GPS Tracker Communication Protocol

1. Summarize

This tracker connects to platform server with **TCP**. The way for connection is that device connects to the platform server forwardly. After connecting to the platform server, tracker will feedback a enrolling message. The enrolling message contains the device's ID. If the device received the answer from the platform server, it will stop to sending enrolling message but send continuous feedback message. The continuous feedback message not contains the device ID. The platform server binds the device by connection. One connection represents a device ID. When the connection cuts off, the device will connect the platform server automatically and send out a device enrolling message. Beside, the device will send out a hand-shaking message intervals of time. The hand-shaking message contains Device ID. After receiving the handshaking answer message from the platform server, the device waits for sending the handshaking message in next period.

1.1 Updated Version Instruction

V1.4 2008/10/23	1、Increase setting the data send intervals of ACC Switch 2、Increase the controlling of device's restarted command
V1.5 2008/11/4	1、Increase the setting Geo-fence command

2. Message Instrument

2.1 Data Type definition

Data Type	Instruction
CHAR	Single **ASCII code character**
C_STRING	Contain **ASCII** character string. When fix digits, fill in Binary system of bank（**0x20H**）on right for lacking digit to fix a long time except for special instruction.
N_STRING	Contain the digit character string of 0.9. When fix digits, fill in ASCII code 0(Ox30H) on left for lacking digit except for special instruction.
H_STRING	Contain the digit character string of O. F. When fix digits, fill in ASCII code 0(Ox30H) on left for lacking digit except for special instruction.
HEX_STRING	Hexadecimal system character string. Such as 1, use "31" for indication. When fix digits, fill in ASCII code 0 (Ox30H) on left for lacking digit except for special instruction.
BIN	Binary system data
BYTE	8 digits without symbol integer,**0..255**

2.2 Message format

GPS Tracker exchanges the information with network gateway through data frames transmitting，using TCP protocol. Full data frames structure definition for GPRS is as following:

Head	Serial number / Time	Command	Message Body	Trail
1 byte	12 byte	4 byte	N byte (N≤1K)	1byte

Each Full data frame must contain: Head symbol, Serial Number/ Time, Command word, Message body, Trail symbol

2.3 Message field definition Y

2.3.1 Head/Trail symbol digit

Symbol digit figures the beginning and ending of the message frame. 0x28H (character "(") as beginning symbol，and 0x29H (character ")") as ending symbol.

2.3.2 Command word

Length：4 bytes，C_STRING character

Function：Define the type of operated message for data frame transmitting, and

figures the function of data. The definition is as following,

Table 2 Message Definition

Main first types of Message	Second types of Message	Message serial NO. #	Command description	Remark
A (Down Message)	P	00	One time calling message 3.1.5	Device parameter message
		01	Response handshake signal message 3.1.1	
		03	Read device parameter configuring message	
		04	Read device operated status message	
		05	Device login response message 3.1.2	
		07	Center No. configuring message	
		11	Cell phone NO. configuring message	
		12	Setting vehicle high and low limit speed 3.1.8	
		15	Monitor Command	
		17	Read device cell phone configuring	
	Q	00	Common Message	General communication message
		01	Attemper Message	
		02	Answer of calling message(Taxi)	
		03	Calling Message(Taxi)	
		04	Navigation Message	
	R	00	Isochronous for continues feedback configuring 3.1.3	Vehicle positioning Message Answer message
		01	Isometry for continues feedback configuring	
		05	Set ACC open sending data transmiting intervals 3.1.12	
		06	Set ACC open sending data transmiting intervals 3.1.13	
	S	01	Answer Alarm Message 3.1.4	Answer signal
		07	Answer Message for getting customer successfully (Taxi)	
	T	00	Control the restarted message of the device 3.1.11	Control signal

	V	00	Circuit control signal 3.1.9	
		01	Oil control signal 3.1.10	
		02	One key configuring command	
		03	Read one key configuring	
	X	00	Answer currency up explaining result message	Expanding message
		01	Alarm configuring message	
		02	Device Function configuring command	
		03	Device mode configured command	
		04	Intialized device command	
		05	Setting Geo-fence Message 3.1.14	
B (Up Message)	O	01	Alarm message 3.2.4	Alarm message
	P	00	Handshake signal message 3.2.1	Device status message
		02	Answer device parameter configured message	
		03	Answer device operated status message	
		04	Answer calling message 3.2.5	
		05	Anser device login response message 3.2.2	
		12	Answer vehicle high and low speed limit 3.2.8	
		07	Message for getting customer successfully (Taxi)	
	R	00	Isochronous for continues feedback message 3.2.6	Vehicle positioning message
		01	Isometry continous feedback message	
		02	Continues feedback ending messsage3.2.7	
		05	Answer the Setting ACC open sending data transmiting intervals 3.2.12	
		06	Answer the Setting ACC open sending data transmiting intervals 3.2.13	
	S	04	Answer attempered Message	Answer

		05	Answer reading called configuring number	message
		06	Answer calle configuring number	
		08	Answer setting isochronous feedback message 3.2.3	
		09	Answer setting Isometry feedback message	
		20	Answer response calling message (Taxi)	
		21	Answer calling message(Taxi)	
		23	Answer navigation message	
	T	00	Answer the restarted message of the device 3.2.11	
	U	00	Answer the Setting Geo-fence Message 3.2.14	
	V	00	Answer circuit control 3.2.9	Answer control sign
		01	Answer oil control 3.2.10	
		02	Answer enquiring of one key setting	

Reserved the non- definition message for expanding message in future

The words in red is the functions the device had.

2.3.3 Device ID

Length：15 bytes (Fixed); Type: C_STRING.

Function：This field for fixing the device. Only when the device sends the device login message and handshake message, it will send the device ID, and other message will not send device ID. The platform fixs device by device ID. The usual format for device ID is ”0000” + ”telephone number”. The reference format is : ”000013612345678”

2.3.4 Message running NO. / Time

Length：12 bytes (Fixed); Type: C_STRING

When centre need response message, the 12 bytes figures the message running NO. And device’s feedback should have the same running NO. with the sent message by the centr.Other time, the 12 bytes is the time field.

2.3.5 Message body

Length：no fixed,<=1024 bytes，also can be blank。

Function：Confirm the server data message under corresponding command.

3. Command Message

3.1.Down Message（platform server sending）

3.1.1 Answer handshake signal message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AP01	C_STRING	4	
Message body	Message content	C_STRING	3	
Message content	HSO			
Ending identifier	)	CHAR	1	
For example：				
(013612345678**AP01**HSO) Figures the sending message time is 2008-8-30-14:18:30, down response handshake signal message.				
Response	No need response			
Instruction：	This message is available to all device			

3.1.2 Device login response message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AP05	C_STRING	4	
Message body	Message content	C_STRING	non	
Message content				
Ending identifier	)	CHAR	1	

For example	
（013612345678**AP05**）	
Instruction：	This message is available to all device

3.1.3 Same time continues feedback configure

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AR00	C_STRING	4	
Message Body		C_STRING	8	
Message Content	AR00XXXXYYZZ AR00：Fixed key words XXXX：Interval for each message of continues feedback. hex。Unit：Second, 4 characters in all, H_STRING. The max is 0xFFFF seconds。When XXXX＝0,the device stops continues feedback. YYZZ：The total time for feedback, 16 advance system. Unit：YY：Hour、ZZ：Minute. 4 characters in all，H_STRING，The max is 0xFFFF，ie:255 hours 255 minutes. When YYZZ＝0, according to the time intervals, continues feedback. When both XXXX and YYZZ are not 0，it figure that feedback according to the time intervals, when it up to the total time, it automaticly stop to feedback			
Ending identifier	)	CHAR	1	

For example：	
(013612345678**AR00**000140024) Figures the sending message time is 2008-8-30-14:18:30. Down fixed time to set continues feedback. Feedback GPS data every 20 (16*1 + 4) seconds and feedback 36 (16 * 2 + 4) minutes in all.	
Response	Device response BS08
Sending	Short Message, GPRS

mode	
Instruction	This message is available to ecolomic device and navigation device. In the mode of SMS to continues feedback, if set time interval is less than the Min time interval (Set by the device manufacturer),it will continues feedback according to the Min time interval, otherwise continues feedback according to the set time. The data mode is the same as the SMS mode.

3.1.4 Answer Alarm Message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AS01	C_STRING	4	
Message body		C_STRING	1	
Message Content	AS01X X：The type of alarm for BO01X up alarm message.1character,16 advance system, ASCII character 0：Cut off vehicle oil 1： Happen accident 2： Vehicle rob (SOS help) 3：Vehicle anti-theft alarm 4：Vehicle low speed alarm 5：Vehicle over speed alarm 6. Alarm out of Geo-fence			
Ending identifier	)	CHAR	1	
For example:				
(013612345678**AS01**2) Figures the sending message time is 2008-8-30-14 :18:30, answer the up vehicle rob police				
Response	No need response			
Instruction：	This message is available to all device			

3.1.5 One time enquiry message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command	AP00	C_STRING	4	

word				
Message body	Message content	C_STRING	0	
Message body				
Ending identifier	)	CHAR	1	
For example:				
（013612345678**AP00**） figures the sending message time is 2008-8-30-14 :18:30,closed the oil。Down one time calling message.				
Response	Device response BP04			
Instruction：	This message is available to all device			

3.1.8 Setting vehicle high and low limit speed

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AP12	C_STRING	4	
Message Body	Message content	C_STRING		
Message Content	H050L030			
Ending identifier	)	CHAR	1	
For example：				
(013612345678**AP12** H050L030) figures the sending message time is 2008-8-30-14 :18:30.Setting the up limit speed is50km/h,low limit is 30km/h.When up limit is 000,it figures cancel alarm up limit, and When down limit is 000,it figures cancel alarm down limit. Less 3 digits of the speed, full 0 on left. Alarm refer to 3.2.4。				
Response	BP12			

Instruction:	This message is available to all device

3.1.9 Circuit control signal

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AV00	C_STRING	4	
Message Body	Message content	C_STRING		
Message Content	“1”or“0”, “1”figures opening circuit,“0”figures closing circuit.			
Ending identifier	)	CHAR	1	
For example：				
(013612345678**AV00** 0) Figures the sending message time is 2008-8-30-14:18:30, closed the circuit.				
Response	BV00			
Instruction:	This message is available to all device			

3.1.10 Oil control single

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AV01	C_STRING	4	
Message body	Message content	C_STRING		

Message content	“1”or“0”,“1”figures opening oil，“0”figures closing oil。			
Ending identifer	)	CHAR	1	
For example：				
(013612345678**AV01** 0) figures the sending message time is 2008-8-30-14 :18:30,closed the oil。				
Responds：	BV00			
Instruction：	This message is available to all device			

3.1.11 Control the restarted message of the device

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AT00	C_STRING	4	
Message body	Message Content	C_STRING		
Message content	no			
Ending identifier	)	CHAR	1	
For example				
(013612345678**AT00**) Figures the sending message time is 2008-8-30-14 :18:30,the device restart.				
Response	BT00			
Instruction：	This message is available to all device			

3.1.12 Set ACC open sending data intervals

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command	AR05	C_STRING	4	

word				
Message body	Message content	C_STRING		
Message content	AR05XXXX AR05：Fixed keywords XXXX：The time for sending data intervals for the ACC Open, hex. Unit：Second			
Ending identifier	)	CHAR	1	
For example				
(013612345678**AR05**0014) Figures the sending message time is 2008-8-30-14:18:30, it sends back intervals 20 seconds when the ACC is opening.				
Response	BR05			
Instruction:	This message is available to all device			

3.1.13 Set ACC close sending data intervals

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AR06	C_STRING	4	
Message body	Message content	C_STRING		
Message content	AR06XXXX AR06：Fixed keywords XXXX：The time for sending data intervals for the ACC Open, Hex. Unit：Second			
Ending identifier	)	CHAR	1	
For example				
(013612345678**AR06**003C) Figures the sending message time is 2008-8-30-14 :18:30,it sends back intervals 20 seconds when the ACC is closing.				
Response	BR06			
Instruction:	This message is available to all device			

3.1.14 Setting Geo-fence Message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	AX05	C_STRING	4	
Message body	Message content	C_STRING		
Message content	AX05 N,D, Minlatitude, Maxlatitude, G, Minlongitude, Maxlongitude AX05：Fixed Keywords N：”0” or “1”，”0”, figures cancel Geo-fence, “1” figures sets Geo-fence. If for cancelling the Geo-fence, the back data cannot be sent out. D：Standard for latitude, N, north latitude; S: south latitude. Minlatitude: lower limit for latitude, Format: DDFF.FFF, DD：latitude’s degree (00 ~ 90), FF.FFF：latitude’s cent (00.0000 ~ 59.999)，reserve three digit decimal fraction. Maxlatitude：upper limit for latitude, Format: DDFF.FFF, DD：latitude’s degree (00 ~ 90), FF.FFF：latitude’s cent (00.0000 ~ 59.999)，reserve three digit decimal fraction. G：Standard for longitude, E, east longitude; S: south longitude. W: west longitude Minlongitude: lower limit for longitude, Format: DDDFF.FFF，DDD： Longitude’s degree (000 ~ 180), FF.FFF：longitude’s cent (00.0000 ~ 59.999), reserve three digit decimal fraction. Minlongitude：upper limit for longitude, Format: DDDFF.FFF，DDD： Longitude’s degree (000 ~ 180), FF.FFF：longitude’s cent (00.0000 ~ 59.999), reserve three digit decimal fraction.			
Ending identifier	)	CHAR	1	
For example				
(013612345678**AX051,** N,2245.318,2246.452,E,11233.232,11355.175) Figures the sending message time is 2008-8-30-14 :18:30.Set Geo-fence.,lower limit				

for latitude is 22 degree 45. 318 cent，upper limit for latitude is 22 degree 46.452 cent; lower limit for longitude is 112 degree 33.232 cent，upper limit for longitude is 113 degree 55.175 cent.	
Response	BU00
Instruction:	This message is available to all device

3.2.Up message（The device Sending）

3.2.1 Handshake signal Message

Message Field	Field value	Type	Length (byte)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BP00	C_STRING	4	
Device ID	Device ID	C_STRING	15	
Message body		C_STRING	3	
Message content	0000136123456780HSO			
Ending identifier	)	CHAR	1	
Example:：				
（013612345678**BP00**0000136123456780HSO） figures the sending message time is 2008-8-30-14 :18:30.Up data handshaking message, “000013612345678”is device’s ID。				
Response	Centre service response AP01			
Instruction:	This message is available to all device			

3.2.2 Login message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BP05	C_STRING	4	
Device ID	Terminal ID	C_STRING	15	
Message body		C_STRING	60	
Message content	15 terminal ID ＋ GPS data			
Ending identifier	)	CHAR	1	
Example：				
(013612345678**BP05**000013612345678080524A2232.9806N11304.9355E000.11012 41323.8700000000L000450AC)				
Response：	Centre service response AP05			
Instruction：	This message is available to all device			

3.2.3 Continuous answer setting isochronous feedback message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BS08	C_STRING	4	
Message Body		C_STRING	8	

Message Content	BS08XXXXYYZZ BS08：Fix key words XXXX：interval of time every each return news。Unit：second，total of 4 bytes，H_STRING，up to 65535 seconds。XXXX＝0, stop to return message。 YYZZ：total return time，Unit：YY：Hour、ZZ：Minute。Total of 4 bytes，hexadecimal，up to FFFF，means 255 hours and 255 minutes。When YYZZ＝0,then ceaselessly return according to the interval of time。 When XXXX and YYZZ unequal to，then means ceaselessly return by time interval，stop return until reach the total time。			
Ending identifier	)	CHAR	1	
Example：				
（013612345678**BS08**00050014） Showing the time for send message at 14:18:30 March 31,2004，return GPS data every 5 seconds，total of 20 minutes。				
Response：	No need to response			
Instruction	This message applies to economically terminals and navigational terminals。Ceaselessly return, after the mode of short message. If the interval of set time is less than the interval of minimum time（set by the terminal manufacturers），then the time of ceaselessly return according to the interval of minimum time，if not, then according to the interval of the set time。Data model and short message model are the same.			

3.2.4 Alarm message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning	(	CHAR	1	

identifier				
Running NO./Time		C_STRING	12	
Command word	BO01	C_STRING	4	
Message Body		C_STRING	61	
Message Content	BO01X+GPS data BO01：Fixed keywords X：Specific alarm information code，1 byte，Hexadecimal。 Alarm information： 0：Vehicle power off 1：Accident 2：Vehicle robbery（SOS help） 3：Vehicle anti-theft and alarming 4：Lowerspeed Alert 5：Overspeed Alert 6:Alarm when out of Geo-fence			
Ending identifier	)	CHAR	1	

Example：

（013612345678**BO01**9061830A2934.0133 N10627.2544E040.0080331309.6200000000L000770AD）

Showing the time for send message at 14:18:30,March 31,2008，add 8 hours is china time. Alarm message and vehicle robbery。GPS data acquisition time is March 31,2008， Universal time is 6:18:30。“A” shows the data available， 29 degrees,34.0133 minutes north latitude， 106 degrees 27.2544 minutes east longitude，speed is 040.0 km/h，the angle is 309.62 degrees, from due north。”L” means the sum of distance, unit is meter，mileage statistic。

Response：	Centre response AS01
Instruction	This message applies to all terminals。Send the information up to 10 times every30 seconds，No longer to send the information after receive the platform response。

3.2.5 Answer Calling Message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BP04	C_STRING	4	
Message Body		C_STRING	Random length	
Message Content	BP04＋GPS data BP04：fix Command Word。			
Ending identifier	)	CHAR	1	
Example				
（013612345678**BP04**080525A2934.0133N 10627.2544E000.0141830309.6200000000L00000023） Showing the time for send message at 22:18:30,on May 25.Upterminal news（center response by one roll call），GPS data acquisition time is May25,2008，Universal time is 14:18:30，”A” shows the data available，29 degrees,34.0133 minutes north latitude，106 degrees 27.2544 minutes east longitude，speed is 0km/h，the angle is 309.62 degrees, from due north.。				
Response	No			
Instruction：	This message is available to all device			

3.2.6 Isochronous for continues feedback message

Message Field	Message Value	Type	Length (Character)	Instruction

Beginning identifier	（	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BR00	C_STRING	4	
Message body		C_STRING		
Message body	BR00＋GPS data			
Message content	）	CHAR	1	
Ending identifier				
Example				
(013612345678**BR00**080612A2232.9828N11304.9297E000.0022828000.0000000000L000230AA)				
Response	No			
Instruction	This message applies to economically terminals and navigational terminals。Continuously return total time and distance，or receive the message of stop continuously return message from the center., then send the ending message to center。			

3.2.7 Continues feedback ending message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	

Command word	BR02	C_STRING	4	
Device ID		C_STRING	Random length	
Message body	BR02 ＋ GPS data			
Message content	)	CHAR	1	
Ending identifier				
Example：				
Response：	No			
Instruction	This message applies to economically terminals and navigational terminals。Continuously return total time and distance，or receive the message of stop continuously return message from the center., then send the ending message to center			

3.2.8 Setup the speed of the Car

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BP12	C_STRING	4	
Message body	Message Content	C_STRING		
Message body	H0501L030			

Message content	)	CHAR	1	
Ending identifier				
Example：				
(013612345678**BP12** H0501L030)				
Instruction：	This message is available to all device			

3.2.9 Control circuit

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Serial number/Time		C_STRING	12	
Command Word	BV00	C_STRING	4	
Message Body	Message Content	C_STRING		
Message Content	“1”or“0”,“1” means circuit has been opened，“0” means circuit has been closed			
Close Identifier	)	CHAR	1	
Example：				
Response：	No			
Instruction：	This message is available to all device			

3.2.10 Control oil

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning	(	CHAR	1	

identifier				
Running NO./Time		C_STRING	12	
Command word	BV01	C_STRING	4	
Device ID	Message content	C_STRING		
Message body	“1”or“0”,“1”means oil has been opened，“0”means oil has been closed。			
Message content	)	CHAR	1	
Ending identifier				
Example：				
Response：	No			
Instruction：	This message is available to all device			

3.2.11 Answer the restarted message of the device

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BT00	C_STRING	4	
Message Body	Message Content	C_STRING		
Message Content	no			

Ending identifier	)	CHAR	1	
Example：				
Response：	No			
Instruction：	This message is available to all device			

3.2.12 Answer the Setting ACC open sending data intervals

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BR05	C_STRING	4	
Message Body	Message Content	C_STRING		
Message Content	no			
Ending identifier	)	CHAR	1	
Example：				
Response：	No			
Instruction：	This message is available to all device			

3.2.13 Answer the Setting ACC close sending data intervals

Message Field	Message Value	Type	Length (Character)	Instruction

Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	BR06	C_STRING	4	
Message Body	Message Content	C_STRING		
Message Content	no			
Ending identifier	)	CHAR	1	
Example：				
Response：	No			
Instruction：	This message is available to all device			

3.2.14 Answer the Setting Geo-fence Message

Message Field	Message Value	Type	Length (Character)	Instruction
Beginning identifier	(	CHAR	1	
Running NO./Time		C_STRING	12	
Command word	ＢＵ００	C_STRING	4	
Message Body	Message Content	C_STRING		
Message Content	ＢＵ００N ＢＵ００：Command N：0 or 1,“0”figures answer the cancelling Geo-fence. “1” figures answer setting Geo-fence.			

Ending identifier	)	CHAR	1	
Example：				
Response：	No			
Instruction：	This message is available to all device			

4. Appendix

4.1. The format definition of GPS location message

Message Field	Message Value	Type	Length (Character)	Instruction
Time	YYMMDD	N_STRING	6	Two bytes for each year/month/day

The availability of GPS data		CHAR	1	“A” or “V”. “A” means the availability of GPS data，”V” means the invalidation of GPS data.
Latitude		N_STRING	9	The unit is degree for he front two bytes，from 0～90；the unit is cent for later seven bytes。
Latitude indicator	“N” or “S”	CHAR	1	“N” means north latitude，”S” means south latitude
Longitude		N_STRING	10	The unit is degree for he front three bytes, from 0～180；the unit is cent for later seven bytes
Longitude indicator	“E” or “W”	CHAR	1	“E” means east longitude，”W” means west longitude
Speed		N_STRING	5	The unit is km/h
Time	HHMMSS	N_STRING	6	Two bytes of the hour/minute/second
Orientation		N_STRING	6	
IO State	“0” or “1”	N_STRING	8	The 8 bits of IO The first bit representative of the main power switch, "0" means the main power-on, "1", means the main power-off. The second bit on behalf of the ACC (ignition), "0" means ACC off, "1" means ACC on. Other reservations
Milepost		CHAR	1	“L” mean Mileage
Mile data		H_STRING	8	Mile data，Unit: Meter The total mileage. The max is 0xFFFFFFFF