: received power down alarm X=1: received traffic accident X=2: received hi-jack alarm X=3: received car alarm (Shock alarm or door open etc)			
End Symbol	^	CHAR	1	

For Example

*040331141830DE012 ^	
Means download message date and time is :2004-03-31, 14:18.30, reply received hi-jack alarm.	
Tracker Reply command	Not necessary reply

4.5 Cut car power supply (IO1)

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	DH00	C_STRING	4	
Message	YY	C_STRING	2	
Message contents	DH00+YY DH00 is fixed command YY: control signal, 2 byte, fixed length. YY=00, means disconnect the car power supply (IO1 is low output ,Engine will be cut off) YY=01, means connect the car power supply (IO1 is high or open drain output , Engine will keep running)			
End Symbol	^	CHAR	1	

For Example	
*040331141830DH0001 ^	
Means download message date and time is :2004-03-31, 14:18.30, connect the car power supply (IO1 is high or open drain output , Engine will keep running).	
Tracker Reply command	Tracker reply UH00 command

4.6 Cut oil power supply (IO2)

Frame	Command word	Type	Length (Byte)	Description
Head	*	CHAR	1	
Serial / time		C_STRING	12	
Command	DH01	C_STRING	4	
Message	YY	C_STRING	2	
Message contents	DH01YY DH01 is fixed command YY: control signal, 2 byte, fixed length. YY=00, means disconnect the oil power supply (IO2 is low output ,Engine will be cut off) YY=01, means connect the oil power supply (IO2 is high or open drain output , Engine will keep running)			

End Symbol	^	CHAR	1	
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For Example	
*040331141830DH0101 ^	
Means download message date and time is :2004-03-31, 14:18.30, connect the oil power supply (IO2 is high or open drain output , Engine will keep running).	
Tracker Reply command	Tracker reply UH01 command

4. GPS data format

Frame	Word	Type	Legth(Byte)	Description
Time	HHmmSS	N_STRING	6	Hours / minutes / seconds
GPS valid or not		CHAR	1	A means GPS data is valid, V menas GPS data is not valid
Latitude		N_STRING	9	The first 2 byte unit is degree (0 - 90), and the follwing 7 byte unit is minute.
South or North	"N" or "S"	CHAR	1	N is north , and S is south
Longitude		N_STRING	10	The first 3 byte unit is degree (0 - 180), and the follwing 7 byte unit is minute.
East or West	"E" or "W"	CHAR	1	E is East, and W is West
Speed		N_STRING	5	Unit is Nautical Mile / hour
Date	YYMMDD	N_STRING	6	Year / month / day
Direction		N_STRING	6	0-360, clockwise from north
IO State		C_STRING	8	8 bit IO Power on off, ACC on away, Empty or Fully, Door open close.
Distance mark		CHAR	1	L means followed distance digit.
Distance			6	Distance digit, Unit is metre.