

Gateway communication protocol

- V1.06.017 -

2019.03.04

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< Revision record >

No.	Version No.	Revision Content	Revision person	Revision Date
1	V1.0	1. First draft		2015-5-10
2	V1.1	1. Modify GPS intensive packet format		2015-8-15
3	V1.2	1. Modify the vehicle data packet and increase the acceleration value in the alarm data packet. 2. Modify the driving behavior event package as a driving behavior description package. 3. delete the registration cancellation package, the signing package is changed to the login response package 4. shielding GPS dense packets, VOL intensive data packets. 5. increase the base station positioning data packet content 6. the login packet content is 0		2015-8-27
4	V1.3	1, the data packet header is changed to OXE7		2015-8-28
5	V1.4	1. Delete the version information package and summarize it into the login command.		2016-1-29
6	V1.5	1, delete request latitude and longitude, dense data packets, all relevant protocols not used		2016-2-29
7	V1.5	1, increase GPS, CAN, vehicle data packet intensive report package Increase the settings of the corresponding three dense report packages 2, GPRS settings TCPIP single and multiple communication parameters function ID interchange Settings_Multiple GPRS Communication 0x8410 Settings_single GPRS communication 0x8411		2016-8-2
8	V1.05.001	Compare the contents of the unified agreement, the specification version		2016-8-29
9	V1.06.001	1. Add 2.1.11 and 2.1.17, modify the wifi parameter setting query of 2.2 and 2.3 2. Modify the description and examples of 1.3.2, add 5 Appendix 2 data analysis examples		2016-11-2
10	V1.06.002	1. Increase the temperature upload packet 2. Add positive and negative sensor data packets		2016-11-21
11	V1.06.003	1. Increase GPS tracking settings 2. Increase 0206 temperature alarm ID 3. Correct some mileage units and content errors, increase the command format for setting queries.		2016-12-08
12	V1.06.004	1. Add 0x0219 single base station data packet (CMDA base station data is different from others)		2017-02-13
13	V1.06.005	1. Increase the supply and delivery instructions; 2. Increase the power-off command.		2017-05-05
14	V1.06.006	1. Add second generation program upgrade command 0x8502 2. Fix setting instructions and examples		2017-05-15
15	V1.06.007	1. Increase the flame out delay		2017-06-26
15	V1.06.008	1. Add GPS mode setting command, single GPS, single BD, dual mode 2. Add a picture packet, the platform sends 0x8439 camera instructions 3. New fuel quantity data package 4. Add punch data 5. Temperature data upload value is compatible with subzero temperature, slightly modified		2017-07-12
16	V1.06.009	1. Added temporary location tracking command 0x8444		2017-12-09
17	V1.06.010	1. Added 0704 command, blind spot refill command		2017-12-11
18	V1.06.011	1. Added 0900/0901 command to get AGPS data		2018-04-16
19	V1.06.012	1. Increase the maintenance mode setting ID: 0X8445		2018-06-29

20	V1.06.013	1. Increase maintenance mode setting: 0x02: permanent start		2018-07-18
21	V1.06.014	1. Increase the shutdown OBD function instruction 0x8445		2018-09-05
21	V1.06.015	1. Modify the OBD function command to close 0x8445	YD	2018-09-21
22	V1.06.016	1. 0200FE data package added 0xFE extended data upload	WJH	2018-11-15
23	V1.06.017	2. Remove service mode command settings, retain OBD switch command 0x8445 function	YD	2019-03-04

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1. Introduction

1.1 Purpose of writing

It is used to guide the wireless communication data constraint between the terminal and the server, and requires the developer to write the program according to this specification.

1.2 Terms and Precautions

a) host computer

Refers to the remote platform or mobile app.

b) lower position machine

Refers to the terminal or terminal software.

c) Down

Refers to the data frame sent by the remote platform or mobile phone to the terminal. The total length of the downlink data does not exceed 256 bytes at a time.

d) uplink

Refers to the data frame that the terminal uploads to the background control center.

e) Terminal login

The terminal should issue a login command each time the terminal establishes a connection on the platform. The terminal shall not send other messages before the login command is successfully acknowledged.

note:

1. The time in the terminal to send and receive data is the time of the GPS, which is the GMT time.
2. The platform processing data should be synchronized according to the data type required by the protocol, do not use string to deal with.
3. The common functions in the document need to respond to the interaction. Content such as "custom" and "dedicated" in the document is added for individual product features.

The platform can be parsed according to the needs of the product.

1.3 type of data and format

1.3.1 type of data

type of data	Description	Mark
u8/BYTE	8-bit unsigned integer	
u16/WORD	16-bit unsigned integer	The high position is in the front and the low position is in the back.
u32/DWORD	32-bit unsigned integer	The high position is in the front and the low position is in the back.
ASCII/String	ASCII character/GBK encoding	ASCII encoding / GBK encoding

The protocol values are expressed in hexadecimal, and the values of the query settings and appendix tables are expressed in terms of time.

1.3.2 GPRS format

GPRS packet format									
Message identifier	Function ID	Message attribute	Device ID	Message flow number	Message package encapsulation		data pack	check	Message identifier
1	2	2	H201508240001	2	Total number of message packets (2)	Message packet number (2)	N	1	1
Header									

【Message identifier】 : (1byte) Distributed in the head and tail, using 0XE7 logo

【Function ID】 : (2byte)

【Message attribute】 : (2byte)

15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Reserved		Subcontracting		Message body encryption			Message body length								

Bit0-Bit9 Message body length (The total number of bytes whose values are "Message package encapsulation" and "data pack")

Bit10-Bit12 Message body encryption, All 0 is not encrypted

【Device ID】 : (7byte) The first byte is ASCII code, the last 6 bytes is BCD code, the high byte is in front, the low byte is in the back.

Such as: transmission data 48 20 15 08 24 00 01 on behalf of Device ID is H201508240001

【Message flow number】 : (2byte) Cycle accumulation from 0.

【Message package encapsulation】 : If the Subcontracting flag in the Message attribute is 0, there is no such field in the Header.

If the Subcontracting flag in Message attribute is 1, the header is in the header, divided into the total number of messages and the current message packet sequence number.

【check】 : (1byte) From the first Message identifier, to all byte or check values before check.

That is: the XOR value of Function ID, Message attribute, Device ID, Message flow number, and data pack.

【Note escaping】 : In order to avoid the conflict of Message identifierE7, the data transmitted between the host computer and the lower computer is escaping, as follows:

Function ID, Message attribute, Device ID, Message flow number, data pack, 0XE7 in the check code, to be escaped,

The escaping rules are as follows: 0XE7→0xE6+0X02

0XE6→0XE6+0X01

Since both the terminal and the platform have transmission and reception procedures, they are all escaping. The principle is the same, and only needs to distinguish between sending and receiving.

▲ When sending a message, the data pack is encapsulated→calculate and fill the check code→escape

▼ When receiving a message, escape the restore→verify the check code

Example:

1. send:

The upstream data you want to send is: E7 80 00 00 12 4D 20 15 06 30 00 01 E7 05 E6 06 02 04 00 E7 (hexadecimal value)

If the data is retrieved, the hexadecimal value E7 or E6 is escaped according to the escaping rule, and if not, it is skipped.

The data sent after escaping is: E7 80 00 00 14 4D 20 15 06 30 00 01 E6 02 05 E6 01 06 02 04 00 E7 (hexadecimal value)
2. Receive:

When receiving data, if there is a hexadecimal value E6 02 or E6 01 in the retrieved data, it will be restored according to the escaping rule, and if it is not, it will be skipped.

The data that has been escaped and restored is: E7 80 00 00 12 4D 20 15 06 30 00 01 E7 05 E6 06 02 04 00 E7 (hexadecimal value)

2. GPRS Protocol description

2.1 Active reporting

2.1.1 【0001】 Terminal universal response

[\[Going up\]](#)

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	00 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.2 【8001】 Platform universal response

[\[Going down\]](#)

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.3 【0002】 Terminal heartbeat report

[\[Going up\]](#)

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	00 02	XX XX	7byte	2byte	no	XOR	E7

[\[Going down\]](#)

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.4 【00EE】 Terminal response downlink format error

[\[Going up\]](#)

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	00 EE	XX XX	7byte	2byte	universal response	XOR	E7

2.1.5 【0102】 Terminal login

[\[Going up\]](#)

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	01 02	XX XX	7byte	2byte	Terminal version information package	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	81 02	XX XX	7byte	2byte	Login response packet	XOR	E7

Note: 1. Each time GPRS is disconnected, the command is sent first, and after the command is answered, other data is sent.
2.The platform must respond, otherwise other data cannot be reported to the platform, and data generated during the period that is not reported to the platform is automatically stored in the FLASH.

2.1.6 【0200】 Terminal reporting vehicle data

[Function Description] Terminal timing report vehicle data

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 00	XX XX	7byte	byte	vehicle data pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.7 【0201】 Terminal reports alarm data

[Function Description] Terminal timing report vehicle data

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 01	XX XX	7byte	byte	Vehicle alarm package	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.8 【0205】 The terminal reports the alarm description information.

[Function Description] Report the alarm description when the driving behavior event occurs: Idle speed and fatigue driving, water temperature is too high, speeding

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 05	XX XX	7byte	2byte	Alarm description package	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.9 【0204】 Terminal reporting driving behavior data

[Function Description] Upload a driving behavior data pack when the terminal ACC OFF

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 04	XX XX	7byte	2byte	data pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.10 【0207】 The terminal reports the base station positioning data.(2G)

[Function Description] The terminal reports the base station positioning data.

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 07	XX XX	7byte	2byte	positioning data pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.11 【0218】 The terminal reports the base station positioning data (for 4G only)

[Function Description] The terminal reports the base station positioning data.

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 18	XX XX	7byte	2byte	^{4G} positioningdata pack ^{BaseStation}	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.12 【 0219 】 The terminal reports the base station positioning data pack (standard single base station package)

[Function Description] The terminal reports the base station positioning data, and the common standard single base station format.

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 19	XX XX	7byte	2byte	base station positioning data pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	00 05	7byte	2byte	universal response	XOR	E7

2.1.13 【0209】 Terminal reported vehicle failure

[Function Description] Terminal Active reporting vehicle failure

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 09	XX XX	7byte	2byte	Fault code package	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.14 【0212】 The terminal reports sleep wakeup

[Function Description] The sleep wake-up command is reported when the terminal wakes up.

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 12	XX XX	7byte	2byte	wake up data pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
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E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7
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2.1.15 【0213】 The terminal reports sleep entry

[Function Description] The terminal reports a sleep message when it enters sleep.

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 13	XX XX	7byte	2byte	Year, month, day, hour, minute	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.16 【0202】 Terminal reports GPS intensive data (customized)

[Function Description] Terminal timing report vehicle data

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 02	XX XX	7byte	2byte	pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.17 【0208】 Terminal reports CAN intensive data (customized)

[Function Description] The terminal periodically reports CAN continuous data.

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 08	XX XX	7byte	2byte	data pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.18 【0217】 The terminal reports WIFI connection MAC data (dedicated)

[Function Description] The terminal reports the base station positioning data.

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 17	XX XX	7byte	2byte	MACdata pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	XX XX	7byte	2byte	universal response	XOR	E7

2.1.19 【0215】 Terminal reports temperature sensor data (customized)

[Function Description] The terminal periodically detects the temperature sensor data; the sensor does not upload data without the sensor.

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 15	XX XX	7byte	2byte	sensor data pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	00 05	7byte	2byte	universal response	XOR	E7

2.1.20 【0216】 The terminal reports positive and negative sensor data (customized)

[Function Description] Terminal timing uploads positive and negative sensor data

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 16	XX XX	7byte	2byte	negative sensor data pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	00 05	7byte	2byte	universal response	XOR	E7

2.1.21 【022A】 XYZ data upload during collision (UK customization)

[Function Description] When the terminal acceleration value is greater than the preset value, the corresponding data of the XYZ axis is reported (default 1200mg)

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 2A	XX XX	7byte	2byte	XYZdata pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	00 05	7byte	2byte	universal response	XOR	E7

2.1.22 【020A】 The terminal reports the current driver information

[Function Description] Terminal Active reporting driver information

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
7E	02 0A	XX XX	7byte	2byte	Driver information package	XOR	7E

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
7E	80 01	00 05	7byte	2byte	<u>universal response</u>	XOR	7E

2.1.23 【020B】 Reporting oil quantity data on the terminal

[Function Description] Terminal active fuel quantity data

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
7E	02 0B	XX XX	7byte	2byte	<u>fuel quantity data</u>	XOR	7E

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
7E	80 01	00 05	7byte	2byte	<u>universal response</u>	XOR	7E

2.1.24 【0230】 Terminal reporting image data (customized)

[Function Description] reporting image data pack

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	02 30	XX XX	7byte	2byte	<u>image data pack</u>	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	00 05	7byte	2byte	<u>universal response</u>	XOR	E7

2.1.25 【0704】 Blind point data supplement

[Function Description] Terminal reporting blind spot data

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	07 04	XX XX	7byte	2byte	pack	XOR	E7

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	80 01	00 05	7byte	2byte	universal response	XOR	E7

2.1.26 【0900】 Terminal acquires AGPS update information

[Function Description] The terminal reports this data pack if it needs to obtain AGPS data.

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	09 00	XX XX	7byte	2byte	information	XOR	E7

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	89 00	XX XX	7byte	2byte	information	XOR	E7

2.1.27 【0901】 Terminal acquires AGPS data

[Function Description] When the 8900 platform responds to the AGPS data pack content, the terminal periodically reports the data pack to obtain the AGPS data.

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	09 01	XX XX	7byte	2byte	acquires AGPS data	XOR	E7

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	89 01	XX XX	7byte	2byte	Answer AGPS data	XOR	E7

2.2 【83XX】 Remote_query※

[Going down]

Mark	Query ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	2byte	00 00	7byte	2byte	NULL	XOR	E7

[Going up]

Mark	Answer ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	2byte	XX XX	7byte	2byte	Query content	XOR	E7

No.	Query content	Query ID	Query response content	Answer ID
1	Query_terminal attribute information	0x8301	Terminal return packet	0x0301
2				
3				
4				
5	Query_GPRS communication parameters	0x8311	The terminal returns the GPRS communication parameter package	0x0311
6	Query_Operation and Maintenance Center Number	0x8312	The terminal returns to the platform center number	0x0312
7	Query_SMS alarm number	0x8313	The terminal returns the SMS alarm number	0x0313
8	Query_vehicle data	0x8314	Terminal returns vehicle data	0x0314
9	Query_current fault code	0x8315	The terminal returns DTC data pack	0x0315
10	Query_driving behavior data	0x8316	Terminal returns driving behavior data	0x0316
11	Query_current driver information	0x8317	The terminal returns the current driver information	0x0317
12				
13				
14	Query_heartbeat data pack interval	0x8320	The terminal returns the heartbeat data pack interval	0x0320
15	Query_vehicle data return interval	0x8321	Terminal returns vehicle data interval	0x0321
16	Query_continuous data stream parameters	0x8322	The terminal returns continuous data stream parameters	0x0322
17	Query_base station information return interval	0x8323	The terminal returns the base station information return interval	0x0323
18	Query_alarm mode	0x8324	Terminal returns to alarm mode	0x0324
19	Query_low voltage alarm parameter	0x8325	The terminal returns the low voltage alarm parameter	0x0325
20	Query_trailer alarm parameters	0x8326	Terminal returns trailer alarm parameters	0x0326
21	Query_collision alarm parameter	0x8327	The terminal returns the collision alarm parameter	0x0327
22				
23	Query_positioning time is too long alarm parameter	0x8329	The terminal returns to the positioning too long alarm parameter	0x0329
24	Query_idle time is too long alarm parameter	0x832A	The terminal returns the idle speed alarm parameter	0x032A
25	Query_Fatigue driving parameters	0x832B	Terminal returns fatigue driving parameters	0x032B
26	Query_water temperature alarm parameter	0x832C	Terminal return water temperature alarm parameter	0x032C
27	Query_Overspeed alarm parameter	0x832D	The terminal returns the over speed alarm parameter	0x032D
28	Query_high speed neutral sliding parameters	0x832E	The terminal returns to the high speed neutral coasting parameter	0x032E

29	Query _ low water temperature high speed alarm parameter	0x832F	Terminal return parameter	0x032F
30	Query_quick acceleration parameter	0x8330	The terminal returns to the rapid acceleration parameter	0x0330
31	Query_quick deceleration parameter	0x8331	The terminal returns to the rapid deceleration parameter	0x0331
32	Query _ sharp turn parameters	0x8332	Terminal returns sharp turn parameters	0x0332
33	Query _WIFI parameter package	0x8337	The terminal returns the WIFI parameter	0x0337
34	Query GPS mode parameters	0x8341	The terminal returns to PS mode	0x0341
35	Query_Close OBD function	0x8345	The terminal returns to close the OBD function status.	0x0345

2.3 【84XX】 Remote_setting ※

[Going down]

Mark	Setting ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	2byte	XX XX	7byte	2byte	Setting content	XOR	E7

[Going up]

Mark	Answer ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	2byte	XX XX	7byte	2byte	Setting answer content	XOR	E7

No.	Setting content	SettingID	Setting answer content	Answer ID	
1	Control_terminal restart	0x8401	Terminal acknowledgement	0x0001	
2	Control_Restore factory settings	0x8402	Terminal acknowledgement	0x0001	
3					
4	Settings_multiple GPRS communication	0x8410	Terminal acknowledgement	0x0001	
5	Settings_single GPRS communication	0x8411	Terminal acknowledgement	0x0001	
6	Set_Operation and maintenance center number	0x8412	Terminal acknowledgement	0x0001	
7	Set_SMS alarm number	0x8413	Terminal acknowledgement	0x0001	
8	Setting_vehicle type	0x8414	Terminal acknowledgement	0x0001	
9	Set_clear current fault code	0x8415	Return to clear result	0x0415	0x00 cleared successfully 0x01 clear failed 0x02 communication failed
10	Set_clear driving behavior data	0x8416	Terminal acknowledgement	0x0001	
11	Set_Initial total mileage total fuel consumption	0x8417	Terminal acknowledgement	0x0001	
12	Set_clear vehicle data	0x8418	Terminal acknowledgement	0x0001	
13	Set_send to the specified number SMS	0x8420	Terminal acknowledgement	0x0001	
14	Set_heartbeat data pack interval	0x8421	Terminal acknowledgement	0x0001	

15	Set_vehicle data timing return parameter	0x8422	Terminal acknowledgement	0x0001	
16	Set_continuous data stream parameters	0x8423	Terminal acknowledgement	0x0001	
17	Set_base station information return interval	0x8424	Terminal acknowledgement	0x0001	
18	Set_alarm mode	0x8425	Terminal acknowledgement	0x0001	
19	Set_low voltage alarm parameter	0x8426	Terminal acknowledgement	0x0001	
20	Set_trailer alarm parameters	0x8427	Terminal acknowledgement	0x0001	
21	Set_collision alarm parameters	0x8428	Terminal acknowledgement	0x0001	
22					
23	Setting_positioning time is too long alarm parameter	0x842A	Terminal acknowledgement	0x0001	
24	Set_idle time too long alarm parameter	0x842B	Terminal acknowledgement	0x0001	
25	Setting_fatigue driving parameters	0x842C	Terminal acknowledgement	0x0001	
26	Set_water temperature alarm parameter	0x842D	Terminal acknowledgement	0x0001	
27	Set_Over speed alarm parameter	0x842E	Terminal acknowledgement	0x0001	
28	Set_High speed neutral coasting parameter	0x842F	Terminal acknowledgement	0x0001	
29	Set_low water temperature high speed alarm parameter	0x8430	Terminal acknowledgement	0x0001	
30	Setting_emergency acceleration parameter	0x8431	Terminal acknowledgement	0x0001	
31	Setting_emergency deceleration parameter	0x8432	Terminal acknowledgement	0x0001	
32	Set_quick turn parameter	0x8433	Terminal acknowledgement	0x0001	
33	Set_CAN dense data pack parameters	0x8434	Terminal acknowledgement	0x0001	
34	Set_GPS intensive data pack parameters	0x8435	Terminal acknowledgement	0x0001	
35	Set_vehicle data intensive data pack parameter	0x8436	Terminal acknowledgement	0x0001	
36	Set the_WIFI parameter package	0x8437	Terminal acknowledgement	0x0001	
37	Set tracking mode	0x8438	Terminal acknowledgement	0x0001	
38	Set camera parameters	0x8439	Terminal acknowledgement	0x0001	
39	Set supply / cut off oil	0x8440	Terminal acknowledgement	0x0001	
40	Set up/down	0x8441	Terminal acknowledgement	0x0001	
41	Flame out delay judgment	0x8442	Terminal acknowledgement	0x0001	
42	Positioning mode switching	0x8443	Terminal acknowledgement	0x0001	
43	Temporary location tracking	0x8444	Terminal acknowledgement	0x0001	
44	Set_close OBD function	0x8445	Terminal acknowledgement	0x0001	

2.4 【85XX】 Remote upgrade

2.4.1 【8500】 Platform notification terminal software upgrade (first generation software) ※

[Function Description] The platform requires the terminal to be upgraded. In the first generation, when the version V1 reported by 0102 is used, the command is used to upgrade, eg: HLM200_V101001, which is the first generation.

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	85 00	XX XX	7byte	2byte	Software upgrade request package	XOR	E7

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	05 00	00 03	7byte	2byte	1-2: Downstream Function ID 3: Upgrade status, as follows 0x00 upgrade acceptance 0X01 upgrade package format error 0x02 version is the same, no upgrade 0x03 voltage is too low to upgrade (keep the sign) 0x04 There is no speed upgrade (Keep the upgrade sign)	XOR	E7

2.4.2 【8501】 Electric vehicle remote control (for F201 series) ※

2.4.3 【8502】 Platform notification terminal software upgrade (second generation software) ※

[Function Description] The platform requires the terminal to be upgraded. In the second generation, when the version V2 reported by 0102 is used, the command is used to upgrade eg: HLM200_V201001, which is the first generation.

[Going down]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	85 02	XX XX	7byte	2byte	Software upgrade request package	XOR	E7

[Going up]

Mark	Function ID	Message attribute	Device ID	Message serial number	Message body	check	Mark
E7	05 02	00 03	7byte	2byte	1-2: Downstream Function ID 3: Upgrade status, as	XOR	E7

					follows 0x00 upgrade acceptance 0X01 upgrade package format error 0x02 version is the same, no upgrade 0x03 voltage is too low to upgrade (keep the sign) 0x04 There is no speed upgrade (Keep the upgrade sign)		
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3. SMS protocol description ※ (quick link)

SMS command				
Content	command	Query	Setting	Control
SMS system restart	HL+REBOOT#			✓
SMS Device ID	HL+DEVID	✓	✓	
SMS factory reset	HL+FACTORY#			✓
SMS query terminal information	HL+VERSION?	✓		
SMS query battery voltage	HL+VOL?	✓		
SMS model ID	HL+VEHID	✓	✓	
SMS heartbeat interval	HL+HB	✓	✓	
SMS mileage fuel consumption	HL+ODO	✓	✓	
SMS communication parameters	HL+GPRS	✓	✓	
SMS query vehicle fault code	HL+DTC?	✓		
SMS clear vehicle fault code	HL+CLRDTCS#			✓
SMS software upgrade instructions	HL+UPDATE			✓
SMS rapid acceleration parameter	HL+SPDUP	✓	✓	
SMS rapid deceleration parameters	HL+SPDDN	✓	✓	
SMS sharp turn parameters	HL+SHPTN	✓	✓	
SMS alarm mode	HL+ALMTYPE	✓	✓	
SMS alarm number	HL+ALMNUM	✓	✓	
SMS operation and maintenance number	HL+PLATNUM	✓	✓	
SMS low voltage alarm voltage	HL+BATLOW	✓	✓	
SMS positioning GPS time is too long alarm	HL+GPSTOVER	✓	✓	
SMS vehicle data reporting interval	HL+DATA	✓	✓	
SMS continuous data stream parameters	HL+DYN	✓	✓	
SMS trailer alarm parameters	HL+TOW	✓	✓	
SMS collision alarm parameters	HL+CRASH	✓	✓	
SMS idle speed alarm parameter	HL+IDLETOVER	✓	✓	
SMS driving behavior data	HL+ACTDATA	✓	✓	
SMS query system time	HL+TIME	✓	✓	
SMS query FLASH information	HL+FLASH	✓		
SMS query security ID	HL+CANID	✓		
SMS clears DATA dead zone data	HL+CLRDATA#			
SMS clears ACT blind zone data	HL+CLRACT#			
SMS clears STA blind zone data	HL+CLRSTA#			
SMS clears EVN blind zone data	HL+CLREVN#			

[SMS Query terminal information](#) (HL+VERSION)

Functional description	Query terminal information
grammar	Query: HL+VERSION?

parameter	no
return value	Terminal information packet <SW Version><SW Date><CPU ID><GSM TYPE><GSM IMEI><SIM IMSI><SIM ICCID><Car Type><VIN><TMIL><TFUEL>
Example	HL+VERSION? VERSION= SW Version: HLM100V100001 SW Date: 2015-05-20 Car Type: FD05 H201508120001

SMS Equipment type (HL+DEVID)

Functional description	Set the query vehicle type
grammar	setting: HL+DEVID=<DEV ID> query : HL+DEVID?
parameter	< DEV ID > The first digit is the letter ASCII code, the last 12 decimal ASCII display
return value	Successful return: DEVID: OK Read back: DEVID: <VehID>, <Consum> Error return: DEVID: ERROR
Example	HL+DEVID=H201508120001 DEVID: OK HL+DEVID? DEVID:H201508120001

SMS Restart the terminal (HL+RESET#)

Functional description	Control terminal restart
grammar	HL+RESET#
parameter	No
return value	Successful return: RESET: OK Error return: RESET: ERROR
Example	HL+RESET# RESET:OK

SMS restored to factory setting (HL+FACTORY#)

Functional description	Terminal system parameters are restored to factory settings
grammar	HL+FACTORY
parameter	No
return value	return value
Example	HL+FACTORY FACTORY:OK

Successful return: RES
Error return: RESET: E

SMS query Battery voltage (HL+VOL)

Functional description	Terminal system parameters are restored to factory settings
grammar	HL+VOL?
parameter	No

return value	Successful return: VOL: 126 (actual voltage * 10)
Example	HL+VOL? VOL:126

SMS Vehicle Type (HL+VEHID)

Functional description	Setting query Vehicle Type
grammar	setting: HL+VEHID=<Veh ID>,<Consum> query : HL+VEHID?
parameter	<Veh ID> Vehicle type Two-byte hexadecimal ASCII display (4 digits) <Consum> Vehicle displacement A byte hexadecimal ASCII display (2 digits)
return value	Successful return: VEHID: OK Read return: VEHID: <VehID>, <Consum> Error return: VEHID: ERROR
Example	HL+VEHID=7F20,16 VEHID: OK HL+VEHID? VEHID:7F20,16

SMS Total mileage total fuel consumption (HL+ODO)

Functional description	Setting query current mileage of the vehicle, total fuel consumption
grammar	setting: HL+ODO=<Odometer Value>,<Total Oil Consum> query : HL+ODO?
parameter	<Odometer Value> Total mileage of the vehicle <Total Oil Consum> Total current fuel consumption of the vehicle in milliliters
return value	Successful return: ODO: OK Query Return: ODO=<Odometer Value>, <Total Oil Consum> Error return: ODO: ERROR
Example	HL+ODO=12345,54321 ODO: OK HL+ODO? ODO:12345,54321

SMS GPRS communication parameter

(HL+GPRS)

Functional description	Setting query GPRS communication parameter, Up to 3 IP addresses. The smaller the server serial number, the higher the priority of establishing a TCP/UDP connection.
grammar	HL+HOST=<Index>,<FQDN>,<HostAddress>,<Port>,<DNS>,<APN>,<User name>,<Passwd> query : HL+GPRS?
parameter	<Index> server serial number, starting from 1 <FQDN> <GPRS Address> type 0 <Address> is the IP address 1 <Address> is the domain name <Host Address> server address <Port> TCP/UDP port <DNS> Domain name resolution server, if <Host Address> is an IP address, DNS is 0.0.0.0 <APN> APN Name: CMNET, CMWAP, etc. <User name> User name <Pass word> User password
return value	Successful return: GPRS: OK Error return: GPRS: ERROR Query returns: GPRS=1,<FQDN>,<Host Address>,<Port>,<DNS>,<APN>,<User name>,<Passwd>... GPRS=3,<FQDN>,<Host Address>,<Port>,<DNS>,<APN>,<User name>,<Passwd>
Example	HL+GPRS=1,0,168.192.1.1,6666,0.0.0.0,CMNET,, GPRS:OK HL+GPRS? GPRS: 1,0,168.192.1.1,6666,0.0.0.0,CMNET,, 2,0,,,,, 3,0,,,,,

SMS Operation and maintenance center number

(HL+PLATNUM)

Functional description	Set up 2 numbers by SMS message /setting operation center number
grammar	setting: HL+PLATNUM=<n>,<Address> query : HL+PLATNUM?
parameter	<n> serial number <Address> Operation and Maintenance Center Number
return value	Successful return: PLATNUM: OK Error return: PLATNUM: ERROR Query returns: PLATNUM: < n>, <Address>
Example	HL+PLATNUM =1,12345678901 PLATNUM: OK HL+PLATNUM? PLATNUM:1,12345678901

SMS Alarm number (HL+ALMNUM)

Functional description	Query setting "SMS alarm number", up to 2 numbers
grammar	setting: HL+ALMNUM=<n>,<Address> query : HL+ALMNUM?
parameter	<n> serial number <Address> alarm number
return value	Setting success: ALMNUM: OK Error return: ALMNUM: ERROR Query returns: ALMNUM: <n>, <Address>
Example	HL+ALMNUM=1,12345678901 ALMNUM: OK HL+ALMNUM? ALMNUM:1,12345678901

SMS Heartbeat interval parameter (HL+HB)

Functional description	Terminal heartbeat interval parameter
grammar	setting: HL+HB=<Acc ON Interval>,<Acc OFF Interval > query : HL+HB?
parameter	<Acc ON Interval> ACC ON minimum heartbeat interval, in seconds per second >1MIN <Acc OFF Interval> ACC OFF minimum heartbeat interval in seconds <24H &&>1H
return value	Setting success: HB: OK Error return: HB: ERROR Read return value: HB: <T1>, <T2>
Example	HL+HB=500,30000 HB: OK HL+HB? HB:500,30000

SMS Vehicle data return interval (HL+DATA)

Functional description	Vehicle data pack return parameter
grammar	setting: HL+DATA=<Enable or Disable>,<InterVal> query : HL+DATA?
parameter	InterVal: Timed return interval, in seconds ;
return value	Setting success: DATA: OK Error return: DATA: ERROR Query Returns: HL+DATA:<InterVal>
Example	HL+DATA=1,30 DATA: OK HL+DATA? DATA:1,30

SMS Continuous data flow parameter (HL+DYN)

Functional description	Setting query maximum duration of car dynamic data stream
grammar	setting: HL+DYN=<OPEN ><Last Seconds> query : HL+DYN? DYN:<OPEN><Current Seconds><Last Seconds>
parameter	<OPEN > Continuous data flow on or off: 0 off, non-zero on <Last Seconds> Maximum duration of continuous data stream, in seconds <Current Seconds> Continuous data flow to current continuous upload time, in seconds
return value	Setting success: DYN: OK Setting error: DYN: ERROR Query Returns: DYN:<OPEN ><Current Seconds><Last Seconds>
Example	HL+DYN=1,300 DYN: OK HL+DYN? DYN:1,100,300

SMS query Vehicle fault code (HL+DTC)

Functional description	Query vehicle fault code
grammar	Query command: HL+DTC?
parameter	No
return value	Query returns: DTC: P0101, P0209, C1102 / trouble code number DTC: NONE / No DTC
Example	HL+DTC? DTC: NONE

SMS Clear vehicle fault code (HL+CLRDTTC#)

Functional description	Clear vehicle fault code
grammar	HL+CLRDTTC#
parameter	No
return value	Setting success: DTC CLR: OK --- Trouble code cleared DTC CLR: ERROR --- Trouble code clear failed, fault code still exists DTC CLR: COM ERROR --- Communication with car communication No
Example	HL+CLRDTTC# DTC CLR: OK

SMS Alarm mode

(HL+ALMTYPE)

Functional description	Setting query alarm mode
grammar	setting: HL+ALMTYPE=<TYPE> query : HL+ALMTYPE?
parameter	<TYPE> 0 GPRS 1 GPRS+SMS
return value	Setting success: ALMTYPE: OK Setting error: ALMTYPE: ERROR Query returns: ALMTYPE: <TYPE>
Example	HL+ALMTYPE=0 ALMTYPE: OK HL+ALMTYPE? ALMTYPE:0

SMS Low voltage alarm parameter

(HL+BATLOW)

Functional description	Setting query Low voltage alarm parameter
grammar	setting: HL+BATLOW=<Enable>,<Vol Para> query : HL+BATLOW?
parameter	<Enable> 0 Disable 1 Enable <Vol Para> 10 times the voltage value ((accurate to 0.1V, 10 times the integer Mark)
return value	Setting success: BATLOW: OK Setting error: BATLOW: ERROR Query Returns: BATLOW:<Enable>,<Vol Para>
Example	HL+BATLOW =1,110 BATLOW: OK HL+BATLOW? BATLOW:1,110

SMS Idle too long alarm parameter

(HL+IDLETOVER)

Functional description	Idle too long alarm parameter
grammar	setting: HL+IDLETOVER=<Enable>,<Idle TOver Para> query : HL+IDLETOVER?
parameter	<Enable> 0 Disable 1 Enable <<Idle Time Over Para> Unit: minutes
return value	Setting success: IDLETOVER: OK Setting error: ERROR: IDLETOVER Query Returns: IDLETOVER: <Enable>, <Idle TOver Para>
Example	HL+IDLETOVER=1,10 IDLETOVER: OK HL+IDLETOVER? IDLETOVER:1,10

SMS Positioning too long alarm parameters (HL+GPSTOVER)

Functional description	Positioning too long alarm parameters
grammar	setting: HL+GPSTOVER=<Enable>,<Gps Time Over Para> query : HL+GPSTOVER?
parameter	<Enable> 0 Disable 1 Enable <Gps Time Over Para> Unit: minutes
return value	Setting success: GPSTOVER: OK Setting error: GPSTOVER: ERROR Read back: GPSTOVER: <Enable>, <Gps Time Over Para>
Example	HL+GPSTOVER=1,60 GPSTOVER: OK HL+GPSTOVER? GPSTOVER:1,60

SMS Trailer alarm (HL+TOW)

Functional description	Trailer alarm parameters
grammar	setting: HL+TOW=<Enable>,<Speed>,<Interval> query : HL+TOW?
parameter	<Enable> 0 Disable 1 Enable <Speed> Speed of vehicle travel, in KM/H <Interval> Meets trailer condition duration in seconds
return value	Setting success: TOW: OK Setting error: TOW: ERROR Query Returns: TOW:<Enable>,<Speed>,<Interval>
Example	HL+TOW=1,10,30 TOW:OK HL+TOW? TOW:1,10,30

SMS Collision alarm parameter (HL+CRASH)

Functional description	Vehicle collision warning parameter
grammar	setting: HL+CRASH=<Enable>,<Detect Duration>,<Wake Up Threshold>, <Crash Threshold During Running> query : HL+CRASH?
parameter	Enable Collision Alarm Enable 0 Disable 1 Enable Detect Duration Time over which the threshold is exceeded, in ms Wake Up Threshold Sleep wake threshold, in milligrams Crash Threshold Running Collision Alarm Acceleration Threshold, in mg
return value	Setting success: CRASH: OK Query returns: CRASH: <Enable>, <Detect Duration>, <Wake Up Threshold>, <Crash Threshold During Running> Error return: CRASH: ERROR
Example	HL+CRASH=1,80,250,2000 CRASH: OK HL+CRASH? CRASH:1,80,250,2000

SMS Notify software upgrade

(HL+UPDATE)

Functional description	Notify the terminal to upgrade the software version
grammar	HL+UPDATE=<VERSION>, version number, 14 ASCII codes <FTP ADDRESS>, FTP address <FTP PORT>, FTP port <USER NAME>, username <PASSWD>, password <FILE NAME>, filename <FILE PATH> file path
parameter	
return value	UPDATE: OK upgrade UPDATE: Same version of SAME VERSION UPDATE: FORMAT ERROR format is wrong
Example	HL+UPDATE= HLOM100AV100001,255. 255.0.1,2015,HLO086, HLO086, HLOM100AV100001.BIN, / UPDATE: OK

SMS Driving behavior data

(HL+ACTDATA)

Functional description	query Driving behavior data
grammar	query command: HL+ACTDATA?
parameter	No
return value	Query return: ACTDATA: <SpdUp total times>, total number of rapid accelerations <SpddDn total times>, total number of sudden decelerations <ShpTn total times> Total number of sharp turns <ShpTn total times> Total number of sharp turns
Example	HL+ACTDATA?

SMS Accelerated acceleration parameter

(HL+SPDUP)

Functional description	Accelerated acceleration parameter
grammar	setting: HL+SPDUP=<SpdUp3D>, <SpdUp3DPeriod>, <SpdUpDefKmH>, <SpdUpTimes> query : HL+SPDUP?
parameter	SpdUp3D Accelerated Acceleration Threshold Condition, in mg SpdUp3DPeriod maximum acceleration time in seconds SpdUpDefKmH 1S speed drop before and after rapid acceleration, � KM/H SpdUpTimes 1S speed drop before and after rapid acceleration
return value	Setting success: SPDUP: OK Setting error: SPDUP: ERROR Query Returns: SPDUP: <SpdUp3D>, <SpdUp3DPeriod>, <SpdUpDefKmH>, <SpdUpTimes>
Example	HL+SPDUP=200, 3, 10, 2 SPDUP: OK HL+SPDUP? SPDUP:200, 3, 8, 2

SMS 急减速参数

(HL+SPDDN)

Functional description	急减速参数
grammar	setting: HL+SPDDN=<SpdDn3D>, <SpdDn3DPeriod>, <SpdDnDefKmH>, <SpdDnTimes>, <SpdDnForceKmH> query : HL+SPDDN?
parameter	SpdDn3D 急减速加速度阈值条件, unitmg SpdDn3DPeriod 急减速周期最大时间, unit 秒 SpdDnDefKmH 急减速前后 1S 速度落差, unitKM/H SpdDnTimes 急减速前后 1S 速度落差持续时间 SpdDnForceKmH 急减速速度前后 1S 落差强制值
return value	setting 成功: SPDDN: OK setting 错误: SPDDN: ERROR query 返回: SPDDN:<SpdDn3D>, <SpdDn3DPeriod>, <SpdDnDefKmH>, <SpdDnTimes>, <SpdDnForceKmH>
Example	HL+SPDDN=500, 6, 10, 2, 18 SPDDN: OK HL+SPDDN? SPDDN:500, 6, 10, 2, 18

SMS Sharp turn parameter

(HL+SHPTN)

Functional description	Sharp turn parameter
grammar	setting: HL+SHPTN=<ShpTn3D>, <ShpTnKmH>, <Factor>, <ShpTnStopTimes> query : HL+SHPTN?
parameter	ShpTn3D sharp turn acceleration threshold condition, in mg ShpTnKmH sharp turn speed threshold condition, unit KM/H Factor sharp turn factor ShpTnStopTimes sharp turn cycle maximum time, in seconds
return value	Setting success: SHPTN: OK Setting error: SHPTN: ERROR Query Returns: HL+SHPTN:<ShpTn3D>, <ShpTnKmH>, <Factor>, <ShpTnStopTimes>
Example	HL+SHPTN=300, 60, 80, 6 SHPTN: OK

SMS_query system time (HL+TIME)

SMS_query FLASH information (HL+FLASH)

SMS_query Security ID (HL+CANID)

SMS_Clear DATA Blind Area Data (HL+CLRDATA)

SMS_Clear ACT Blind Area Data (HL+CLRACT)

SMS_Clear STA Blind Area Data (HL+CLRSTA)

SMS_clear EVN dead zone data (HL+CLREVN)

4. Appendix I

4.1 Schedule_Going up universal response (5byte)

Byte position	content	Byte count	type of data	description
0	Corresponding downlink Message flow number	2	u16	Message flow number initiated by the platform to set the downlink data
2	Corresponding to the downstream settingFunction ID	2	u16	A generic response initiated by the platform to set the downstream data 2byte is the Function ID number of the platform downlink data.
4	Corresponding to the downlink setting return result	1	u8	0x00 setting succeeded 0x01 setting failed 0xFF format error

4.2 Schedule_Going down universal response (5byte)

byteposition	content	Byte count	type of data	description
0	Message flow number of the upstream data	2	u16	
2	Function ID of the upstream data	2	u16	A universal response initiated by the terminal to report data 2 byte is the Function ID number of the terminal reporting data.
4	Corresponding result of online data	1	u8	0x00 setting succeeded 0x01 setting failed

4.3 Schedule_Login response packet (11byte)

byteposition	Field	type of data	description 及要求
0	Platform current time	BYTE[6]	Year, month, day, minute, minute (GMT time)
6	Model ID	WORD	Default 0, special case consultation factory separate setting
8	Displacement	WORD	The hexadecimal value of (displacement L*10). The default is 0x10 (ie 1.6L), other displacements are the same setting
10	Whether to upgrade	BYTE	0x55 upgrade, others do not upgrade

4.4 Schedule_Version information package (128byte)

Original byte	Field	type of data	Description and command
0	Terminal software version number	STRING[14]	Version: HLCM200V100001 HLC-----Product Name M100-----terminal name code V100-----software version number, release version 001-----software minor version number, submitted as an internal test
14	Terminal software version date	STRING[10]	Software date: 2012-12-03
24	CPU ID number	BYTE[12]	
36	GSM TYPE Name	STRING[15]	GSM model: Telit GL865
51	GSM IMEI number	STRING[15]	GSM IMEI number

66	SIM card IMSI number	STRING[15]	Terminal SIM card IMSI number
81	SIM card ICCID	STRING[20]	Terminal SIM card ICCID number
101	Car Type	WORD	Car model ID
103	VIN	STRING[17]	Car VIN code
120	total mileage	DWORD	Cumulative total mileage or vehicle instrument mileage after loading the terminal (m)
124	Total fuel consumption	DWORD	Total vehicle fuel consumption (ml) after loading the terminal

4.5 [Schedule blind spotdata pack](#)

Byte position	Field	type of data	Description and command
0	Number of data items	WORD	Contains the number of position data items, greater than 0
2	Position type of data	BYTE	0: normal position batch report, 1: blind spot retransmission
3	Position report data item	BYTE[n]	See the _Schedule position data item table for details.

4.6 [Schedule position data item table](#)

byte position	Field	type of data	Description and command
0	Position report data body length	WORD	Position data body length, n
2	Position report data body	BYTE[n]	Format such as vehicle data pack

4.7 Schedule 车辆 data pack/报警包 (118byte)

Segment sequence	Subsequence	content	Word count	type of data	Precision	unit	description	
1 SysTime	1	Year	1	u8			year	
	2	Month	1	u8			month	
	3	Day	1	u8			day	
	4	Hour	1	u8			Time (GMT time)	
	5	Minute	1	u8			Minute	
	6	Seconds	1	u8			second	
2	1	Trip Mark	2	u16			Driving cycle label	
3	1	ACC Status	1	u8			ACC status 0/1 ACC OFF/ON	
4	1	<u>Alm ID</u>	2	u16			Alarm Category ID: Alarm Key ID Index 0x0000 indicates non-alarm data pack 0xXXXX indicates the alarm data pack	
5 GPS information (20byte)	1	Valid Byte	1	u8			Whether Bit0 Gps is currently positioned is valid 1/0 Yes / No	
	2	Latitude	4	u32			0.000001 degrees Bit31=0/1 North latitude/South latitude	
	3	Longitude	4	u32			0.000001 degrees Bit31=0/1 East / West longitude	
	4	Altitude	4	u32	0.1	m	unit	
	5	Satellites	1	u8			Number of satellites	
	6	Speed	2	u16	0.1	km/h	GPS speed	
	7	Direction	2	u16	0.1	degree	Direction, upload value /10	
	8	PDOP	2	u16	0.01		Position accuracy, upload value / 100	
6		Model ID	2	u16			Model ID table	
7	1	State mask	10	u8			Car status mask Indicates the following 10 types of car status support or not	
8 Status field	1	Security status	1	u8			Bit0 1/0 ON/OFF ACC status	
							Bit1 1/0 arming/disarming	
							Bit2 1/0 Press/release foot brake	
							Bit3 1/0 step on/off throttle	
							Bit4 1/0 Pull up / release Hand brake	
							Bit5 1/0 Insert/release main seat belt	
							Bit6 1/0 Insert/Release Vice Seat Belt	
	Bit7 1/0 reserved							
	2	Door status	1	u8				Bit0 1/0 On/Off Left front door LF
								Bit1 1/0 On/Off Right front door RF
Bit2 1/0 On/Off Left Rear Door LB								
3	Lock status	1	u8				Bit3 1/0 On/Off Right Rear Door RB	
							Bit4 1/0 On/Off trunk TRUNK	
							Bit5 1/0 on/off hood	
							Bit6 1/0 Reserved	
							Bit7 1/0 Reserved	
							Bit0 1/0 Lock/Unlock Left Front Lock LF	

						Bit1 1/0 Lock/Unlock Right Front Lock RF
						Bit2 1/0 Lock/Unlock Left Rear Lock LB
						Bit3 1/0 Lock/Unlock Right Rear Lock RB
						Bit4 1/0 Reserved
						Bit5 1/0 Reserved
						Bit6 1/0 Reserved
						Bit7 1/0 Reserved
	4	Window status	1	u8		Bit0 1/0 On/Off Left front window LF
						Bit1 1/0 On/Off Right front window RF
						Bit2 1/0 On/Off Left Rear Window LB
						Bit3 1/0 On/Off Right rear window RB
						Bit4 1/0 on/off sunroof switch
						Bit5 1/0 on/off left turn signal
						Bit6 1/0 On/Off Right turn signal
						Bit7 1/0 on/off reading light
	5	Light status 1	1	u8		Bit0 1/0 on/off
						Bit1 1/0 On/Off High beam
						Bit2 1/0 On/Off Front fog light
						Bit3 1/0 On/Off Rear fog light
						Bit4 1/0 On/Off Hazard Lights
						Bit5 1/0 on/off reversing light
						Bit6 1/0 On/Off AUTO light
						Bit7 1/0 on/off width lamp
	6	Switch state A	1	u8		Bit0 1/0 ON/OFF oil alarm
						Bit1 1/0 ON/OFF fuel alarm
						Bit2 1/0 on/off wiper
						Bit3 1/0 on/off speaker
						Bit4 1/0 On/Off Air Conditioning
						Bit5 1/0 On/Off Rearview mirror status
						Bit6 1/0 Reserved
						Bit7 1/0 Reserved
	7	Switch status B	1	u8		Bit0- Bit3 Reserved
						Bit4-BIT7 gear position
						==0 P ==1 R ==2 N ==3 D ==4 1
						==5 2 ==6 3 ==7 4 ==8 5 ==9 6
						==10 M ==11 S ==15 does not exist
	8	Reserved	1	u8		Reserved
	9	Reserved	1	u8		Reserved
	10	Reserved	1	u8		Reserved
9	1	OBd protocol category	1	u8		CAN 11 500 0X11
						CAN 11 250 0X12
						CAN 29_500_EX 0X13
						CAN 29_250_EX 0X14
						KWP2000 0X20
						KWP2000M 0X30
						ISO9141 0X40
						VPW 0X50
						PWM 0X60
						PRIVATE 0X70

10	1	Data stream mask	4	u8			Car data stream mask,
							Indicates whether 32 data streams are supported or not
11 Data flow item (50+10byte)	1	Battery voltage	2	u16	0.1	V	Display value is upload value /10 or less total 62byte
	2	Total mileage category	1	u8			Total mileage type
							1 OBD mileage
							2 GPS mileage
	3	total mileage	4	u32		m	Mileage, the unit of upload value is m (m)
	4	Total fuel consumption	4	u32		ml	Total fuel consumption, the unit of upload value is ml (ml)
	5	Engine speed	2	u16		RPM	Engine speed
	6	Vehicle speed	1	u8		Km/h	Vehicle speed
	7	Air flow	2	u16	0.1	g/s	Display value is uploaded value/10
	8	Air inlet temperature	1	u8		°C	Intake air temperature (upload range 0~255)
							The display value is the upload value -40 (actual range -40~215)
	9	Intake manifold pressure	1	u8		kpa	Intake manifold pressure (10~105kpa)
	10	Fault light status (MIL)	1	u8			if (Bit0) ON
							else OFF
	11	Number of fault codes	1	u8			Number of engine fault codes
	12	Coolant temperature	1	u8		°C	Water tank temperature (upload range 0~255)
							The display value is the upload value -40 (actual range -40~215)
	13	Vehicle ambient temperature	1	u8		°C	Vehicle ambient temperature (upload range 0~255)
							The display value is the upload value -40 (actual range -40~215)
	14	Fuel pressure	2	u16		kPa	Fuel pressure
	15	Atmospheric pressure	1	u8		kPa	Atmospheric pressure
	16	Valve position sensor	2	u16	0.1	%	Display value is uploaded value/10
	17	Accelerator pedal position	2	u16	0.1	%	Display value is uploaded value /10 (0~100)
	18	Engine running time	2	u16		s	Running time of a driving cycle
	19	Fault mileage	4	u32		km	Fault mileage (km)
20	Remaining oil	2	u16	0.1	L/%	Remaining oil, unit L or % Bit15 ==0%% OBD is a percentage ==1 unit L Display value is uploaded value/10	
21	Engine load	1	u8		%	Engine load, 0~100	
22	Long-term fuel correction (Group 1)	2	u16	0.1	%	Display value is uploaded value/10	
23	Ignition advance angle	2	u16	0.1	°	Display value (upload value/10) -64	
24	Total mileage of car instruments	4	u32		m	Total mileage of car meters, in meters	
25	Total vehicle running time	4	u32		s	Total running time of the vehicle after connecting the terminal, in seconds	

	26	Acceleration Mean 1	2	u16	mg	First 250 millisecond acceleration average
	27	Acceleration Mean 2	2	u16	mg	Second 250 millisecond acceleration average
	28	Acceleration Mean 3	2	u16	mg	The third 250 millisecond acceleration average
	29	Acceleration Mean 4	2	u16	mg	Fourth 250 millisecond acceleration average
	30	Acceleration Total Max	2	u16	mg	Maximum acceleration value in 1 second
	31	Vehicle data additional information list	N	NByte		For details, see the vehicle data additional information list.

Description:

1. State mask 10byteSTATUS MASK, indicating whether the car status of the 10th class is supported or not. If a certain state is not supported, the mask bit is 0 and the support is 1.
The 8 bits of the first byte of the status mask indicate whether the 8 status bits of the "1 Security Status" are supported or not.
2. Data stream mask 4byteDS MASK indicates that 30 data streams are supported or not. The byte order is high first and low.
such as:
 - BIT7 of the first byte of the mask determines whether the first data stream (battery voltage) is supported or not
 - BIT0 of the first byte of the mask determines whether the 8th data stream (air inlet temperature) is supported or not
 - BIT7 of the second byte of the mask determines whether the 9th data stream (intake manifold pressure) is supported or not
3. Each uploaded CAN static data pack has a fixed length of 126 bytes, and the unsupported data stream still occupies a fixed position byte.
- 4, the yellow part of the status field to open the relevant settings will have data, the default data is all 0.

4.8 Schedule_alarm ID index

alarmID	Alarm content	Alarm ID	Alarm content	Alarm ID	Alarm content	Alarm ID	Alarm content
0x0001	Ignition report	0x0101	Trailer alarm	0x0201	GPS module fault alarm	0x0301	Fortification glass is not closed
0x0002	Turn off the fire	0x0102	Long positioning alarm	0x0202	FLASH fault alarm	0x0302	Locked car did not successfully remind
0x0003	Fortification reporting	0x0103	Terminal pulls out the alarm	0x0203	CAN module fault alarm	0x0303	Timeout is not set to prevent
0x0004	Disarming report	0x0104	Terminal insertion alarm	0x0204	3D sensor failure alarm		
0x0005	Door open	0x0105	Low voltage alarm	0x0205	RTC module fault alarm		
0x0006	Door closed	0x0106	Idle too long	0x0206	Temperature sensor fault alarm		
0x0007	System startup	0x0107	Speed alarm				
		0x0108	Fatigue driving				
		0x0109	Water temperature alarm				
		0x010A	High speed neutral taxi				
		0x010B	Fuel consumption does not support alarm				
		0x010C	OBD does not support alarms				
		0x010D	Low water temperature and high speed				
		0x010E	Bus does not sleep alarm				
		0x010F	Open illegally				
		0x0110	Illegal ignition				
		0x0111	Accelerated alarm				
		0x0112	Rapid deceleration alarm				
		0x0113	Sharp turn alarm				
		0x0114	Collision alarm				
		0x0115	Abnormal vibration alarm				

After the green part of the alarm is reported, the alarm report package is added.

After the pink part of the alarm is reported, the vehicle data pack is reported.

4.9 Schedule_Alarm description package (52byte)

byteposition	content	Byte count	type	Decimal	unite	description
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0	Start Time Year、Mon、Day 、Hour、Min、Sec	6	u8			Starting time Format: year, month, day, hour, minute, second
6	End Time Year、Mon、Day 、Hour、Min、Sec	6	u8			End Time Format: year, month, day, hour, minute, second
34	ALM ID	2	u16			Alarm type ID 0x0106 - Idle too long 0x0107 - Overspeed alarm 0x0108 - Fatigue driving 0x0109 - water temperature alarm 0x010A - high speed neutral taxi
36	ALM Serial Num	2	u16			With the alarm data pack The alarm sequence number is consistent
12	Trip Mark	2	u16			Driving cycle label
14 GPS informat ion (20byte)	Valid Byte	1	u8			Bit0 Gps is valid or not 1/0 Yes / No
	Latitude	4	u32			0.000001 degrees Bit31=0/1 North latitude/South latitude
	Longitude	4	u32			0.000001 degrees Bit31=0/1 East / West longitude
	Altitude	4	u32	0.1	m	Altitude
	Satellites	1	u8			Number of satellites
	Speed	2	u16	0.1	km/h	GPS speed
	Direction	2	u16	0.1	degree	Direction, upload value /10
	PDOP	2	u16	0.01		Position accuracy, upload value / 100
38	Last Time	2	u16		s	Duration (idle/fatigue/overspeed/water temperature)
40	Idle Fuel Consume	2	u16		ml	Idle fuel consumption
42	Idle EngSpd Max	2	u16		RPM	Idle speed maximum
44	Idle EngSpd Min	2	u16		RPM	Idle speed minimum
46	OverSpeed Max Value	1	u8		km/h	Overspeed maximum speed value
47	OverSpeed Distance	2	u16		m	Speeding distance
49	Cool Temp Max	1	u8			Water temperature alarm temperature maximum The display value is the upload value -40 (actual range -40~215)
50	Neutral taxiing of HighSpd	2	u16		m	High speed neutral taxiing distance

4.10 Schedule Driving behavior data pack (100byte)

Byte position	content	Byte count	number type	description
0	ACC ON Time Year、Mon、Day 、Hour、Min、Sec	6	u8	ACC ON time Format: year, month, day, hour, minute, second
6	ACC OFF Time Year、Mon、Day 、Hour、Min、Sec	6	u8	ACC OFF time Format: year, month, day, hour, minute,

				second
12	Trip Mark	2	u16	Driving cycle label
14	Trip Distance Type	1	u8	The total mileage type of a driving cycle: 1—OBD mileage 2—GPS mileage 4—meter mileage
15	Trip Distance	4	u32	Total mileage of a driving cycle, in meters
19	Trip Fuel Consum	4	u32	Total fuel consumption for a driving cycle, in milliliters (ml)
23	Trip Duration Total	4	u32	The total duration of a driving cycle, in seconds
27	Trip Overspeed Duration	2	u16	The cumulative duration of a driving cycle overspeed, in seconds
29	Trip OverSpd Times	2	u16	One driving cycle speeding, unit times
31	Trip Speed Average	1	u8	Average driving speed of a driving cycle in KM/H
32	Trip Speed Maximum	1	u8	Maximum speed of a driving cycle, unit KM/H
33	Trip Idle Duration	4	u32	One driving cycle idle time, in seconds
37	Trip Mask of Braking	1	u8	Support for a driving cycle foot brake, 1 for support
38	Trip Number of Braking	2	u16	The total number of times a driving cycle foot brake, unit
40	Trip Accelerate times	4	u32	a driving cycle
44	Trip Decelerate times	4	u32	a driving cycle rapid deceleration
48	Trip Sharp turn times	4	u32	a driving cycle sharp turn
52	Trip Miles Spd less than 20Km/H	4	u32	Mileage at <20Km/H in m
56	Trip Miles Spd between 20-40Km/H	4	u32	Mileage at 20-40Km/H in m
60	Trip Miles Spd between 40-60Km/H	4	u32	Speed of40-60Km/H, unit: m
64	Trip Miles Spd between 60-80Km/H	4	u32	Mileage at 60-80Km/H in m
68	Trip Miles Spd between 80-100Km/H	4	u32	Mileage at 80- 100Km/H in m
72	Trip Miles Spd between 100-120Km/H	4	u32	Mileage at a speed of 100- 120Km/H, unit: m
76	Trip Miles Spd Over 120Km/H	4	u32	Mileage of speed above 120Km/H, unit: m
80	Accelerate total times	4	u32	Total number of rapid accelerations
84	Decelerate total times	4	u32	Total number of sudden decelerations
88	Sharp turn total times	4	u32	Total number of sharp turns
92	Overspeed Duration Total	4	u32	Overspeed cumulative total time, in seconds
96	Idlespeed Duration Total	4	u32	Total idle time, in seconds

Note: Reported each time the ACC is turned off.

4.11 Schedule_Driver information package (50byte)

Byte position	content	Byte count	type of data	description
0	Year	1	u8	0 to 99
1	Month	1	u8	1 to 12
2	Day	1	u8	1 to 31
3	Hour	1	u8	0 to 24
4	Minute	1	u8	0 to 59
5	Seconds	1	u8	0 to 59
6	card number	10	ASCII	10-bit card number ASCII
16	Reserved	40	u8	Reserved40 个 byte

4.12 Schedule_Oil quantity information (Nbyte)

Byte position	content	Byte count	type of data	description
0	hour	4	ASCII	Sensor working time
1	ID number	2	ASCII	
2	Level value	4	ASCII	For example, 1273 current liquid level is 127.3mm
3	Real-time value	4	ASCII	Reference only
4	Signal strength	4	ASCII	Reference only
5	Temperature value	4	ASCII	The first one is 0 for positive and 1 for negative;

4.13 Schedule_Fault code package (7+4*Nbyte)

Byte position	content	Byte count	type of data	description
0	Year	1	u8	0 to 23
1	Month	1	u8	0 to 59
2	Day	1	u8	0 to 59
3	Hour	1	u8	0 to 99
4	Minute	1	u8	1 to 12
5	Seconds	1	u8	1 to 31
6	Dtc Num	1	u8	0 means No fault code, non-zero is fault code number
7	Dtc1 ID	4	BYTE	The first fault code ID number: 4byte
12	Dtc2 ID	4	BYTE	The second fault code ID number: 4byte
17	Dtc3 ID	4	BYTE	The third fault code ID number: 4byte
...

Description: 1 fault code number consists of 4bytes.

If the protocol type is non-zero 0xF0 (that is, when it is not J1939 protocol), it is system ID, fault byte1, fault byte2, fault byte3:

If the protocol type is 0XF0, the first three bytes are the fault code byte, and the fourth byte is the fault code state.

4.14 Schedule Base station positioning data pack (69byte)

Byte position	content	Byte count	type of data	description
0	Year	1	u8	0 to 99
1	Month	1	u8	1 to 12
2	Day	1	u8	1 to 31
3	Hour	1	u8	0 to 23
4	Minute	1	u8	0 to 59
5	Seconds	1	u8	0 to 59
6	Trip Mark	2	u16	Driving behavior label
8	Operator Type	1	u8	Carrier Category 1-Mobile 2-Unicom 3-Telecommunications
9	rxq	1	u8	Receive quality

10	rla	1	u8	Receive level access minimum
11	txp	1	u8	Transmit power maximum CCCH
12	TA	1	u8	Timing Advance
13	S LAC CellID	8	u8	LAC (2) CellID (2) arfcn(2) rxl(1) bsic(1) 比如 1234 5678 90AB CD EF LAC 和 CellID 各占两个 byte, arfcn 两个 byte, rxl 和 bsic 各一个 byte
17	N1 LAC CellID...	8	u8	N1 LAC (2) CellID (2) arfcn(2) rxl(1) bsic(1)
25	N2 LAC CellID...	8	u8	N2 LAC (2) CellID (2) arfcn(2) rxl(1) bsic(1)
33	N3 LAC CellID...	8	u8	N3 LAC (2) CellID (2) arfcn(2) rxl(1) bsic(1)
41	N4 LAC CellID...	8	u8	N4 LAC (2) CellID (2) arfcn(2) rxl(1) bsic(1)
49	N5 LAC CellID...	8	u8	N5 LAC (2) CellID (2) arfcn(2) rxl(1) bsic(1)
57	N6 LAC CellID...	8	u8	N6 LAC (2) CellID (2) arfcn(2) rxl(1) bsic(1)

4.15 Schedule_4G Base station positioning data pack (Nbyte)

byteposition	content	Byte count	type of data	description
0	Year	1	u8	0 to 99
1	Month	1	u8	1 to 12
2	Day	1	u8	1 to 31
3	Hour	1	u8	0 to 23
4	Minute	1	u8	0 to 59
5	Seconds	1	u8	0 to 59
6	Trip Mark	2	u16	Driving behavior label
8	Operator Type	1	u8	Carrier Category 1-Mobile 2-Unicom 3-Telecommunications
9	Sign type	1	u8	Signal type 1-2G corresponds to the green frame 2-3G corresponds to the brown frame 3-4G corresponds to the orange frame
10	,	1	ASCII	0x2C
11	mcc	N	u8	All the following parameters, refer to the attachment ATC_QuecCell_V1.0.pdf
12	,	1	ASCII	0x2C
13	mnc	N	u8	
14	,	1	ASCII	0x2C
15	lac	N	u8	
16	,	1	ASCII	0x2C
17	cellid	N	u8	
18	,	1	ASCII	0x2C
18	bsic	N	u8	
20	,	1	ASCII	0x2C
21	arfcn	N	u8	
22	,	1	ASCII	0x2C
23	band	N	u8	
24	,	1	ASCII	0x2C
25	rxlev	N	u8	
26	,	1	ASCII	0x2C

27	txp	N	u8	
28	,	1	ASCII	0x2C
29	rla	N	u8	
30	,	1	ASCII	0x2C
31	drx	N	u8	
32	,	1	ASCII	0x2C
33	cl	N	u8	
34	,	1	ASCII	0x2C
35	cl	N	u8	
36	,	1	ASCII	0x2C
37	gprs	N	u8	
38	,	1	ASCII	0x2C
39	tch	N	u8	
40	,	1	ASCII	0x2C
41	ts	N	u8	
42	,	1	ASCII	0x2C
43	ta	N	u8	
44	,	1	ASCII	0x2C
45	maio	N	u8	
46	,	1	ASCII	0x2C
47	hsn	N	u8	
48	,	1	ASCII	0x2C
49	rxlevsub	N	u8	
50	,	1	ASCII	0x2C
51	rxlevfull	N	u8	
52	,	1	ASCII	0x2C
53	rxqualsub	N	u8	
54	,	1	ASCII	0x2C
55	rxqualfull	N	u8	
56	,	1	ASCII	0x2C
57	voicecodec	N	u8	
58	,	1	ASCII	0x2C
59		N	u8	
60	,	1	ASCII	0x2C
61	mcc	N	u8	
62	,	1	ASCII	0x2C
63	mnc	N	u8	
64	,	1	ASCII	0x2C
65	lac	N	u8	
66	,	1	ASCII	0x2C
67	cellid	N	u8	
68	,	1	ASCII	0x2C
69	uarfcn	N	u8	
70	,	1	ASCII	0x2C

71	psc	N	u8	
72	,	1	ASCII	0x2C
73	racid	N	u8	
74	,	1	ASCII	0x2C
75	rscp	N	u8	
76	,	1	ASCII	0x2C
77	ecio	N	u8	
78	,	1	ASCII	0x2C
79	phych	N	u8	
80	,	1	ASCII	0x2C
81	sf	N	u8	
82	,	1	ASCII	0x2C
83	slot	N	u8	
84	,	1	ASCII	0x2C
85	speech_code	N	u8	
86	,	1	ASCII	0x2C
87	comMod	N	u8	
88	,	1	ASCII	0x2C
89	mcc	N	u8	
90	,	1	ASCII	0x2C
91	mnc	N	u8	
92	,	1	ASCII	0x2C
93	cellid	N	u8	
94	,	1	ASCII	0x2C
95	pci	N	u8	
97	,	1	ASCII	0x2C
98	earfcn	N	u8	
99	,	1	ASCII	0x2C
100	freq_band_ind	N	u8	
101	,	1	ASCII	0x2C
102	ul_bandwidth	N	u8	
103	,	1	ASCII	0x2C
104	dl_bandwidth	N	u8	
105	,	1	ASCII	0x2C
106	tac	N	u8	
107	,	1	ASCII	0x2C
108	rsrp	N	u8	
109	,	1	ASCII	0x2C
110	rsrq	N	u8	
111	,	1	ASCII	0x2C
112	rssi	N	u8	
113	,	1	ASCII	0x2C
114	srxlev	N	u8	

4.16 Schedule_Standard single base station positioning data pack (23byte)

byteposition	content	Byte count	type of data	description
0	Year	1	u8	0 to 99
1	Month	1	u8	1 to 12
2	Day	1	u8	1 to 31
3	Hour	1	u8	0 to 23
4	Minute	1	u8	0 to 59
5	Seconds	1	u8	0 to 59
6	Trip Mark	2	u16	Driving behavior label
8	Operator Type	1	u8	Carrier Category 1-Mobile 2-Unicom 3-Telecommunications (4G) 4-Telecom (CDMA) (Note: Telecom CDMA positioning mode is not the same as other base station positioning, valid with the upper color corresponding area, No effect area filled with 0)
9	Mobile country code (MCC)	2	u8	Mobile country code (China is 460)
11	Location area code (LAC)	2	u8	Area code.
13	Cell identity (CID)	4	u8	Base station ID. 2G network actually uses only 2 bytes, 4G network may use 4byte
17	System identity (SID)	2	u8	System code
19	Net identity (NID)	2	u8	Network code
21	Base identity (BID)	2	u8	Base station ID

4.17 Schedule_Base station information backhaul interval parameter packet ※

No.	content	Byte count	type of data	description
0	Enable	1	ASCII	Whether to return 0/1 no return / return
,	,	1	ASCII	0x2C
X	Gps Loc InterVal	Uncertain length	ASCII	Return interval in GPS positioning, in seconds
,	,	1	ASCII	0x2C
X	Gps None InterVal	Uncertain length	ASCII	Return interval when GPS is not positioned, in seconds

4.18 Schedule_Model ID setting table ※

No.	content	Byte count	type of data	description
0	VEH_ID	4	ASCII	Model car ID number, see model car EXCEL table Hexadecimal ASCII, 1E01
1	,	1	ASCII	0x2C
2	Total Consum	Uncertain length	ASCII	1.0 displacement is 10 2.5 displacement is 25

				3.2 displacement is 32
--	--	--	--	------------------------

4.19 Schedule_Mileage fuel consumption package ※

No.	content	Byte count	type of data	description
0	ODO Total	Uncertain length	ASCII	Total mileage in meters 153,000
1	,	1	ASCII	0x2C
2	Consum Total	Uncertain length	ASCII	Total fuel consumption in milliliters

4.20 Schedule_Heartbeat interval parameter package ※

No.	content	Byte count	type of data	description
0	Interval ACC ON	Uncertain length	ASCII	ACC ON heartbeat interval, in seconds
1	,	1	ASCII	0x2C
2	Interval ACC OFF	Uncertain length	ASCII	ACC OFF heartbeat interval, in seconds

Note:

1. The first time the heartbeat packet is uploaded once, the system wakes up and uploads a heartbeat packet.
2. After ACC OFF sleep, reach the heartbeat interval, automatically wake up the terminal, and upload a heartbeat packet.
3. ACC ON minimum 1 minute, ACC OFF minimum 1 hour, maximum 12 hours.

4.21 Schedule_Vehicle data backhaul interval parameter package ※

byteposition	content	Byte count	type of data	description
0	Enable	1	ASCII	Whether to return 0/1 no return / return
1	,	1	ASCII	0x2C
2	InterVal	Uncertain length	ASCII	Timed return interval, unit seconds greater than 5S less than 3MIN

4.22 Schedule_Vehicle data backhaul interval parameter package ※

byteposition	content	Byte count	type of data	description
0	OPEN	1	ASCII	Whether to report intensively 0/1 Turn off GPS intensive reporting/opening
1	,	1	ASCII	0x2C
2	InterVal	Uncertain length	ASCII	GPS intensive reporting duration, in seconds

4.23 Schedule_CAN Intensive data pack parameters ※

byteposition	content	Byte count	type of data	description
0	OPEN	1	ASCII	Whether intensive reporting 0/1 Close CAN intensive reporting / open CAN intensive reporting

1	,	1	ASCII	0x2C
2	InterVal	Uncertain length	ASCII	CAN intensive reporting duration, in seconds

4.24 Schedule_Vehicle data intensive reporting parameters ※

byteposition	content	Byte count	type of data	description
0	OPEN	1	ASCII	Whether to report vehicle data intensively 0/1 Close dense report/open
1	,	1	ASCII	0x2C
2	InterVal	Uncertain length	ASCII	Vehicle data intensive reporting duration (1 per second), in seconds

4.25 Schedule_setting Single GPRS communication parameter package ※

Number of segments	byteposition	content	Byte count	type of data	description
0	0	Switch	1	ASCII	0--Backup communication parameters, next online switch 1-- Immediately go offline and go online again
1	1	,	1	ASCII	0x2C
2	2	Index Pack Num	1	ASCII	Number of communication parameter packets
3	4	,	1	ASCII	0x2C
4.1	5	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	6	,	1	ASCII	0x2C
	7	FQDN	1	ASCII	Server address type 0 is the IP address 1 is the domain name
	8	,	1	ASCII	0x2C
	9	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain length	ASCII	TCP/UDP port
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the DNS is 0.0.0.0.
	X	,	1	ASCII	0x2C
	X	APN	Uncertain length	ASCII	APN name
	X	,	1	ASCII	0x2C
	X	User name	Uncertain length	ASCII	username
	X	,	1	ASCII	0x2C
X	Pass word	Uncertain length	ASCII	password	
X	0x0D	1	u8	Separator	

	X	0x0A	1	u8	Separator
4.2	X	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	X	,	1	ASCII	0x2C
	X	FQDN	1	ASCII	Server address type 0 is the IP address 1 is the domain name
	X	,	1	ASCII	0x2C
	X	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain length	ASCII	TCP/UDP port
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the DNS is 0.0.0.0.
	X	,	1	ASCII	0x2C
	X	APN	Uncertain length	ASCII	APN name
	X	,	1	ASCII	0x2C
	X	User name	Uncertain length	ASCII	username
	X	,	1	ASCII	0x2C
	X	Pass word	Uncertain length	ASCII	password
	X	0x0D	1	u8	Separator
	X	0x0A	1	u8	Separator
4.3	X	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	X	,	1	ASCII	0x2C
	X	FQDN	1	ASCII	Server address type
	X	,	1	ASCII	0x2C
	X	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain length	ASCII	TCP/UDP port
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the DNS is 0.0.0.0.
	X	,	1	ASCII	0x2C
	X	APN	Uncertain length	ASCII	APN name
	X	,	1	ASCII	0x2C
	X	User name	Uncertain length	ASCII	username
	X	,	1	ASCII	0x2C
	X	Pass word	Uncertain length	ASCII	password
	X	0x0D	1	u8	Separator
	X	0x0A	1	u8	Separator

4.26 Schedule_settingMultiple GPRS communication parameter packages

※

Number of segments	byte position	content	Byte count	type of data	description
0	0	Switch	1	ASCII	0--Backup communication parameters, next online switch 1-- Immediately go offline and go online again
1	1	,	1	ASCII	0x2C
2	2	Index Pack Num	1	ASCII	communication parameter packages
3	4	,	1	ASCII	0x2C
4.1	5	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	6	,	1	ASCII	0x2C
	7	FQDN	1	ASCII	Server address type
	8	,	1	ASCII	0x2C
	9	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain length	ASCII	TCP/UDP port
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the DNS is 0.0.0.0.
	X	,	1	ASCII	0x2C
	X	APN	Uncertain length	ASCII	APN name
	X	,	1	ASCII	0x2C
	X	User name	Uncertain length	ASCII	username
	X	,	1	ASCII	0x2C
	X	Pass word	Uncertain length	ASCII	password
	X	0x0D	1	u8	Separator
X	0x0A	1	u8	Separator	
4.2	X	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	X	,	1	ASCII	0x2C
	X	FQDN	1	ASCII	Server address type
	X	,	1	ASCII	0x2C
	X	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain length	ASCII	TCP/UDP port
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the DNS is 0 0 0 0
	X	,	1	ASCII	0x2C

	X	APN	Uncertain length	ASCII	APN name
	X	,	1	ASCII	0x2C
	X	User name	Uncertain length	ASCII	username
	X	,	1	ASCII	0x2C
	X	Pass word	Uncertain length	ASCII	password
	X	0x0D	1	u8	Separator
	X	0x0A	1	u8	Separator
4.3	X	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	X	,	1	ASCII	0x2C
	X	FQDN	1	ASCII	Server address type
	X	,	1	ASCII	0x2C
	X	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain length	ASCII	TCP/UDP port
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the DNS is 0.0.0.0.
	X	,	1	ASCII	0x2C
	X	APN	Uncertain length	ASCII	APN name
	X	,	1	ASCII	0x2C
	X	User name	Uncertain length	ASCII	username
	X	,	1	ASCII	0x2C
	X	Pass word	Uncertain length	ASCII	password
	X	0x0D	1	u8	Separator
	X	0x0A	1	u8	Separator

4.27 Schedule_query GPRS communication parameter packages ☒

Number of segments	byte position	content	Byte count	type of data	description
1	0	Index Pack Num	1	ASCII	communication parameter packages
2	1	,	1	ASCII	0x2C
31	2	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	3	,	1	ASCII	0x2C
	4	FQDN	1	ASCII	Server address type
	5	,	1	ASCII	0x2C
	6	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain	ASCII	TCP/UDP port

			length		
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the DNS is 0 0 0 0
	X	,	1	ASCII	0x2C
	X	APN	Uncertain length	ASCII	APN name
	X	,	1	ASCII	0x2C
	X	User name	Uncertain length	ASCII	username
	X	,	1	ASCII	0x2C
	X	Pass word	Uncertain length	ASCII	password
	X	0x0D	1	u8	Separator
	X	0x0A	1	u8	Separator
3.2	X	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	X	,	1	ASCII	0x2C
	X	FQDN	1	ASCII	Server address type
	X	,	1	ASCII	0x2C
	X	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain length	ASCII	TCP/UDP port
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the DNS is 0 0 0 0
	X	,	1	ASCII	0x2C
	X	APN	Uncertain length	ASCII	APN name
	X	,	1	ASCII	0x2C
	X	User name	Uncertain length	ASCII	username
	X	,	1	ASCII	0x2C
	X	Pass word	Uncertain length	ASCII	password
	X	0x0D	1	u8	Separator
	X	0x0A	1	u8	Separator
3.3	X	Index Num	1	ASCII	Communication parameter package serial number, starting from 1
	X	,	1	ASCII	0x2C
	X	FQDN	1	ASCII	Server address type
	X	,	1	ASCII	0x2C
	X	Host Address	Uncertain length	ASCII	server address
	X	,	1	ASCII	0x2C
	X	Port	Uncertain length	ASCII	TCP/UDP port
	X	,	1	ASCII	0x2C
	X	DNS	Uncertain length	ASCII	Domain name resolution server If the Host Address is an IP address, the

					DNS is 0.0.0.0.
X	,		1	ASCII	0x2C
X	APN		Uncertain length	ASCII	APN name
X	,		1	ASCII	0x2C
X	User name		Uncertain length	ASCII	username
X	,		1	ASCII	0x2C
X	Pass word		Uncertain length	ASCII	password
X	0x0D		1	u8	Separator
X	0x0A		1	u8	Separator

4.28 Schedule_Operation and maintenance number parameter package ※

No.	content	Byte count	type of data	description
0	Index	1	ASCII	SMS center number serial number, No. starts from 1
1	,	1	ASCII	0x2C
2	SMS Number	Uncertain length	ASCII	SMS center number

4.29 Schedule_Alarm number parameter package ※

No.	content	Byte count	type of data	description
0	Index	1	ASCII	Alarm number serial number, No. starts from 1
1	,	1	ASCII	0x2C
2	SMS Number	Uncertain length	ASCII	Alarm number

4.30 Schedule_Specify SMS number parameter package ※

No.	content	Byte count	type of data	description
0	Num Length	X	ASCII	Number length
1	,	1	ASCII	0x2C
2	SMS Number	Uncertain length	ASCII	Specify SMS number

4.31 Schedule_Alarm mode parameter package ※

No.	content	Byte count	type of data	description
0	Alarm Way	1	ASCII	Alarm mode : 0 GPRS 1 GPRS+SMS

4.32 Schedule_Low voltage alarm parameter package ※

No.	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	Alarm Voltage	X	ASCII	Accuracy 0.1V

4.33 Schedule_Vehicle ignition voltage parameter package ※

No.	content	Byte count	type of data	description
0	ACC Voltage	X	ASCII	Accuracy 0.1V

4.34 Schedule_Trailer alarm parameter package ※

No.	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	Tow Spd	Uncertain length	ASCII	Trailer sill speed (unit: KM/H, greater than 15KM/H)
3	,	1	ASCII	0x2C
4	Tow Interval	Uncertain length	ASCII	Trailer conditions meet duration (in seconds, greater than 20 seconds)

4.35 Schedule_碰撞报警参数包 ※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	CTh Dur	Uncertain length	ASCII	Vibration duration, unit (ms)
3	,	1	ASCII	0x2C
4	Wake Up Threshold	Uncertain length	ASCII	Sleep wakeup acceleration threshold, unit (mg)
5	,	1	ASCII	0x2C
6	Crash Threshold During Running	Uncertain length	ASCII	Runtime collision alarm acceleration threshold, unit (mg)

4.36 Schedule_Long positioning time alarm parameter package ※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	Alarm Time	Uncertain length	ASCII	Positioning too long alarm time threshold Unit: Min (minutes)

4.37 Schedule_Idle time too long alarm parameter package ※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
1	Alarm Time	Uncertain length	ASCII	Idle too long alarm time threshold Unit: second

4.38 Schedule_Accelerated acceleration parameter package ※

Byte position	content	Byte count	type of data	description
0	SpdUp3D	Uncertain length	ASCII	Accelerated acceleration threshold condition, in mg
1	,	1	ASCII	0x2C
2	SpdUp3DPeriod	Uncertain length	ASCII	Acceleration cycle maximum time, in seconds
3	,	1	ASCII	0x2C
4	SpdUpDefKmH	Uncertain length	ASCII	1S speed drop before and after rapid acceleration, unit KM/H
5	,	1	ASCII	0x2C
6	SpdUpTimes	Uncertain length	ASCII	1S speed drop duration before and after rapid acceleration

4.39 Schedule_Acute deceleration parameter package ※

Byte position	content	Byte count	type of data	description
0	SpdDn3D	Uncertain length	ASCII	Rapid deceleration acceleration threshold condition, unit mg
1	,	1	ASCII	0x2C
2	SpdDnPeriod	Uncertain length	ASCII	Maximum deceleration cycle time, in seconds
3	,	1	ASCII	0x2C
4	SpdDnDefKmH	Uncertain length	ASCII	1S speed drop before and after rapid deceleration, unit KM/H
5	,	1	ASCII	0x2C
6	SpdDnTimes	Uncertain length	ASCII	1S speed drop duration before and after rapid deceleration
7	,	1	ASCII	0x2C
8	SpdDnForceKmH	Uncertain length	ASCII	1S drop forced value before and after the rapid deceleration speed

4.40 Schedule_Sharp turn parameter package ※

Byte position	content	Byte count	type of data	description
0	ShpTn3D	Uncertain length	ASCII	Sharp turn acceleration threshold condition, unit mg
1	,	1	ASCII	0x2C
2	ShpTnKmH	Uncertain length	ASCII	Sharp turn speed threshold condition, unit KM/H

3	,	1	ASCII	0x2C
4	ShpTn Factor1	Uncertain length	ASCII	Sharp turn factor 1
5	,	1	ASCII	0x2C
6	ShpTn Factor2	Uncertain length	ASCII	Sharp turn factor 2
7	,	1	ASCII	0x2C
8	ShpTn Factor3	Uncertain length	ASCII	Sharp turn factor 3
9	,	1	ASCII	0x2C
10	ShpTnStopTimes	Uncertain length	ASCII	Sharp turn cycle maximum time, in seconds

4.41 Schedule_Water temperature alarm parameter package ※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	Default Temp Para	Uncertain length	ASCII	Water temperature alarm threshold, unit ° C

4.42 Schedule_Over speed alarm parameter package ※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	Over Speed Threshold	Uncertain length	ASCII	Overspeed alarm threshold, unit KM/H
3	,	1	ASCII	0x2C
4	OverSpeed Duration	Uncertain length	ASCII	Overspeed duration, meeting the overspeed alarm condition in seconds.

4.43 Schedule_High speed neutral taxi warning parameter package ※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	VehSpd	Uncertain length	ASCII	Alarm speed threshold, unit KM/H
3	,	1	ASCII	0x2C
4	EngSpeed	Uncertain length	ASCII	Alarm speed threshold, unit revolutions per second
5	,	1	ASCII	0x2C
6	Duration	Uncertain length	ASCII	Duration, in seconds
7	,	1	ASCII	0x2C
8	Stop Times	Uncertain length	ASCII	The alarm is generated to the second alarm judgment interval, in seconds

4.44 Schedule_Fatigue driving alarm parameter package ※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Alarm shielding: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	Duration	Uncertain length	ASCII	Driving duration threshold, in minutes
3	,	1	ASCII	0x2C
4	Break duration Max	Uncertain length	ASCII	Intermediate rest maximum time threshold, unit: minute

4.45 Schedule_Specified number SMS packet ※

Byte position	content	Byte count	type of data	description	#HLMMSG#
1	Dev ID	14	ASCII	Device ID No. M112233445566	
2	SW Version	12	ASCII	Software version number HLM100V100001	
3	SW Date	10	ASCII	Software Date 2012-12-03	
4	CARTYPE	3	ASCII	Model car (2byte), displacement (1byte)	
5	OBD Protocal Type	1	ASCII		
6	ODO Total	N	ASCII		
7	Fuel Total	N	ASCII		

4.46 Schedule_Terminal software upgrade request package ※

Byte position	content	Byte count	type of data	description
0	VERSION	14	ASCII	Software version number: HLM100AV100001 HL -----Product Name M100A -----terminal name code 100 -----software version number, release version 001 -----software minor version number, submitted as an internal test
X	,	1	ASCII	0x2C
X	FTP ADDRESS	Uncertain length	ASCII	FTP address, 192.168.1.1
X	,	1	ASCII	0x2C
X	FTP PORT	Uncertain length	ASCII	FTP port
X	,	1	ASCII	0x2C
X	USER NAME	Uncertain length	ASCII	username
X	,	1	ASCII	0x2C
X	PASSWD	Uncertain length	ASCII	password
X	,	1	ASCII	0x2C
X	FILE NAME	Uncertain length	ASCII	File name, such as HLM100V100001.BIN
X	,	1	ASCII	0x2C

X	FILE PATH	Uncertain length	ASCII	file path
X	,	1	ASCII	0x2C

sample: HLM100AV100001, 255.255.1.1, 21, HL, HL, HLM100AV100001.BIN, ./,

4.47 Schedule_Sleep wake pack (11byte)

Byte position	content	Byte count	type of data	description
0	Wake Type	6	u8	Year, month, day, hour, minute
6	Wake Type	1	u8	Heartbeat 0X01 CAN1 0X02 CAN2 0X04 G-SENSOR 0X08 Voltage change 0X10 GSM 0X20
7	Bat Vol	2	u16	Bus voltage
9	Accel Total	2	u16	Vibration acceleration value

4.48 Schedule GPS Intensive data pack (3 + 28*N pack)

Segment sequence	Sub sequence	content	Byte count	number type	precision	unit	description
1	1	Trip Mark	2	u16			Driving cycle label
2	1	Package Num	1	u8			Number ofGPS packets
3.1 (28byte)	1	Year	1	u8			year
	2	Month	1	u8			month
	3	Day	1	u8			day
	4	Hour	1	u8			Time
	5	Minute	1	u8			Minute
	6	Seconds	1	u8			second
	7	Latitude	4	u32			0.000001 degrees Bit31=0/1 North latitude/South latitude
	8	Longitude	4	u32			0.000001 degrees Bit31=0/1 East / West longitude
	9	Altitude	4	u32	0.1	m	unit
	10	Satellites	1	u8			Number of satellites
	11	Speed	2	u16	0.1	km/h	GPS speed
	12	Direction	2	u16	0.1	degree	Direction, upload value /10
	13	PDOP	2	u16	0.01		Position accuracy, upload value / 100
	14	Bat Vol	2	u16	0.1	V	Battery voltage
	15	Obd Spd	1	u8		Km/h	Vehicle speed
3.2 (28byte)	1	Year	1	u8			year
	2	Month	1	u8			month
	3	Day	1	u8			day
	4	Hour	1	u8			Time
	5	Minute	1	u8			Minute
	6	Seconds	1	u8			second
	7	Latitude	4	u32			0.000001 degrees Bit31=0/1 North latitude/South latitude

	8	Longitude	4	u32			0.000001 degrees Bit31=0/1 East / West longitude
	9	Altitude	4	u32	0.1	m	unit
	10	Satellites	1	u8			Number of satellites
	11	Speed	2	u16	0.1	km/h	GPS speed
	12	Direction	2	u16	0.1	degree	Direction, upload value /10
	13	PDOP	2	u16	0.01		Position accuracy, upload value / 100
	14	Bat Vol	2	u16	0.1	V	Battery voltage
	15	Obd Spd	1	u8		Km/h	Vehicle speed
3.3	1	...	...	...	...	...	...

4.49 Schedule CAN Intensive data pack (16 + 50*N pack)

Segment sequence	Sub sequence	content	Byte count	number type	precision	unit	description
1	1	Year	1	u8			
	2	Month	1	u8			
	3	Day	1	u8			
	4	Hour	1	u8			
	5	Minute	1	u8			
	6	Seconds	1	u8			
2	1	Trip Mark	2	u16			Driving cycle label
3	1	Model ID	2	u16			Model ID table
4	1	Agreement category	1	u8			CAN 11_500_0X01 CAN 11_250_0X02 CAN 29_500_EX_0X03 CAN 29_250_EX_0X04 KWP2000_0X10 KWP2000M_0X11 ISO9141_0X20 PRIVATE_0X30
5	1	Data stream mask	4	u64			Car data stream mask, indicating whether 40 data streams are supported or not
6	1	Total number of data streams	1	u8			N number of data stream packets, determine the following 82byte loop times
6.1 Data stream group1 (50byte)	1	Battery voltage	2	u16	0.1	v	Display value is upload value /10 or less total 62byte
	2	Total mileage category	1	u8			Total mileage type 1 OBD mileage 2 GPS mileage 4 ODO instrument mileage
	3	total mileage	4	u32		m	Mileage, the upload value is m
	4	Total fuel consumption	4	u32		ml	Total fuel consumption, the upload value is in ml
	5	Engine speed	2	u16		RPM	Engine speed
	6	Vehicle speed	1	u8		Km/h	Vehicle speed
	7	Air flow	2	u16	0.1	g/s	Display value is uploaded value/10
	8	Air inlet temperature	1	u8		℃	Intake air temperature (upload range 0~255) The display value is the upload value -40 (actual range -40~215)
	9	Intake manifold pressure	1	u8		kpa	Intake manifold pressure (10~105kpa)
	10	Fault light status (MIL)	1	u8			if(Bit0) ON else OFF
	11	Number of fault	1	u8			Number of engine fault codes

		codes					
	12	Coolant temperature	1	u8		°C	Water tank temperature (upload range 0~255) The display value is the upload value -40 (actual range -40~215)
	13	Vehicle ambient temperature	1	u8		°C	Vehicle ambient temperature (upload range 0~255) The display value is the upload value -40 (actual range -40~215)
	14	Fuel pressure	2	u16		kPa	Fuel pressure
	15	Atmospheric pressure	1	u8		kPa	Atmospheric pressure
	16	Valve position sensor	2	u16	0.1	%	Display value is uploaded value/10
	17	油门踏板 position	2	u16	0.1	%	Display value is uploaded value /10 (0~100)
	18	Engine running time	2	u16		s	Running time of a driving cycle
	19	Fault mileage	4	u32		km	Fault mileage (km)
	20	Remaining oil	2	u16	0.1	L/%	Remaining oil, unit L or % Bit15 ==0% OBD is a percentage ==1 unit L Display value is uploaded value/10
	21	Engine load	1	u8		%	Engine load, 0~100
	22	Long-term fuel correction (Group 1)	2	u16	0.1	%	Display value is uploaded value/10
	23	Ignition advance angle	2	u16	0.1	°	Display value (upload value/10) -64
	24	Total bus bus mileage	4	u32		m	Total mileage of car meters, per kilometer
	25	Total vehicle running time	4	u32		s	Total running time of the vehicle after connecting the terminal, in seconds
6.2 Data stream group2	1	Battery voltage	2	u16	0.1	V	Display value is upload value /10 or less total 62byte
	2	Total mileage category	1	u8			Total mileage type 1 OBD mileage 2 GPS mileage
	3	total mileage	4	u32		m	Mileage, the unit of upload value is m (m)
	4	Total fuel consumption	4	u32		ml	Total fuel consumption, the unit of upload value is ml (ml)
	7	Engine speed	2	u16		RPM	Engine speed
	8	Vehicle speed	1	u8		Km/h	Vehicle speed
	15	Air flow	2	u16	0.1	g/s	Display value is uploaded value/10
	9	Air inlet temperature	1	u8		°C	Intake air temperature (upload range 0~255) The display value is the upload value -40 (actual range -40~215)
	12	Intake manifold pressure	1	u8		kpa	Intake manifold pressure (10~105kpa)
	5	Fault light status (MIL)	1	u8			if (Bit0) ON else OFF
	6	Number of fault codes	1	u8			Number of engine fault codes
	10	Coolant temperature	1	u8		°C	Water tank temperature (upload range 0~255) The display value is the upload value -40 (actual range -40~215)
	11	Vehicle ambient temperature	1	u8		°C	Vehicle ambient temperature (upload range 0~255) The display value is the upload value -40

							(actual range -40~215)
	13	Fuel pressure	2	u16		kPa	Fuel pressure
	14	Atmospheric pressure	1	u8		kPa	Atmospheric pressure
	16	Valve position sensor	2	u16	0.1	%	Display value is uploaded value/10
	17	Accelerator pedal position	2	u16	0.1	%	Display value is uploaded value /10 (0~100)
	18	Engine running time	2	u16		s	Running time of a driving cycle
	19	Fault mileage	4	u32		km	Fault mileage (km)
	20	Remaining oil	2	u16	0.1	L/%	Remaining oil, unit L or % Bit15 ==0% OBD is a percentage ==1 unit L Display value is uploaded value/10
	21	Engine load	1	u8		%	Engine load, 0~100
	22	Long-term fuel correction (Group 1)	2	u16	0.1	%	Display value is uploaded value/10
	23	Ignition advance angle	2	u16	0.1	°	Display value (upload value/10) -64
	24	Total bus bus mileage	4	u32		m	Total mileage of car meters, in meters
	25	Total vehicle running time	4	u32		s	Total running time of the vehicle after connecting the terminal, in seconds
6.3 Data stream group3	1	Battery voltage	2	u16	0.1	V	Display value is upload value /10 or less total 62byte

Description:

1.The purpose of the continuous data pack is to realize the dynamic update of the data value on the APP side and present the dynamic effect.

The data pack uploads the total data pack collection every 6 seconds. The data pack may collect a total of 6 packet data sets for each 1S.

Or a total of 3 packet data sets collected once per 2S.

Or a total of 2 packet data sets collected once every 3S.

Or a total of 1 packet data set collected once every 6S.

4.50 Schedule_setting WIFI parameter ✖

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Turn off the reset: 0 off 1 open 2 Reply to factory settings
1	,	1	ASCII	0x2C
2	SSIDHEX	Uncertain length	ASCII	0 SSID setting command parameter is a string 1 SSID setting command parameter is hexadecimal
3	,	1	ASCII	0x2C
4	SSID	Uncertain length	ASCII	
5	,	1	ASCII	0x2C
6	BCAST	1	ASCII	Broadcast setting: 0 turn off the broadcast 1 Turn on the radio

7	,	1	ASCII	0x2C
8	WAUTH2			Network encryption 0 No encryption 1 need to be encrypted
9	,	1	ASCII	0x2C
10	WAUTH_PWD		ASCII	Password string
19	,	1	ASCII	0x2C
20	MOCH_MODE		ASCII	802.11 network frequency mode selection 1 a/n 5G mode 2 b 2.4G mode 3 b/g 2.4G mode 4 b/g/n 2.4G mode
21	,	1	ASCII	0x2C
22	MOCH_CHANNEL		ASCII	802.11 network channel selection 0 automatic selection 1-13 2.4G mode 149/153/157/161/165 5G channel number
23	,	1	ASCII	0x2C
24	ISO		ASCII	Synchronous setting 0 off 1 open
25	,	1	ASCII	0x2C
26	NAT			NAT type 0 SYMMETRIC 1 CONE
27	,	1	ASCII	0x2C
28	SERVER			Current QSERVER status 0 off 1 open
29	,	1	ASCII	0x2C
30	SETMAC			Setting WIFI module's WIFI address Such as: "00:03:7F:05:C0:CB"

4.51 Schedule_query WIFI parameter ※

byteposition	content	Byte count	type of data	description
0	Enable	1	ASCII	0 means no query, 1 means need query to return value
1	,	1	ASCII	0x2C
2	SSIDHEX	1	ASCII	0 means no query, 1 means need query to return value
3	,	1	ASCII	0x2C
4	SSID	1	ASCII	0 means no query, 1 means need query to return value
5	,	1	ASCII	0x2C
6	BCAST	1	ASCII	0 means no query, 1 means need query to return value
7	,	1	ASCII	0x2C
8	WAUTH1	1	ASCII	0 means no query, 1 means need query to return value
7	,	1	ASCII	0x2C
10	WAUTH_PWD	1	ASCII	0 means no query, 1 means need query to return value
19	,	1	ASCII	0x2C
20	MOCH_MODE	1	ASCII	0 means no query, 1 means need query to return value
21	,	1	ASCII	0x2C
22	MOCH_CHANNEL	1	ASCII	0 means no query, 1 means need query to return value
23	,	1	ASCII	0x2C
24	ISO	1	ASCII	0 means no query, 1 means need query to return value
33	,	1	ASCII	0x2C
34	NAT	1		0 means no query, 1 means need query to return value
35	,	1	ASCII	0x2C
36	SERVER	1		0 means no query, 1 means need query to return value
37	,	1	ASCII	0x2C
38	SETMAC	Uncertain length		0 means no query, 1 means need query to return value

4.52 Schedule_WIFI link client MAC address packet

byteposition	content	Byte count	type of data	description
0	CNT	1	ASCII	Number of WIFI clients CNT is 0, the following fields are all No
1	,	1	ASCII	0x2C
2	MAC1	Uncertain length	ASCII	The first connection client MAC information AB:CD:EF:XX:XX:XX
3	,	1	ASCII	0x2C
4	IP1	Uncertain length	ASCII	The first connection client IP information 192.168.11.7
5	,	1	ASCII	0x2C
6	MAC2	1	ASCII	The second connection client MAC information XX:XX:XX: AB:CD:EF
7	,	1	ASCII	0x2C
8	IP2			The second connection client IP information 192.168.11.8
9	,	1	ASCII	0x2C

			
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4.53 Schedule_GPS mode parameter※

Byte position	content	Byte count	type of data	description
0	GPS positioning mode	1	U8	0x00: GPS plus Beidou positioning (default) 0x01: GPS positioning 0x02: Beidou positioning 0x03: GLONASS positioning [requires module support]

4.54 Schedule_Temperature Sensor data pack (6 + 1 + N*2 byte)

Segment sequence	Sub sequence	content	Byte count	number type	precision	unit	description
1	1	Year	1	u8			
	2	Month	1	u8			
	3	Day	1	u8			
	4	Hour	1	u8			
	5	Minute	1	u8			
	6	Seconds	1	u8			
2	1	SensorNum	1	u8			Number of connected sensors
3	1	Sensor1	2	s16	0.1	°C	Sensor 1 temperature = -40+ (upload value divided by 10), for example, the upload value is 020B (690 decimal), the current temperature = 690/10-40 = 29 ° C
3	2	Sensor2	2	s16			Sensor 2 temperature = -40+ (uploaded value divided by 10)
3	3	Sensor3	2	s16			Sensor 3 temperature = -40+ (uploaded value divided by 10)
3	4	Sensor4	2	s16			Sensor 4 temperature = -40+ (uploaded value divided by 10)
3	5	Sensor5	2	s16			Sensor 5 temperature = -40+ (uploaded value divided by 10)
3	...	...	...	...			...

4.55 Schedule Collision XYZdata pack (6+6 *80byte) Time + Data

Segment sequence	Sub sequence	content	Byte count	number type	precision	unit	description
1	1	Year	1	u8			
	2	Month	1	u8			
	3	Day	1	u8			
	4	Hour	1	u8			
	5	Minute	1	u8			
	6	Seconds	1	u8			
N*6	6+N*6	X	2	u16			The highest BIT>0 means positive, and vice versa; for example, 0x8115 means positive 0x0115; equal to 277; acceleration=277mg
	6+N*6+2	Y	2	u16			ditto
	6+N*6+4	Z	2	u16			ditto
(N+1)*6	6+(N+1)*6	X	2	u16			ditto

	6+ (N+1)*6+2	Y	2	u16			ditto
	6+ (N+1)*6+4	Z	2	u16			ditto
.... 80 groups in all		X	2	u16			
		Y	2	u16			
		Z	2	u16			

4.56 Schedule Positive and negative sensor data pack (6 + 4byte)

Segment sequence	Sub sequence	content	Byte count	number type	precision	unit	description
1	1	Year	1	u8			
	2	Month	1	u8			
	3	Day	1	u8			
	4	Hour	1	u8			
	5	Minute	1	u8			
	6	Seconds	1	u8			
2	1	Direction of rotation	1	U8			2 stop 0 forward 1 reverse
	2	Number of rotation pulses	2	U16			Number of rotation pulses received within 2 minutes
	3	Number of installed magnetic steel	1	U8			Used to calculate the rotation speed default of 1, according to the actual installation settings

4.57 Schedule_setting Tracking mode※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	Turn off tracking mode: 0 off 1 open
1	,	1	ASCII	0x2C
2	Valid Time	Uncertain length	Ascll	Track effective time, unit is seconds
3	,	1	ASCII	0x2C
4	Interval Time	Uncertain length	Ascll	Within the effective time interval, the return time interval, unit seconds >= 2S

4.58 Schedule_setting Supply/cut off-oil※

Byte position	content	Byte count	type of data	description
0	Enable	1	ASCII	0 Supply-oil 1 cut off-oil

4.59 Schedule_Flameout delay judgment※

Byte position	content	Byte count	type of data	description
0	Time	2	u16	Eg:0x0012 =18S unitS

4.60 Schedule_image data pack

Byte position	content	Byte count	type of data	description
0	Camera ID	1	u8	Used to distinguish the current picture is the first few cameras to shoot
1	Total number of packages	2	u16	
3	Current number of packages	2	u16	
5	Picture data pack	nBYTE	nBYTE	

4.61 Schedule_setting Photo parameters

Byte position	content	Byte count	type of data	description
0	Start up, close	1	u8	0x01: Start 0x00: Close
1	ID	1	u8	Camera ID
2	Total number of sheets	2	u16	Unit:
4	time interval	2	u16	Unit: seconds Default >=10S but when the total number of sheets is 1, the time interval is allowed to 0 to indicate immediate shooting
5	Resolution	1	u8	0x01:160x240 0x02:320x240 0x03:640x480
6	Compression ratio	1	u8	20-250 0x14-0xfa

4.62 Schedule_GPS Positioning mode switching✘

Byte position	content	Byte count	type of data	description
0	GPS mode	1	U8	0x00: GPS plus Beidou positioning (default) 0x01: GPS positioning 0x02: Beidou positioning 0x03: GLONASS positioning [requires module support]

4.63 Schedule_Temporary position tracking✘

Byte position	content	Byte count	type of data	description
0	Start up, close	1	u8	0x01: Start 0x00: Close
1	Intervals	2	U16	Unit: seconds (if setting is 0. Forced to turn off temporary position tracking)
3	duration	4	U32	Unit: seconds (reports the positiondata pack at intervals, for a period of 0)

4.64 Schedule_Turn off the OBD function✘

Byte position	content	Byte count	type of data	description
0	Close/open	1	u8	0x00: Off 0x01: Turn on the OBD function

4.65 Schedule_query Whether to open the OBD function✘

Byte position	content	Byte count	type of data	description
0	Close/open	1	u8	0x00: Off 0x01: Turn on the OBD function

4.66 Schedule_Get AGPS update information (Nbyte)

Byte position	content	Byte count	type of data	description
0	Terminal version	14	ASCII	example "HLH100SV101061"
14	Terminal date	10	ASCII	example "2018-04-16"
24	Current terminal time	6	U8[6]	GMT time example: 0x12 0x04 0x10 0x01 0x01 0x3B Representation: 18/4/16 08:01:59
30	Current latitude (lat)	4	U32	0.000001 degree Bit31=0/1 North latitude/South latitude
34	Current longitude (lon)	4	U32	0.000001degree Bit31=0/1 East / West Longitude
38	Reserved	20	U8[20]	Reserved20byte. content 为 0x00

4.67 Schedule_Answer AGPS update information (Nbyte)

Byte position	content	Byte count	type of data	description
0	Current platform time	6	U8[6]	GMT time. Used for terminal timing Example: 0x12 0x04 0x10 0x01 0x01 0x3B Representation: 18/4/16 09:01:59
6	AGPS data valid flag	1	U8	0x01: The platform has AGPS data to be updated 0x00: Platform NoAGPS data can be updated
7	Total length ofAGPS data	2	U16	Total length of valid AGPS data When the AGPS data valid flag is 0, the AGPS data length is 0.
9	Reserved	10	U8[10]	Reserved10byte

4.68 Schedule_Get AGPS data (2byte)

Byte position	content	Byte count	type of data	description
0	AGPS Get Data X Pack	2	U16	Get the first few packs of data Range of values: 1 - AGPS data total number of packets

4.69 Schedule_Vehicle data additional information list(Nbyte)

Byte position	type of data	Description and requirements
Additional information ID	BYTE	1-255
Number of additional information	BYTE	1-255
extra information		Additional Information

Data pack split	Data pack meaning
E7	Mark head
0200	Function ID
0076	Message attribute
4D201608011129	Device ID
AB8D	Message serial number
100A080F2E31	Sys time year, month, day, minute, second
0090	Driving cycle label
00	ACC status
0000	Alarm ID
00	GPS positioning status
01B5F2F1	GPS latitude
06E6772D	GPS longitude
00000039	height
08	Number of satellites
0000	GPS speed
0CBD	direction
0096	Position precision
0000	Model ID
00000000000000000000	State mask
00000000000000000000	Status mask field
11	OBD protocol category
FDF9EF80	Data stream mask
0080	Battery voltage
01	Total mileage category
000C299C	total mileage
00013502	Total fuel consumption
0000	Engine speed
00	Vehicle speed
0000	Air flow
61	Air inlet temperature
35	Intake manifold pressure
00	Fault light status
00	Number of fault codes
8A	Coolant temperature
43	Vehicle ambient temperature
0000	Fuel pressure
64	Atmospheric pressure
00A0	Valve position sensor
0000	Accelerator pedal position

03BD	Engine running time
00000000	Fault mileage
0000	Remaining oil
00	Engine load
03A9	Long-term fuel correction (Group 1)
02FD	Ignition advance angle
000C299C	Total mileage of car instruments
0001D38C	Total vehicle running time
0006	First 250 millisecond acceleration average
0007	Second 250 millisecond acceleration average
0006	The third 250 millisecond acceleration average
0007	Fourth 250 millisecond acceleration average
0009	Maximum acceleration value in 1 second
B9	Check
E7	Mark tail