

Gateway Communication protocol(Ministerial standard)
- VJT.04.020 -

S/N	V/N	Revision content	Revised by	Date
1	V1.01.000	The first draft	XQM	2017-8-24
2	V1.01.001	Content proofreading,Format normalization	WDC	2018-9-6
3	V1.01.002	1.0x0200 add Vendor customization ID“0xFE” item in extensions,sub-extensions <u>0x01,0x02</u> extend GSM/CDMA base station information.	YD	2018-9-12
4	V1.01.003	Update old version 1.04 protocol content	WDC	2018-9-19
5	VJT.01.001	Reconditioning protocol: 1. Fault code data, driving data,dormant data, wake-up data, transfer by 0900. 2. Rapid acceleration, Rapid deceleration, sharp turning parameter were changed 4 levels:High,middle,low,off. 3. Add the version data packet, Terminal reports software version/VIN code,etc.Platform reply the system time,Convenient for terminal calibration. 4. 0200 data also reported by dynamic data packet. 5. Add setup Privilege number function. 6. Add the samples of data link escape/unescape.	XQM	2018-11-19
6	VJT.01.002	1. Add longitude and latitude in fault code data packet. 2. Add longitude and latitude in driving data. 3. Adjust the basic data of 0200 extensions,add CSQ and standby voltage.	XQM	2018-12-10
7	VJT.01.003	1.Add the longitude and latitude of flame-out in driving behavior data.	XQM	2018-12-12
8	VJT.01.004	1. Delete the inflection point of circuit setup 2. Add the inflection point ID,it is synchronous with standard ministerial protocol.	XQM	2018-12-18
9	VJT.01.005	1、Version info ID use 0205/8205	XQM	2018-12-20
10	VJT.01.006	1、0200 part of alarm data adopts Independent expansion ID 0xFA reporting 2、0200 part of expansion data,command ID has readjusted in order to compatible with the previous client's . 3、0900 F1 driving data packet was changed to dynamic data packet.	XQM	2019-01-04
11	VJT.01.007	1、Detail adjustment:setup mileage,three stage collision,over-speed alarm,water temperature alarm,commands ID,accelerometer .	XQM	2019-01-08
12	VJT.01.008	1、The part of wrongly written 2、0200 basic extended data item,increase collection of satellite,positioning accuracy,signal-noise ratio.	XQM	2019-01-09
12	VJT.01.009	1、Modify the redundant packet parameters of setting area. 2、In setting parameter 8103, add 0090 configure positioning mode field.	XQM	2019-01-15
13	VJT.01.010	1.Add 0x6006 text message response commands.	YGL	2019-01-21
14	VJT.04.011	1.Add hyperlink and version number to unify for start from VJT.04.011 2.Modify 0201 message body, add Serial number item 3.Modify 0200 message body, delete position reporting length item	LY	2019-02-15
15	VJT.04.012	1.0200 part of basic data of extended data to add 0x001B GPS antenna status 2.0200 part of basic data of extended data to add 0x001C Timing status	YD	2019-02-21

		3.0200 part of basic data of extended data to add 0x3008 H600 video status		
16	VJT.04.013	1. 0x6210 Fault mileage changed from 2 bytes to 4 bytes 2. 0x6110 Absolute throttle position is changed from 1 byte to 2 bytes 3. 0x6070 long-term fuel correction (cylinder columns 1 and 3) changed from 1 byte to 2 bytes 4. 0x60E0 The first cylinder ignition timing advance angle is changed from 1 byte to 2 bytes.	LDY	2019-02-26
17	VJT.04.014	1.8103 Settings 8104 Query adds the following items: 0x2012: Set mileage, fuel consumption type 0x2013: Set the mileage factor 0x2014: Setting the fuel consumption factor 0x2015: Setting the oil density 0x2016: Setting the idle fuel consumption coefficient 2.8205 The platform school time was changed to Beijing East Eighth District time. 3. New extensions 0x3009 H600 input semaphore	YD	2019-03-28
18	VJT.04.015	1. Increase truck extension data, compatible with 32960 national standard part of the data stream	XQM	2019-04-08
19	VJT.04.016	Modify the 0704 packet data, there is no length in front of each packet. The description of the command word in control command 8105 is incorrect.	XQM	2019-04-22
20	VJT.04.017	1.In the 0200 extended data, the common base data item adds the sub ID 0x001D: the positioning flag 2. Add 8103 child id 0x2017 to turn OBD command on and off	XQM	2019-04-23
21	VJT.04.018	1.In the 0200 extended data item, increase the truck data item sub-ID 0xFFFF1 (mileage data) 0xFFFF2 (fuel consumption data) 2.Configure the query command 8103/8104, sub-function ID 0x2018 to increase the position data return mode, support two types, one is first-in, first-out, the second is real-time data priority transmission	XQM	2019-05-23
22	VJT.04.019	1.0200 Data Status Data Item Increases Maintenance Mode Status 2.0200 data, in the extended data item, the basic data item adds ID: 0x001E, representing the cumulative mileage. 3.0900 data, F1 stroke data, add a 0x001D to indicate idle fuel consumption.	XQM	2019-07-05
23	VJT.04.020	1.0200, the 14th bit in the status flag indicates the WIFI status, 1 starts, 0 closes. 2.8103 WIFI parameter setting. 3.8103 sleep awakening duration settings.	XQM	2019-08-12

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1. Profile

1.1 Purpose

This document extends the OBD related functions on the basis of JT/T 808 standard protocol.

JT/T 808 standard protocol: stipulated the communication protocol and data format between transport vehicle GPS terminal(Terminal for short),including protocol basis、communication connection、message handle、Protocol classification & explanation and data format.

OBD function: Extended data function as standard protocol.

1.2 Terms and definitions

a) abnormal data communication link

Wireless communication link cut off,or temporary suspension(e.g.during the call)

b) register

The terminal sends messages to the platform and tells it to be installed on a vehicle

c) Unregister

The terminal sends messages to the platform to inform the vehicle from being dismantled.

d) authentication

When the terminal connects to the platform, it sends messages to the platform to enable the platform to verify its identity.

e) location reporting strategy

Timing, distance reporting, or combination of the two.

f) location reporting program

Rules for determining intervals of periodic reports according to relevant conditions.

g) additional points report while turning

The terminal sends the location information to the vehicle when judging the turning of the vehicle.Sampling frequency not less than 1Hz,The change rate of vehicle azimuth is not less than 15°/s,Month.At least continue 3s or more.

h) answering strategy

Terminal automatically or manually answering incoming calls.

i) SMS text alarm

Text messages are sent in SMS mode when the terminal alarm.

j) event item

Event items are set up from platform to terminal, Composed of event code and event name, The driver operates the terminal when he meets the corresponding event, Trigger event report sent to platform.

1.3 Abbreviation

APN—access point name

GZIP—GNU zip

LCD—liquid crystal display

RSA—An asymmetric cryptographic algorithm(Designed by Ron Rivest、Adi Shamirh、Len Adleman, The name comes from the three party)

SMS—short message protocol

TCP—transmission control protocol

TTS—text to speech

UDP—user Datagram protocol

VSS—vehicle speed sensor

1.4 Protocol basis

1.4.1 Communication mode

The protocol adopted communication mode comply with the relevant provisions in JT/T 794. communication protocol adopted TCP and UDP,platform as server,terminal as client.when abnormal data communication link,the terminal adopted SMS communication.

1.4.2 Data type

Data types used in protocol messages:

Data type	Instruction
BYTE	8 - bit unsigned integer
WORD	16 - bit Unsigned double byte integer
DWORD	32 - bit Unsigned four byte integer
BYTE[n]	N bit
BCD[n]	8421 code, n bit
STRING	GBK code, adopt 0 terminal, if no data, put 0 as terminal

1.4.3 Transmission rule

Protocol adopts big-ending network byte order to transfer words and double characters.

Agree as follows:

—BYTE transmission agree:Transfer in byte stream mode;

—WORD transmission agree:First pass 8 bits, then low 8 bits;

—Double WORD transmission agree:First pass 24 bits, pass 16 bits,pass 8 bits,then low 8 bits.

1.5 Message composition

1.5.1 Message structure

Each message consists of flag bit, message header, message body and check code,the picture as follow:

Flag bit	Message header	message body	Check code	Flag bit
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Pic.1 message structure

1.5.2 Flat bit

Adopt 0x7e, if check code、 message header、 and message body to appear 0x7e, to handle the escape as follows:

0x7e<—>0x7d keep up with 0x02;

0x7d<—>0x7d keep up with 0x01。

Handle the escape as follows:

1.5.3 Message header

Message header content:

Start byte	Field	Data type	Description and requirements
0	Message ID	WORD	
2	Message body attribute	WORD	Message body attribute format structure diagram see Pic.2
4	Terminal mobile phone number	BCD[6]	According to the mobile phone number conversion of the terminal itself after installation. Mobile phone number is less than 12 digits, add digits 0 ahead, HK, Macao, Taiwan will add digits according to area number.
10	Message serial number	WORD	Add from 0 in order.
12	Message packets Encapsulating item		If Message body attribute related marks position confirm Message Subcontract processing, this item has content, if no.

Message body: including as follow: , Message body attribute+Terminal mobile phone number+Message serial number;

Message body attribute format structure diagram, see pic.2:

1	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
Reserv ed	Subc ontra ct	Data encrypt method	Message body length												

Pic.2 Message body attribute format structure diagram

Data encrypt method:

—— bit10-bit12 data encrypt marks position;

——when 3th position is 0, means message body no encrypt;

——When 10th position is 1, means message body through RSA Algorithm encrypt;

——other Reserved。

Subcontract:

When Message body attribute 13th position is 1 means Message body is long Message, Subcontract sending, specific Subcontract information by Message packets Encapsulating item decided; if 13th position is 0, Message header no Message packets Encapsulating item Field。

Message packets Encapsulating item content

Start byte	Field	Data type	Description and requirements
0	Message packets	WORD	Total packets of Message Subcontract
2	Packets SN	WORD	Start from 1

1.5.4 Check code

Check code start from Message header, or same as behind one, until Check code ahead one, Occupy one byte

1.6 Communication connection

1.6.1 Establishment of connection

The data connection of terminal and platform adopts TCP or UDP, the terminal after reset, should establish connection with platform. After connection to send terminal authentication Message to platform.

1.6.2 Maintenance of connections

After establish connection and terminal authentication, the terminal should send terminal Heartbeat Message to platform, then send platform universal response Message to terminal, The sending period is specified by terminal parameters.

1.6.3 Disconnection of connections

Platforms and terminals can actively disconnect from the TCP protocol. Both sides should take the initiative to determine whether the TCP connection is disconnected.

Method for judging TCP connection disconnection by platform:

- According to the TCP protocol, the terminal is actively disconnected;
- The same identity terminal establishes a new connection, Indicates that the original connection has been disconnected.
- The information sent by the terminal is not received within a certain period of time. such as terminal heartbeat.

Terminal judging method of TCP connection disconnection:

- According to the TCP protocol, the platform is actively disconnected;
- data Communication link disconnection;
- data Communication link normal, No response has been received after re-transmission times.

1.7 Message handle

1.7.1 TCP and UDP Message handle

1.7.1.1 Platform main Message

All platform main message requires terminal answer, Answer divided into universal answer and special answer, Determined by specific functional agreements. Sender waiting for Answer timeout, message should be resend. The Answer timeout and re-transmission times are specified by the platform parameters, Answer timeout time and number of re-transmissions after each re-transmit are specified by platform parameters, A formula for calculating Answer timeout after each re-transmission, see(1):

$$T_{N+1} = T_N * (N+1) \quad \dots\dots\dots (1) :$$

T_{N+1} ——Answer timeout after each re-transmission

T_N ——Previous Answer timeout time

N ——Re-transmission times

1.7.2 Terminal main Message

1.7.2.1 data Communication link normal

When data Communication link normal, All terminal Message requires platform Answer, Answer divided into universal answer and special answer, Determined by specific functional agreements, Terminal waiting for Answer timeout, message should be resend. The Answer timeout and re-transmission times are specified by the terminal parameters, A formula for calculating Answer timeout after each re-transmission, see(1): for key alarm Message from terminal, If the number of re-transmission is reached, Answer has not been received. It should be keep. Before sending other Message, you need to send the key alarm Message of keep first

1.7.2.2 data Communication link abnormal

When data Communication link abnormal, The terminal should respond to the Position information report Message that needs to be sent to keep. After data Communication link restore normal, Send Message of keep immediately.

1.8 SMS Message handle

The terminal communication mode is switched to the SMS Message mode of GSM network, Adopt PDU 8 bit encoding mode, for Message with length exceeding 140 bytes, According to GSM network SMS service specification GSM 3.40. Subcontract processing.

Answer, re-transmission and keep mechanism of SMS Message same as 6.1, But Answer timeout time and the number of re-transmission should be handled according to the relevant setting values of parameter.

1.9 Protocol classification

1.9.1 Summary

The following protocols are described by functional classification. No special indication, default use of TCP communication mode. The communication protocol of terminal and external device see Appendix A, The Message Name and Message ID in the Protocol are listed in Appendix B.

1.10 Terminal management protocol

1.10.1 Terminal registration/log out

The terminal is not registered, Registration should be done first, After successful registration, the terminal will get the authentication code and keep it. The authentication code is enabled when the terminal is logged in. Vehicle needs to dismantle or before replacing terminal, The terminal should perform the logout operation, Cancel the corresponding relationship between terminal and vehicle.

If the terminal is sent terminal registration and terminal logout Message through SMS mode, The platform should be sent terminal registration through SMS mode. Answer reply to terminal logout, send Platform universal response through SMS mode for terminal logout answer.

1.10.2 Terminal authentication

After the terminal was registered and established connection with platform every time, Authentication should be carried out immediately. The terminal shall not send other Message before authentication is successful.

The terminal authentication by sending terminal authentication Message. Platform answer universal response Message.

1.10.3 Setting/Query terminal parameters

The platform by sending set terminal parameters Message to set terminal parameters, the terminal answer universal response Message. The platform by sending Query terminal parameters Message Query terminal parameters, the terminal answer Query terminal parameters Answer Message. Terminals under the same network system should support some unique parameters of their respective networks.

1.10.4 Terminal control

The terminal control was controlled by sending terminal control Message, and the terminal answer terminal universal response Message.

1.11 position、alarm protocol

1.11.1 Position information report

The terminal sends Position information report Message periodically according to the parameter setting.

According to parameter control, the terminal can send Position information report when judging the turning of vehicle.

1.11.2 Position set information query

The platform was sent Position set information query Message, Query the specified vehicle terminal at that time position set information, the terminal answer Position set information query Answer Message.

1.11.3 Temporary position Tracker control

The platform was sent by temporary position Tracker control Message start/stop position,Position tracking requires periodic reporting before termination of the terminal, Reporting according to Message specified time interval,answer terminal universal response Message.

1.11.4 Terminal alarm

Terminal determines when alarm condition is satisfied Position information report Message,Set the corresponding alarm Sign in position report Message,Answer Platform universal response Message.

Each alarm type see the description of Position information report Message body. Alarm flag is maintained until the alarm condition is released.After the alarm condition is released,send Position information report Message immediately and clear related alarm Sign.

1.12 information protocol

1.12.1 Text message sending

Text message sending Message from platform,Inform the driver according to the specified way.Terminal answer universal response Message.

1.12.2 Event settings and reports

Sending event settings message through platform,Send event list to terminal storage,After the driver encountered the corresponding incident — You can enter the list of events and choose, After selecting the terminal, issue event report information to the platform.

event setting message,need Terminal answer universal response Message.

Event report message, need Platform answer universal response Message.

1.12.3 Question

Question release message from platform,Send the Question with candidate answers to the terminal and display immediately, After the driver chooses, the terminal sends out the question answer message to platform.

Question release message, need terminal answer universal response message.

1.12.4 information on demand

Sending information on demand menu setting Message from platform, send information on demand list to terminal storage,The driver through menu choose on demand/cancel information service,after choose the terminal send message on demand/cancel message to platform.

Information service was on demand,will receive the information service Message,such as news,weather forecast ,etc.

Information on demand menu setting message, need terminal answer universal response message.

Information on demand/cancel message, need Platform answer universal response message.

Information service Message, need terminal answer universal response message.

1.13 Telephone protocol

1.13.1 Call back

The platform through sent Call back Message,The terminal is required to call back at the specified telephone number.And specifies whether or not to monitoring(The terminal does not turn on the speaker.)

Call back Message,need terminal answer universal response message.

1.13.2 Set up the phone book

The platform through send and set up the phone book Message, Set up the phone book, the Message need terminal answer universal response message.

1.14 vehicle control protocol

Sending vehicle control Message from platform, The terminal is required to perform control on vehicle according to the specified operation.After receiving,Terminal will answer universal response Message.then control the vehicle.answer vehicle control Message according to result.

1.15 vehicle management protocol

The platform sets circular area by sending、 Set rectangular region、 Set the polygon area、 Route setting,etc Message, Regional and line setting for terminals.Terminal according to area and line attribute determine whether the alarm condition is satisfied, alarm including over-speed alarm、 Import and export area/Route alarm and driving time less/long alarm, should including related position extra information in position report message.

Area or Route ID value range:1-0XFFFFFFF,if setting ID and same type area or route ID repeat,the same type will be updated.

The platform also through delete round area、 delete rectangular area、 delete polygon region、 delete route etc,message, delete the terminal keep area and route.

Setting/Delete area and route message,need terminal answer universal response message.

1.16 information collection protocol

1.16.1 Collect driver ID information data

The terminal collect driver information、 data upload platform for recognition,the platform answer it's successor not.

1.16.2 Collect E-airway bill data

The terminal collects E-airway bill data and uploads to platform.

1.16.3 Collect driving record data

The platform by send driving record data to collect command message,request terminal upload data, need terminal answer driving record data upload message.

1.16.4 downlink driving record parameter

The platform by sending driving record parameter to downlink command message,request terminal upload data,need terminal answer universal response message.

1.17 multimedia protocol

1.17.1 multimedia event information upload

When the terminal takes the initiative to shoot or record for specific events,after the event active to upload multimedia event message, need platform answer universal answer message.

1.17.2 multimedia data upload

The terminal send multimedia data upload message, upload multimedia data,before each full multimedia data to add recording position information report message body, called position multimedia data.The platform determines the receiving overtime time according to the total number of packages.After receiving all packets o or reaching timeout time, the platform send multimedia data upload answer message to terminal.This information confirms receipt of all data packages or requests the terminal to re-transmit the specified data packages.

1.17.3 Camera shot immediately

The platform by sending the camera Shooting command Message, send Shooting command to terminal, the message answers terminal universal response message.If request Real-time upload,after shooting upload camera image/video, if not store image/video.

1.17.4 Recording start

The platform send recording start command message, send recording command to terminal, Terminal answer universal response message.If request Real-time upload,after recording to upload Audio data, if not store audio data.

1.17.5 Retrieval terminal stores multimedia data and extracts

The platform by sending storage multimedia data Message, to get multimedia data, need to answer multimedia data retrieval answer message。

According to retrieval result, the platform send storage multimedia data upload message, request terminal upload multimedia data, need terminal to answer universal response message.

1. 18 Universal data transmission

No definition in protocol,but need transfer message in actually,can use data Upstream Transparent message and data downstream transparent message for data exchange.

The terminal can be compressed by GZIP and compressed by Algorithm for a longer Message.Upload information by data compression.

1.19 Encrypt protocol

Encrypted communication between platform and terminal,RSA public key encry system can be adopted.The platform sends RSA public key information to the terminal to inform its RSA public key.Terminal answer RSA public key Message and vice versa.

2. Data format

2.1 [0001]Terminal universal response

[Message ID]:: 0x0001.

[function Description]: Terminal universal response Message body data

flag	Function ID	Message header	Message body	check	flag
7E	00 01	Message Appendage	Terminal universal response attached list	XOR	7E

2.2 [8001]Platform universal response

[Message ID]: 0X8001.

[function Description]: Platform universal response Message body data

flag	Function ID	Message header	Message body	check	flag
7E	80 01	Message Appendage	Platform universal response attached list	XOR	7E

2.3 [0002]Terminal Heartbeat

[Message ID]: 0X0002.

[function Description]: The Terminal Heartbeat data Message body is empty.

flag	Function ID	Message header	Message body	check	flag
7E	00 02	Message Appendage		XOR	7E

2.4 [0100]Terminal registration

[Message ID]: 0X0100.

[function Description]: Terminal registration Message body data

flag	Function ID	Message header	Message body	check	flag
7E	01 00	Message Appendage	Terminal registration Message body attached list	XOR	7E

2.5 [8100]Terminal registration response

[Message ID]: 0x8100.

[function Description]: Terminal registration response Message body data.

flag	Function ID	Message header	Message body	check	flag
7E	81 00	Message Appendage	Terminal registration response Message body attached list	XOR	7E

2.6 [0003]Terminal log off

[Message ID]: 0X0003

[function Description]: Terminal log of Message body is empty.

flag	Function ID	Message header	Message body	check	flag
7E	00 03	Message Appendage		XOR	7E

2.7 [0102]Terminal authentication

[Message ID]: 0x0102.

[function Description]: Terminal authentication Message body data.

flag	Function ID	Message header	Message body	check	flag
7E	01 02	Message Appendage	Terminal authentication Message body attached list	XOR	7E

2.8 [8103]Setting terminal parameter

[Message ID]: 0x8103

[function Description]: Setting terminal parameter Message body data.

flag	function ID	Message header	Message body	check	flag
7E	81 03	Message Appendage	Terminal parameter Message body attached list	XOR	7E

2.9 [8104]Query terminal parameter

[Message ID]: 0x8104

[function Description]: Query terminal parameters Message body is empty.

flag	function ID	Message header	Message body	check	flag
7E	81 04	Message Appendage	--	XOR	7E

2.10 [0104]Query terminal parameters response

[Message ID]: 0x0104.

[function Description]: Query terminal parameters response Message body data.

flag	function ID	Message header	Message body	check	flag
7E	01 04	Message Appendage	Query terminal parameters response Message body attached list	XOR	7E

2.11 [8105]Terminal control

[Message ID]: 0x 8105.

[function Description]: Terminal control Message body data format.

flag	function ID	Message header	Message body	check	flag
7E	81 05	Message Appendage	Terminal control Message body attached list	XOR	7E

2.12 [0200]Position info reporting

[Message ID]: 0x0200.

[function Description]: Position info reporting Message body consists of a list of position base information and position configuration extra information items, as shown in the following table in the Message structure diagram:

flag	function ID	Message header	Message body	check	flag
7E	02 00	Message Appendage	Position setting data information body attached list	XOR	7E

2.13 [0704]Position info batch reporting

[Message ID]: 0x0704.

[function Description]: The Position info batch reporting, the Message structure chart is shown in the following table:

flag	function ID	Message header	Message body	check	flag
7E	07 04	Message Appendage	Position info batch reporting attached list	XOR	7E

2.14 [8201]Position info query

[Message ID]: 0x8201.

[function Description]: Position info query Message body is empty.

flag	function ID	Message header	Message body	check	flag
7E	82 01	Message Appendage	---	XOR	7E

2.15 [0201]Position info query response

[Message ID]: 0x0201.

[function Description]: Position info query response Message body data format.

flag	function ID	Message header	Message body	check	flag
7E	02 01	Message Appendage	Position info query response data attached list	XOR	7E

2.16 [8202]Temporary position tracking control

[Message ID]: 0x8202.

[function Description]: Temporary position tracking control Message body data.

flag	function ID	Message header	Message body	check	flag
7E	82 02	Message Appendage	Temporary position Tracking control Message body attached list	XOR	7E

2.17 [0205]Version info packet

[Message ID]: 0x0205.

[function Description]: Including software version, software release time, module model, total mileage, total fuel consumption, VIN code and other key data

flag	function ID	Message header	Message body	check	flag
7E	02 05	Message Appendage	Version info packet	XOR	7E

2.18 [8205]Version info packet response

[Message ID]: 0x8205.

[function Description]: Response system time,

flag	function ID	Message header	Message body	check	flag
7E	82 05	Message Appendage	Version info packet response	XOR	7E

2.19 [8300]Text message release

[Message ID]: 0x8300.

[function Description]: Text message release Message body data.

flag	function ID	Message header	Message body	check	flag
7E	83 00	Message Appendage	Text message release Message body attached list	XOR	7E

2.20 [6006]Text message response

[Message ID]: 0x6006.

[function Description]: Send text information data on the terminal device.

flag	function ID	Message header	Message body	check	flag
7E	60 06	Message Appendage	Send Message body attached list to Text information	XOR	7E

2.21 [8500]Vehicle control

[Message ID]: 0x8500

[function Description]: Vehicle control Message body data.

flag	function ID	Message header	Message body	check	flag
7E	85 00	Message Appendage	Vehicle control Message body attached list	XOR	7E

2.22 [0500]Vehicle control response

[Message ID]: 0x0500.

[function Description]: Vehicle control response Message body data.

flag	function ID	Message header	Message body	check	flag
7E	05 00	Message Appendage	Vehicle control response Message body attached list	XOR	7E

2.23 [8600]Setting round area

[Message ID]: 0x8600.

[function Description]: Setting round area Message body data.

Note: Note that the Message protocol supports the periodic time range. To limit the daily 8:30-18:00, the start/End Time is set to: 00-00-00-08-30-00/00-00-00 -18-00=00,other and so on.

flag	function ID	Message header	Message body	check	flag
7E	86 00	Message Appendage	Setting round area Message body attached list	XOR	7E

2.24 [8601]Delete round area

[Message ID]: 0x8601.

[function Description]: Delete round area Message body data.

flag	function ID	Message header	Message body	check	flag
7E	86 01	Message Appendage	Delete round area Message body attached list	XOR	7E

2.25 [8602]Setting rectangle area

[Message ID]: 0x8602.

[function Description]: Setting rectangle area Message body data.

flag	function ID	Message header	Message body	check	flag
7E	86 02	Message Appendage	Setting rectangle area Message body attached list	XOR	7E

2.26 [8603]Delete rectangle area

[Message ID]: 0x8603.

[function Description]: Delete rectangle area Message body data.

flag	function ID	Message header	Message body	check	flag
7E	86 03	Message Appendage	Delete rectangle area Message body attached list	XOR	7E

2.27 [8604]Setting polygon area

[Message ID]: 0x8604.

[function Description]: Setting polygon area Message body data.

flag	function ID	Message header	Message body	check	flag
7E	86 04	Message Appendage	Setting polygon area Message body attached list	XOR	7E

2.28 [8605]Delete polygon area

[Message ID]: 0x8605.

[function Description]: Delete polygon area Message body data.

flag	function ID	Message header	Message body	check	flag
7E	86 05	Message Appendage	Delete polygon area Message body attached list	XOR	7E

2.29 [8606]Route setting

[Message ID]: 0x8606.

[function Description]: Route setting Message body data

flag	function ID	Message header	Message body	check	flag
7E	86 06	Message Appendage	Route setting Message body attached list	XOR	7E

2.30 [8607]Delete Route

[Message ID]: 0x8607.

[function Description]: Delete Route Message body data.

flag	function ID	Message header	Message body	check	flag
7E	86 07	Message Appendage	Delete Route Message body attached list	XOR	7E

2.31 ~~[0800]Multimedia event info upload~~

[Message ID]: 0x0800

[function Description]: ~~Multimedia event info upload data.~~ If the shooting is successful, first upload 0800, then upload 0801

flag	function ID	Message header	Message body	check	flag
7E	08 00	Message Appendage	Multimedia event info upload data attached list	XOR	7E

2.32 ~~[0801]Multimedia data upload~~

[Message ID]: 0x0801.

[function Description]: Multimedia data upload Message body data. Due to the large amount of data, upload as a Message attribute sub-item item.

flag	function ID	Message header	Message body	check	flag
7E	08 01	Message Appendage	Multimedia data upload Message body attached list	XOR	7E

2.33 ~~[8800]Multimedia data upload response~~

[Message ID]: 0x8800.

[function Description]: Multimedia data upload response Message body data.

flag	function ID	Message header	Message body	check	flag
7E	88 00	Message Appendage	Multimedia data upload response Message body attached list	XOR	7E

2.34 ~~[8801]~~Camera shot immediately commands

[Message ID]: 0x8801.

[function Description]: Camera shot immediately commands Message body data.

flag	function ID	Message header	Message body	check	flag
7E	88 01	Message Appendage	Camera shot immediately commands Message body attached list	XOR	7E

2.35 ~~[0805]~~Camera shot immediately commands response

[Message ID]: 0x0805.

[function Description]: This command is used to answer the camera delivered by the monitoring center and immediately shoot the command 0x8801. Then if the shooting is successful, 0x0800 and 0x0801 will be uploaded..

flag	function ID	Message header	Message body	check	flag
7E	0805	Message Appendage	Camera shot immediately commands attached list	XOR	7E

2.36 [8900]Data downlink transmission

[Message ID]: 0x8900.

[function Description]: Data downlink transmission Message body data

flag	function ID	Message header	Message body	check	flag
7E	89 00	Message Appendage	No definition	XOR	7E

2.37 [0900]Data uplink transmission

Vehicle driving data packet [0xF1](#):

Vehicle fault code packet [0xF2](#):

Vehicle sleep entry data packet [0xF3](#):

Vehicle sleep wake-up data packet [0xF4](#):

Vehicle GPS simplify data packet([Trucks](#))[0xF5](#):

[Message ID]: 0x0900.

2.38 [function Description]: Data uplink transmission Message body data.

flag	function ID	Message header	Message body	check	flag
7E	09 00	Message Appendage	dataUpstreamTransparent Message body attached list	XOR	7E

3. Appendix I:

3.1 Attached list_Terminal universal response

Start byte	Field	data type	Description and requirements
0	Response serial number	WORD	The serial number of the corresponding platform Message
2	Response ID	WORD	The ID of the corresponding platform Message
4	result	BYTE	0: Success / Confirmation; 1: Failure; 2: Message Error; 3: Not Support Fuel consumption is not supported

3.2 Attached list_Platform universal response

Start byte	Field	data type	Description and requirements
0	Response serial number	WORD	The serial number of the corresponding terminal Message
2	Response ID	WORD	The ID of the corresponding terminal message
4	result	BYTE	0: Success / Confirmation; 1: Failure; 2: Message Error; 3: Not Support Fuel consumption is not supported

3.3 Attached list_Terminal registration message body

Start byte	Field	data type	Description and requirements
0	Provincial domain ID	WORD	Indicate the province where the terminal installed vehicle is located, 0 Reserved, and the default value is taken by the platform. The province ID adopts the first two positions in the six position of the administrative division code specified in GB/T 2260.
2	City county ID	WORD	Mark the city and county where terminal installs vehicle, 0 Reserved, the default value is taken by the platform. City county ID uses the administrative division code of GB/T 2260, the last four positions.
4	Manufacturer ID	BYTE[5]	Five bytes, terminal Manufacturer encoding.
9	Terminal model	BYTE[8]	Eight bytes, this terminal model is defined by the manufacturer itself. The number of positions is not eight positions. Complete the blanks. New B/D 20 bytes.

17	Terminal ID	BYTE[7]	Seven bytes, consisting of uppercase letters and numbers, this terminal ID is defined by Manufacturer itself.
21	License plate color	BYTE	License plate color, according to 5.4.12 of JT/T 415-2006
25	License plate	STRING	Motor vehicle number plate issued by the public security traffic management department

3.4 Attached list_Terminal registration response message body

Start byte	Field	data type	Description and requirements
0	Response serial number	WORD	The pipelining number of the corresponding Terminal registration Message
2	result	BYTE	0: success; 1: vehicle has been registered; 2: no vehicle in the data library; 3: terminal has been registered; 4: no terminal in the data library
3	authentication code	STRING	Only after the success, the Field

3.5 Attached list_Terminal authentication message body

Start byte	Field	data type	Description and requirements
0	Authentication code	STRING	After the terminal is reconnected, the authentication code is reported.

3.6 Attached list_Terminal parameter message body

Start byte	Field	data type	Description and requirements
0	Total number of parameters	BYTE	
1	List of parameter items		Parameter item format attached list

3.7 Attached list_Parameter item format

Field	data type	Description and requirements
Parameter ID	DWORD	Parameter ID definition and description entry, see for details Terminal parameter setting parameter definition and description Attached list
Parameter length	BYTE	
Parameter value		DWORD or STRING, if it is a multi-value

		parameter, the message uses multiple parameter items of the same ID, such as the dispatch center phone number
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3.8 Attached list_Each define and instruction of terminal parameter setting

Parameter ID	data type	Description and requirements
0x0001	DWORD	Terminal Heartbeat send interval, Unit is seconds (s)
0x0002	DWORD	TCP message response timeout, Unit is seconds (s)(s)
0x0003	DWORD	TCP message retransmission times
0x0004	DWORD	UDP message response timeout in seconds (s)(s)
0x0005	DWORD	UDP message retransmission times
0x0006	DWORD	SMS message response timeout in seconds (s)
0x0007	DWORD	SMS message retransmission times
0x0008-0x000F		Reserved
0x0010	STRING	The main service device APN, the wireless communication dial-up access point. If the network standard is CDMA, then the location is the PPP dialing number.
0x0011	STRING	Master service wireless communication dial-up username
0x0012	STRING	Master service wireless communication dial password
0x0013	STRING	Primary server address, IPor domain name
0x0014	STRING	Backup service APN, wireless communication dial-up access point
0x0015	STRING	Backup service wireless communication dial-up username
0x0016	STRING	Backup service wireless communication dial password
0x0017	STRING	Backup server address, IPor domain name
0x0018	DWORD	Server TCP port
0x0019	DWORD	Server UDP port
0x001A-0x001F		Reserved
0x0020	DWORD	Position set report strategy, 0: timed report; 1: fixed distance report; 2: timing and fixed distance report
0x0021	DWORD	Position sets the reporting scheme, 0: according to ACC state; 1: According to the login state and ACC state, first determine the login state, if you log in according to ACC state
0x0022	DWORD	The driver is not logged in to the reporting interval. Unit is seconds (s), >0
0x0023-0x0026		Reserved
0x0027	DWORD	Report interval during sleep, Unit is seconds (s), >0
0x0028	DWORD	Report interval in emergency alarm, Unit is seconds (s), >0
0x0029	DWORD	Default time reporting interval, Unit is seconds (s), >0
0x002A-0x002F		Reserved

B		
0x002C	DWORD	Default distance reporting interval, Unit is meters (m), >0
0x002D	DWORD	The driver is not logged in to report the distance, Unit is meters (m), >0
0x002E	DWORD	Report distance interval during sleep, Unit is meters (m), >0
0x002F	DWORD	Report the distance interval in case of emergency alarm, Unit is meter (m), >0
0x0030	DWORD	Inflection point fill angle, <180°
0x0031-0x003F		Reserved
0x0040	STRING	Monitoring platform phone number
0x0041	STRING	Complex position phone number, you can use this phone number to dial the terminal phone to make the terminal position
0x0042	STRING	Restore the factory default phone number, you can use this phone number to call the terminal phone to restore the terminal to factory settings.
0x0043	STRING	Monitoring platform SMS phone number
0x0044	STRING	Receive terminal SMS text alarm number
0x0045	DWORD	Terminal telephone answering strategy, 0: automatic answering; 1: automatic answer when ACC ON, manual answer when OFF
0x0046	DWORD	Unit is seconds (s) for the longest talk time, 0 is not allowed to talk, 0xFFFFFFFF is not limited
0x0047	DWORD	The longest talk time of the month, Unit is seconds (s), 0 is not allowed to talk, 0xFFFFFFFF is not limited
0x0048	STRING	Monitor phone number
0x0049	STRING	Regulatory platform privileged SMS number
0x004A-0x004F		Reserved
0x0050	DWORD	Alarm mask word. Corresponds to alarm Sign in Position info reporting Message. If the corresponding position is 1, the corresponding alarm is blocked.
0x0051	DWORD	Alarm sends the text SMS switch, corresponding to the alarm Sign in the Position info reporting Message, the corresponding position is 1 and the text SMS is sent when the corresponding alarm
0x0052	DWORD	The alarm shooting switch corresponds to the alarm Sign in the Position info reporting Message. The corresponding position is 1 and the camera is shot at the corresponding alarm.
0x0053	DWORD	The alarm captures the Store Sign, which corresponds to the alarm Sign in the Position info reporting Message. The corresponding position is 1 to store the photo of the corresponding alarm card, otherwise the real-time long pass
0x0054	DWORD	The key Sign corresponds to the alarm Sign in the Position info reporting Message. If the corresponding position is 1, the corresponding alarm is the critical alarm.
0x0055	DWORD	Maximum speed, Unit is kilometers per hour (km/h)

0x0056	DWORD	Speeding duration, Unit is seconds (s)
0x0057	DWORD	Continuous driving time threshold, Unit is seconds (s)
0x0058	DWORD	The cumulative driving time threshold for the day, Unit is seconds (s)
0x0059	DWORD	Minimum rest time, Unit for seconds (s)
0x005A	DWORD	Maximum parking time, Unit is seconds (s)
0x005B-0x006F		Reserved
0x0070	DWORD	Image/video quality, 1-10, 1 best
0x0071	DWORD	brightness , 0-255
0x0072	DWORD	Contrast , 0-127
0x0073	DWORD	saturation , 0-127
0x0074	DWORD	Chroma , 0-255
0x0075-0x007F	DWORD	
0x0080	DWORD	Vehicle odometer reading, 1/10km
0x0081	WORD	The province ID where the vehicle is located
0x0082	WORD	City ID where the vehicle is located
0x0083	STRING	Motor vehicle number plate issued by the public security traffic management department
0x0084	BYTE	License plate color, according to 5.4.12 of JT/T415-2006
0x0090	BYTE	Position mode; 0x01: GPS, 0x02: BD, 0x03 dual mode
The following ID is for the manufacturer		
0x2001	BYTE	Clear fault code 0x01: Clear 0x00: Do not empty
0x2002	BYTE	Empty vehicle data 0x01: empty 0x00: not empty
0x2003	BYTE	Empty driving route data 0x01: empty 0x00: not empty
0x2004	DWORD	Total fuel consumption ml
0x2006	DWORD	Water temperature alarm parameter, Unit℃
0x2007	BYTE	Accelerated parameter attached list
0x2008	BYTE	Rapid deceleration parameter attached list
0x2009	BYTE	Sharp turn parameter attached list
0x200A	WORD	Vehicle type, See the manufacturer's model table for details.
0x200B	DWORD	Low voltage alarm parameter, Unit0.1V
0x200C	DWORD	Idle time is too long alarm, Unit S
0x200D	DWORD	Set position time is too long alarm, Unit S
0x200E	STRING	Trailer alarm parameter attached list
0x200F	BYTE	Collision alarm parameter attached list
0x2010	STRING	Privilege number attached list

0x2011	DWORD	Ignition threshold voltage, Unit0.1V
0x2012	WORD	<p>Mileage type (high byte), fuel consumption type (low byte)</p> <p>Mileage type:</p> <p>0x00: Cancel forcing settings</p> <p>0x01: GPS</p> <p>0x02: J19391</p> <p>0x03: J19392</p> <p>0x04: J19393</p> <p>0x05: J19394</p> <p>0x06: J19395</p> <p>0x07: OBD meter</p> <p>0x08: OBD/Private Agreement</p> <p>0x09: J1939A</p> <p>0x0A: J1939B</p> <p>0x0B: J1939C</p> <p>0x0C: J1939D</p> <p>...</p> <p>0xff: does not change the mandatory type</p> <p>Fuel consumption type:</p> <p>0x00: Cancel forcing settings</p> <p>0x01: J19391</p> <p>0x02: J19392</p> <p>0x03: J19393</p> <p>0x04: J19394</p> <p>0x05: J19395</p> <p>0x06: OBD1</p> <p>0x07: OBD2</p> <p>...</p> <p>0xff: does not change the mandatory type</p>
0x2013	WORD	Mileage factor: set value / 1000. For example: 1020 -> 1.02
0x2014	WORD	Fuel consumption factor: set value / 1000. For example: 1020 -> 1.02
0x2015	WORD	<p>Oil density:</p> <p>Diesel 0# 835</p> <p>Diesel 10# 840</p> <p>Diesel 20# 830</p> <p>Diesel 35# 820</p> <p>Diesel 50# 816</p>

		Gasoline 90# 722 Gasoline 92# 725 Gasoline 95# 737 Gasoline 98# 753
0x2016	WORD	Idle fuel consumption factor: set value / 1000. For example: 1020 -> 1.02
0x2017	BYTE	0x01: Open OBD 0x00: Close OBD
0x2018	BYTE	Send location data mode, the device defaults to first in, first out 0x00: first in, first out (default) 0x01: real-time priority
0x2019	BYTE	Three emergency alarms need to add several seconds of data packets: the increased data is mainly for 0200. 0x00-0x0A, maximum 10 seconds, default is 0 seconds, that is, turn off the function.
0x201A	BYTE	Read Fault Code Instructions: 0x01: Read OBD fault code and report to F2 through 0900. 0x00: Failure code is not read.
0x201B	STRING	WIFI parameter schedule
0x201C	DWORD	In unit seconds, the minimum wake-up time is 5 minutes, or 300 seconds.

3.9 Attached list_Rapid acceleration parameter

Byte position	content	Number of bytes	data type	description
0	Accelerated acceleration level	1	BYTE	0X03: Highly sensitive; 0X02: Medium sensitive; 0X01: Low sensitivity, 0X00: Off

3.10 Attached list_Rapid deceleration parameter

Byte position	content	Number of bytes	data type	description
0	Rapid downgrade level	1	BYTE	0X03: Highly sensitive; 0X02: Medium sensitive; 0X01: Low sensitivity, 0X00: Off

3.11 Attached list_Parameter of sharp turning

Byte position	content	Number of bytes	data type	description
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0	Sharp turn level	1	BYTE	0X03: Highly sensitive; 0X02: Medium sensitive; 0X01: Low sensitivity, 0X00: Off
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3.12 Attached list_Trailer alarm parameter

SN	content	Number of bytes	data type	description
0	Enable	1	ASCII	Alarm shield: 0 no alarm 1 alarm
1	,	1	ASCII	0x2C
2	Tow speed	Length is uncertain	ASCII	Trailer door idling degrees (UnitKM/H, greater than 15KM/H)
3	,	1	ASCII	0x2C
4	Tow Interval	Length is uncertain	ASCII	Trailer conditions meet duration (Unit seconds, greater than 20 seconds)

3.13 Attached list_Collision Alarm Parameter

Byte position	content	Number of bytes	data type	description
0	Collision level	1	BYTE	0X03: Highly sensitive; 0X02: Medium sensitive; 0X01: Low sensitivity, 0X00: Off

3.14 Attached list_Privileges number list

Byte position	content	Number of bytes	data type	description
0	Privileges number	11	ASCII	13866668888, indicating that this number allows configuration query parameter.

3.15 Attached list_Query terminal parameter response message body

Start byte	Field	data type	Description and requirements
0	Response serial number	WORD	The corresponding terminal parameter queries the serial number of the Message
2	Parameter total	BYTE	
3	List of parameter		Parameter item attached list

	items		
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3.16 Attached list_Terminal control message body

Start byte	Field	data type	Description and requirements
0	Command word	BYTE	Terminal controlCommand word Description attached list
1	Command parameter	STRING	Command parameter format has a body see blood description, each field is separated by a half-width ";", each STRING Field is processed according to GBK encoding and then composed of Message

3.17 Attached list_Terminal control command instruction

Start byte	command parameter	Description and requirements
1	command parameter form at attached list	The wireless upgrade .parameter is separated by a semicolon. The command is as follows: "address; dial-up point name; dial-up name; dial-up password; address; TCP port; UDP port; Manufacturer ID; hardware version; firmware version; Time limit", if a parameter has no value, then vent
2	command parameterformatattached list	The control terminal is connected to the specified service. The .parameter is separated by a semicolon. The command is as follows: "Connection control; supervision platform Authentication code; dial-up point name; dial-up user name; dial-up password; address; TCP port; UDP port; connection to the specified server time limit", if a parameter has no value, then emptied, If the connection control value is 1, there is no successor parameter
3		Terminal shutdown
4		Terminal reset
5		Terminal factory reset
6		Turn off data communication
7		Turn off all wireless communication

3.18 Attached list_Command parameter format

Field	data type	Description and requirements
Connection control	BYTE	0: Switch to the specified supervisory platform service, and press the service device to enter In the emergency state, only the supervisory platform that issues the control command in this state can send a control command including SMS: 1: Switch back to the original

		default monitoring platform server and restore normal state.
Dialing point name	STRING	Generally, it is a service device APN, a wireless communication dial-up access point. If the network standard is CDMA, the value is a PPP connection dialing number.
Dial-up username	STRING	Server wireless communication dial-up username
Dial-up password	STRING	Server wireless communication dial password
address	STRING	Server address, IP or domain name
TCP port	WORD	Service TCP port
UDP port	WORD	Service UDP port
Manufacturer ID	BYTE[5]	terminal Manufacturer coding
Regulatory platform Authentication code	STRING	The authentication code issued by the supervisory platform is only used for authentication after the terminal is connected to the supervisory platform. The terminal is connected back to the original monitoring platform and uses the original Authentication code.
hardware version	STRING	Terminal hardware version number, customized by Manufacturer
Firmware version	STRING	Terminal firmware version number, customized by Manufacturer
URL address	STRING	Full URL address
Connect to the specified service Time limit	WORD	Unit: minute (min), the value is not 0 means that the terminal should be connected back to the original address before the expiration of the terminal after receiving the upgrade or connection specified service command. If the value is 0, it means that the specified service is always connected.

3.19 Attached list_Position data batch reporting

Start byte	Field	data type	Description and requirements
0	Number of data items	WORD	Number of Inclusive Location Data Items, > 0
2	Location data item type	BYTE	0: Normal batch data, 1: blind spot compensation
3	Location Reporting Data Items		Data Format Schedule for Location Reporting Data Items

3.20 Attached list_Data format of position report data item

Start byte	Field	data type	Description and requirements
0	Position report data body length	Word	Position report data body length, N
2	Location report message body	BYTE[n]	See, location data message body schedule

3.21 Position info query response

Start byte	Field	data type	Description and requirements
0	Response serial number	WORD	The corresponding information query message serial number
2	Position info reporting		Lookup, location data message body scattached list

3.22 attached list_ [position data information body](#)

Start byte	Field	data type	Description and requirements
0	Alarm Sign	DWORD	See, alarm Sign position definitio nattached list
4	state	DWORD	See, state Sign position definition attached list
8	latitude	DWORD	Multiply the latitude value in degrees by the sixth power of 10, to the nearest millionth of a degree.
12	longitude	DWORD	Multiply the latitude value in degrees by the sixth power of 10, to the nearest millionth of a degree.
16	Elevation	WORD	Altitude in meters (m)
18	Speed degrees	WORD	1/10km/h
20	direction	WORD	0-359, true north is 0, clockwise
22	time	BCD[6]	YY-MM-DD-hh-mm-ss (GMT+8 time, the time involved in this standard is the time zone)
28	Location extension list	N Byte	See, PLocation Additional Information attached list

3.23 Attached list_Status flag bit definition

position	state
0	0: ACC OFF;1:ACC ON
1	0: not positioned; 1: positioning
2	0: North latitude: 1: South latitude

3	0: East longitude; 1: West longitude
4	0: Operation status; 1: Out of service status
5	0: latitude and longitude are not encrypted by the security plug-in; 1: latitude and longitude has been encrypted by the plug-in encryption
6-9	Reserved
10	0: Vehicle oil path is normal; 1: Vehicle oil circuit is disconnected
11	0: Vehicle circuit is normal; 1: Vehicle circuit is disconnected
12	0: The door is unlocked; 1: The door is locked
13	0: normal mode; 1: maintenance mode
14	0: WIFI is off; 1: WIFI is on
15-31	Reserved

3.24 Attached list_Alarm flag bit definition

position	definition	Processing instructions
0	1:Emergency alarm trigger after triggering the alarm switch	Cleared after receiving a response
1	1: Speed alarm	The flag is maintained until the alarm condition is released
2	1: Fatigue driving	The flag is maintained until the alarm condition is released
3	1: Early warning	Cleared after receiving a response
4	1: GNSS module has failed	The flag is maintained until the alarm condition is released
5	1: GNSS antenna is not connected or is cut	The flag is maintained until the alarm condition is released
6	1: GNSS antenna short circuit	The flag is maintained until the alarm condition is released
7	1: Terminal mains under voltage	The flag is maintained until the alarm condition is released
8	1: Terminal main power failure	The flag is maintained until the alarm condition is released
9	1: Terminal LCD or display failure	The flag is maintained until the alarm condition is released
10	1: TTS module failure	The flag is maintained until the alarm condition is released
11	1:Camera failure	The flag is maintained until the alarm condition is released
12-17	Reserved	
18	1:Accumulated driving timeout on the day	The flag is maintained until the alarm condition is released
19	1: Overtime parking	The flag is maintained until the alarm condition is released
20	1: Access area	Cleared after receiving a response

21	1:Entry and exit route	Cleared after receiving a response
22	1:Insufficient travel time on the road section	Cleared after receiving a response
23	1:Route deviation alarm	The flag is maintained until the alarm condition is released
24	1: Vehicle VSS failure	The flag is maintained until the alarm condition is released
25	1: Abnormal vehicle oil	The flag is maintained until the alarm condition is released
26	1: Theft of the vehicle (via vehicle alarm)	The flag is maintained until the alarm condition is released
27	1: Illegal ignition of vehicles	Cleared after receiving a response
28	1: Illegal displacement of the vehicle	Cleared after receiving a response
29-31	Reserved	

3.25 Attached list_Position additional information

Field	data type	Description and requirements
extra information ID	BYTE	1-255
extra information length	BYTE	1-255
extra information		extra information definition attached list

3.26 Attached list_Additional information definition

extra information ID(1byte)	extra information length(1byte)	Description and requirements
0x01	4	Mileage, DWORD, 1/10km, corresponding to the odometer reading on the car
0x02	2	Oil quantity, WORD 1/10L, corresponding to the car oil meter reading
0x03	2	Speed acquired by the driving record function, WORD, 1/10km/h
0x04-0xF		Reserved
0x11	1 or 5	Speed alarm additional information Attached list
0x12	6	In and out area / route alarm additional information Attached list
0x13	7	Insufficient driving time of the road section/excessive alarm additional information attached table
0xEA	Nbyte	Packet sniper ID (2BYTE), length (1BYTE) + data (NBYTE) base data stream Attached list
0xEB	Nbyte	Packet sniper ID (2BYTE), length (1BYTE) + data (NBYTE) car extended data stream <a> Attached list
0xEC	Nbyte	Packet sniper ID (2BYTE), length (1BYTE) + data (NBYTE) truck extended data stream <a> Attached

		list
0xED	Nbyte	Packet nick ID (2BYTE), length (1BYTE) + data (NBYTE), new energy vehicle data item <1> Attached list
0xEE	Nbyte	Packet sniper ID (2BYTE), length (1BYTE) + data (NBYTE), extended peripheral data item Attached list
0xFA	Nbyte	Packet sniper ID (2BYTE), length (1BYTE) + data (NBYTE), alarm command ID and description schedule
...	...	Other reservation

Attach ID:

0XEA: The corresponding data item is represented by the back, and the basic data item has a maximum length of 255;

0XEB: The corresponding data item in the back indicates that the car data item <1> has a maximum length of 255;

0XEC: The corresponding corresponding data item indicates that the truck data item <1> has a maximum length of 255;

0XED: The corresponding data item indicates that the new energy vehicle data item <1> has a maximum length of 255;

0XEE: The corresponding data item is followed by the peripheral data item <1> with a maximum length of 255;

0XFA: The corresponding corresponding data item indicates that the alarm event ID <1> has a maximum length of 255;

3.27 Attached list_Over speed alarm additional information

Start byte	Field	data type	Description and requirements
0	Location type	BYTE	0: no specific location; 1: circular area;2:rectangular area; 3: polygonal area; 4: Road section
1	Area or segment ID	DWORD	If the location type is 0, there is no such field

3.28 Attached list_Pass in and out area/Route alarm additional information

Start byte	Field	data type	Description and requirements
0	Location type	BYTE	1: circular area; 2: rectangular area; 3: polygonal area;

			4: Road section
1	Area or line ID	DWORD	
5	direction	BYTE	0: into; 1: Out

3.29 Attached list_Route driving time is not enough/too long alarm additional information

Start byte	Field	data type	Description and requirements
0	Link ID	DWORD	
4	Road travel time	WORD	The unit is seconds (s)
6	result	WORD	0: insufficient; 1: too long

3.30 Attached list_Basic data flow

function ID field	function ID[2]	length[1]	function	Unit	description
0x0001-0x0fff	0x0001	4	Extended status flag		Extended status flag description schedule
	0x0002	4	Extended alarm flag		Extended alarm flag description
	0x0003	5	Total mileage data	Meter	See total mileage data format table
	0x0004	5	Total fuel consumption data	milliliter	See total fuel consumption data format table
	0x0005	4	Total running time	second	Total cumulative time of vehicle operation
	0x0006	4	Total flame out duration	second	Total cumulative time of vehicle stall
	0x0007	4	Total idle time	second	Vehicle idle speed total time
	0x0008	N	Mileage data sheet	—	Mileage reference packet-60 bytes
	0x0009	N	Fuel consumption data sheet	—	Fuel consumption reference packet 35 bytes
	0x0010	N	Accelerometer		See acceleration data sheet
	0x0011	20	Vehicle status table		Vehicle status table
	0x0012	2	Vehicle voltage	0.1v	0-38v
	0x0013	1	Terminal built-in battery voltage	0.1v	0-5v
	0x0014	1	CSQ value		Network signal strength
	0x0015	2	Model ID		See model ID table for details
	0x0016	1	OBD protocol type		Protocol type: see the mapping table for details.
	0x0017	2	Driving cycle label		
	0x0018	1	GPS number of stars		GPS positioning and collecting stars
0x0019	2	GPS position accuracy	0.01	GPS position accuracy	
0x001A	1	GPS average signal to noise ratio	db	GPS average signal to noise ratio	
0x001B	1	GPS antenna status		0: The antenna is normal 1: The antenna is open	

0x001C	1	Timing state		2: Short circuit of the antenna (requires module support)
0x001D	1	GPS positioning mark		0x00: No positioning 0x01: Positioning 0x02: The device is abnormally pulled out.
0x001E	4	Cumulative mileage	M	When the total mileage data of 0003 is instrumental mileage, it is usually only accurate to 1KM or 10KM, which is not conducive to statistical mileage. In order to facilitate platform statistical mileage, an additional cumulative mileage is added.

3.31 Attached list_Extend peripheral data flow

function ID field	function ID [2]	Length [1]	function	Unit	description
Peripheral data item [0x3001-0x4FFF]	0x3001	1	Positive and negative state		0x00 (stop) 0x01 (forward rotation) 0x02 (reverse)
	0x3002	2	Probe temperature (1)	0.1°C	Starting temperature -40.0 °C, upload value minus 40
	0x3003	2	Probe temperature (2)	0.1°C	Starting temperature -40.0 °C, upload value minus 40
	0x3004	2	Probe temperature (3)	0.1°C	Starting temperature -40.0 °C, upload value minus 40
	0x3005	2	Probe temperature (4)	0.1°C	Starting temperature -40.0 °C, upload value minus 40
	0x3006	N	Tire pressure data		See tire pressure data sheet
	0x3007	N	Bracelet packet		See the bracelet data package (not available)
	0x3008	25	H600 video status information		See H600 Video Status Information Sheet

3.32 Attached list_Car extend data flow<-->

function ID field	function ID[2]	length [1]	function	Unit	description
Car data item (common segment) [0x6001-0x6FFF]	0x60C0	2	Rotating speed	1rpm	0 - 8000
	0x60D0	1	Speed	Km/h	0 - 240
	0x62f0	2	Remaining oil	0.1% 0.1L	Remaining oil, UnitLor%
	0x6050	1	Coolant temperature degree	1°C	Bit15 ==0%% OBD is a percentage
	0x60F0	1	Air inlet temperature	1°C	==1UnitL
	0x60B0	1	Intake (absolute) pressure	1kpa	Display value is upload value/10
	0x6330	1	Atmospheric pressure	1kpa	-40.0°C to +210°C, upload value minus 40
	0x6460	1	Ambient temperature	1°C	-40.0°C to +210°C, upload value minus 40
	0x6490	1	Acceleration pedal	1%	0 - 250kpa

			position		
	0x60A0	2	Fuel pressure	1kpa	0 - 125kpa
	0x6014	1	Fault code state		-40.0°C to +210°C, upload value minus 40
	0x6010	1	Number of fault codes		0% - 100%
	0x6100	2	Air flow	0.1g/s	0 - 500kpa
	0x6110	2	Absolute throttle position	%	Engine fault code state
	0x61F0	2	Time since engine start	sec	Number of engine fault codes
	0x6210	4	Fault mileage	km	0.1 actual value is upload value/10
	0x6040	1	Calculate the load value	%	
	0x6070	2	Long-term fuel correction (cylinder columns 1 and 3)	%	
	0x60E0	2	First cylinder ignition timing advance angle	%	
	0x6701	1	Front brake pad wear		
	0x6702	1	Rear brake pad wear		
	0x6703	1	Brake fluid position		Display value is upload value -64
	0x6704	2	Oil liquid position		0 normal/other, display corresponding data, Unit: level
	0x6705	2	Tire pressure alarm		0 normal/other, display corresponding data, Unit: level
	0x6706	2	Coolant liquid position		0: not normal
	0x6707	4	recharge mileage	0.1km	1: normal

3.33 Attached list_Truck extend data flow<—>

function ID field	function ID[2]	length[1]	function	Unit	description
Truck data item [0x5001-0x6FFF]	0x60C0	2	OBD speed	1rpm	0 - 8000
	0x60D0	1	OBD speed	Km/h	0 - 240
	0x62f0	2	OBD residual fuel	0.1% 0.1L	Remaining oil, UnitLor% Bit15 ==0%% OBD is a percentage ==1UnitL Display value is upload value/10
	0x6050	1	OBD coolant temperature degrees	1°C	-40.0°C to +210°C, upload value minus 40
	0x60F0	1	OBD inlet temperature degree	1°C	-40.0°C to +210°C, upload value minus 40
	0x60B0	1	OBD intake (absolute) pressure	1kpa	0 - 250kpa
	0x6330	1	OBD atmospheric pressure	1kpa	0 - 125kpa
	0x6460	1	OBD environment temperature degrees	1°C	-40.0°C to +210°C, upload value minus 40
	0x6490	1	OBD accelerator pedal position	1%	0% - 100%
	0x60A0	2	OBD fuel pressure	1kpa	0 - 500kpa
	0x6010	1	OBD fault code number	↑	Number of engine fault

				codes
0x5001	1	OBD clutch switch		0x00/0x01 off/on
0x5002	1	OBD brake switch		0x00/0x01 off/on
0x5003	1	OBD parking brake switch		0x00/0x01 off/on
0x5004	1	OBD throttle position	1%	0% - 100%
0x5005	2	OBD oil usage rate	0.05L/h	0 - 3212.75L/h
0x5006	2	OBD fuel temperature degrees	0.05°C	Starting value -273 ° C range (-273 to +1735)
0x5007	2	OBD oil temperature degree	0.05°C	Starting value -273 ° C range (-273 to +1735)
0x5008	1	OBD engine lubricating oil pressure	4kpa	0 - 1000kpa
0x5009	1	OBD brake pedal position	1%	0% - 100%
0x500A	2	OBD air flow	0.1	G/S
0x5101	1	Engine net output torque	1%	-125% - 125% 显示值等于上传值减去 125
0x5102	1	Friction torque	1%	-125% - 125% 显示值等于上传值减去 125
0x5103	2	SCR upstream NOx sensor output value	0.05ppm/bit	
0x5104	2	SCR downstream NOx sensor output value	0.05ppm/bit	
0x5105	1	Reagent balance	1%	Urea tank level
0x5106	2	Air intake	Kg/h	Urea tank level
0x5107	2	SCR inlet temperature	0.03125 °C	-273.0 ° C to +1735 ° C
0x5108	2	SCR outlet temperature	0.03125 °C	-273.0 ° C to +1735 ° C
0x5109	2	DPF differential pressure	0.1KPA	
0x510A	1	Engine torque mode		0: Overspeed failure 1: Speed control 2: Torque control 3: Speed / torque control 9: Normal
0x510B	1	Accelerator	1%	
0x510C	1	Urea tank temperature	1°C	-40.0° C to +210° C, upload value minus 40
0x510D	4	Actual urea injection volume	0.01ml/h	
0x510E	4	Cumulative urea consumption	g	
0x510F	2	DPF exhaust temperature	0.03125 °C	-273.0°C 到 +1735°C

3.34 Attached list_New energy vehicle data flow<—>

function ID field	function ID[2]	length[1]	function	Unit	description
New energy vehicle data item:	0x7001	4	recharge mileage	0.1km	Display value is upload value/10
	0x700	1	remaining battery	%	0% - 100%

[0x7001-0x7FFF]	2				
	0x7003	1	Speed	Km/h	0 - 240
	0x7004	1	Charging state		0x0: initial value 0x1: Not charged 0x2: AC charging 0x3: DC charging 0x4: Charging completed 0x5: Void 0x6: Void 0x7: invalid value
	0x7005	1	Charging pile state		0x01: Insert 0x00: not inserted
	0x7006	2	Power battery charge and discharge current	0.01A	0x0-0xFFFF
	0x7007	2	Single body cell maximum voltage	0.001V	0x0-0xFFFF
	0x7008	2	Single body cell maximum voltage	0.001V	0x0-0xFFFF
	0x7009	2	Drive motor current speed	Rpm	
	0x700a	2	Drive motor current torque	Nm	
	0x700b	1	Drive motor current temperature degrees	C	Upload value minus 40
	0x700c	2	DC bus voltage	0.001V	0x0-0xFFFF
	0x700d	2	DC bus current	0.01A	0x0-0xFFFF
	0x700e	2	Power battery available energy	0.01Kwh	0x0-0xFFFF
	0x7021	1	Single body battery voltage No. 1	V	
	0x7022	1	No. 2 single body battery voltage	V	
	0x7023	1	Single body battery voltage No. 3	V	
	0x7024	1	No. 4 single body battery voltage	V	
	0x7025	1	Single body battery voltage No. 5	V	
	0x7026	1	Single body battery voltage No. 6	V	
	0x7027	1	Single body battery voltage No. 7	V	
	0x7028	1	Single body battery voltage No. 8	V	
	0x7029	1	Single body battery voltage No. 9	V	
	0x702A	1	10 single body battery voltage	V	

3.35 Attached list_Alarm command ID&description data flow

function ID field	function ID[2]	length[1]	function	Description
0x0001-0x0500	0x0001	0	Ignition report	The above data cannot be reported at the same time, only an alarm can be reported.
	0x0002	0	Turn off the fire	
	0x0003	0	Fortification reporting	
	0x0004	0	Disarming report	

0x0005	0	Door open	
0x0006	0	Door closed	
0x0007	0	System startup	
0x0101	0	Trailer alarm	
0x0102	0	Long positioning alarm	
0x0103	0	Terminal pulls out the alarm	
0x0104	0	Terminal insertion alarm	
0x0105	0	Low voltage alarm	
0x0106	9	Idle too long alarm	
0x0107	9	Speed alarm	
0x0108	3	Fatigue driving alarm	
0x0109	9	Water temperature alarm	
0x010A	0	High speed neutral taxi alarm	
0x010B	0	Fuel consumption does not support alarm	
0x010C	0	OBD does not support alarms	
0x010D	0	Low water temperature and high speed	
0x010E	0	Bus does not sleep alarm	
0x010F	0	Open illegally	
0x0110	0	Illegal ignition	
0x0111	0	Accelerated alarm	
0x0112	0	Rapid deceleration alarm	
0x0113	0	Sharp turn alarm	
0x0114	0	Collision alarm	
0x0115	0	Abnormal vibration alarm	
0x0201	0	GPS module fault alarm	
0x0202	0	FLASH fault alarm	
0x0203	0	CAN module fault alarm	
0x0204	0	3D sensor failure alarm	
0x0205	0	RTC module fault alarm	
0x0206	0	Temperature sensor fault alarm	
0x0301	0	Fortification glass is not closed	
0x0302	0	Locked car did not successfully remind	
0x0303	0	Timeout is not set to prevent	

3.36 Attached list_Alarm description:Idling alarm description

Byte sequence	Items	length	Unit	description
0	Idle alarm attribute	1		0x00: Alarm is released; content item with the following data 0x01: Alarm trigger; content item without the following data
1	Alarm duration	2	second	
3	Idle fuel consumption	2	ML	
5	Idle speed	2	RPM	

	maximum			
7	Idle speed minimum	2	RPM	

3.37 Attached list_Alarm description:Overspeed alarm description

Byte sequence	Items	length	Unit	description
0	Speed alarm attribute	1		0x00: Alarm is released; content item with the following data 0x01: Alarm trigger; content item without the following data
1	Alarm duration	2	second	
3	Over speed maximum speed	2	0.1KM/H	
5	Average speed	2	0.1KM/H	
7	Speeding distance	2	Meter	

3.38 Attached list_Alarm description:Fatigue driving alarm description

Byte sequence	Items	length	Unit	description
0	Fatigue Alarm Attribute	1		0x00: Alarm Release; Content Items with the following Data 0x01: alarm trigger; content items without the following data
1	Alarm duration	2	second	

3.39 Attached list_Alarm description:High water temperature alarm description

Byte sequence	Items	length	Unit	description
0	Water Temperature Alarm Attribute	1		0x00: Alarm Release; Content Items with the following Data 0x01: alarm trigger; content items without the following data
1	Alarm duration	4	second	
5	Maximum temperature	2		
7	average temperature	2		

3.40 Attached list _Basic Data Item: Dynamic Packet Data __ Total Mileage Format Table

Items	Byte sequence	length	Algorithm index	Algorithm name
Mileage type	0	1	0x01	GPS total mileage(Cumulative calculation)
			0x02	Other 1[J1939Mileage algorithm1]
			0x03	Other 2[J1939Mileage algorithm2]
			0x04	Other 3[J1939Mileage algorithm3]
			0x05	Other 4[J1939Mileage algorithm4]
			0x06	Other 5[J1939Mileage algorithm5]
			0x07	OBD Instrument mileage
			0x08	OBD Speed mileage
			0x09	Other 6[J1939Mileage algorithm6]
			0x0A	Other 7[J1939Mileage algorithm7]
			0x0B	Other 8[J1939Mileage algorithm8]
			0x0C	Other 9[J1939Mileage algorithm9]

total mileage	1	4	Unit: m
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3.41 Attached list _Basic Data Item: Dynamic Packet Data __ Total Fuel Consumption Format Table

Items	Byte sequence	length	Fuel consumption type	Algorithm name
Fuel consumption type	0	1	0x01	J1939 Fuel consumption algorithm1
			0x02	J1939 Fuel consumption algorithm2
			0x03	J1939 Fuel consumption algorithm3
			0x04	J193 9Fuel consumption algorithm4
			0x05	J1939 Fuel consumption algorithm5
			0x0B	OBD Fuel consumption algorithm1
			0x0C	OBD Fuel consumption algorithm2
Total fuel consumption	1	4	Unit:ML	

3.42 Attached list_Basic data item: Dynamic packet data__acceleration table

Total length	Byte sequence	content	byte	type	Unit	instructions
N byte	0	Number of collection points	2	u16		
	2	Collection point interval	2	u16	millisecond	
	4	Acceleration Mean 1	2	u16	mg	First acquisition point acceleration average
	5	Acceleration Mean 2	2	u16	mg	Second collection point acceleration average
	6	Acceleration Mean 3	2	u16	mg	The third acquisition point acceleration average
	10	Acceleration Mean 4	2	u16	mg	Fourth collection point acceleration average
	N	Acceleration Mean N	2	u16	mg	The average of the Nth collection point acceleration
	N+2	Acceleration Total Max	2	u16	mg	Maximum acceleration value during acquisition time

3.43 Attached list_Peripheral data item: Dynamic packet data__TPMS data table

Total length	Byte sequence	type	length	content	description
4+2*N	0	u32	4	Tire mask	BIT31-BIT0 High position in front of the low post BIT31: No. 1 tire (if 1, then there is a tire pressure byte, otherwise it is empty) BIT30: No. 2 tire (if 1, then there is a tire pressure byte, otherwise it is empty) BIT0 : No. 32 tire (if 1, then there is a tire pressure byte, otherwise it is empty)
	4	u16	2	No. X tire	Unit 1 Kpa

				pressure	

	N	u16	2	No. X+N tire pressure	No. X+N tire pressure

Note: Only the tire with the tire mask set is followed by the tire pressure byte.

Example: When 0x80000000 is the mask, only the first tire pressure is followed.

For example: 0x88000000 0x0082 0x0096 Represents No. 1 tire pressure 130kpa, No. 5 tire pressure 150kpa

3.44 Attached list_Basic data item: Dynamic packet data__Vehicle status table

Segment sequence	Sub sequence	content	Word count	data type	Precision	Unit	description	
State mask	1	State mask	10	u8			Car State mask	
							Indicates the following 10 types of car status support or not	
Status field	1	Security status	1	u8			Bit0 1/0 ON/OFF ACC status	
							Bit1 1/0 Arming/disarming Defense withdrawal status	
							Bit2 1/0 Press/release foot brake	
							Bit3 1/0 Step on/release throttle	
							Bit4 1/0 Pull up/Down	
							Bit5 1/0 Insert/release Main seat belt	
							Bit6 1/0 Insert/release Secondary seat belt	
							Bit7 1/0 Reserved	
	2	Door status	1	u8				Bit0 1/0 open / turn off Left front door LF
								Bit1 1/0 open / turn off Right front door RF
								Bit2 1/0 open / turn off Left rear door LB
								Bit3 1/0 open / turn off Right rear door RB
								Bit4 1/0 open / turn off Trunk TRUNK
								Bit5 1/0 open / turn off Engine cover
								Bit6 1/0 Reserved
								Bit7 1/0 Reserved
	3	Lock status	1	u8				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 open / turn off Left front window LF	
							Bit1 1/0 open / turn off Right front window RF	
							Bit2 1/0 open / turn off Left rear window LB	
							Bit3 1/0 open / turn off Right rear window RB	
							Bit4 1/0 open / turn off Sunroof switch	

						Bit5 1/0	open / turn off	Left turn signal						
						Bit6 1/0	open / turn off	Right turn signal						
						Bit7 1/0	open / turn off	reading light						
	5	Light state 1	1	u8		Bit0 1/0	open / turn off	Low beam lights						
Bit1 1/0						open / turn off	High beam							
Bit2 1/0						open / turn off	Front fog lights							
Bit3 1/0						open / turn off	Rear fog lamps							
Bit4 1/0						open / turn off	Danger lamp							
Bit5 1/0						open / turn off	Reversing light							
Bit6 1/0						open / turn off	AUTO light							
Bit7 1/0						open / turn off	Indicator lamp							
	6	switch status A	1	u8		Bit0 1/0	ON/OFF	Oil alarm						
Bit1 1/0						ON/OFF	Fuel alarm							
Bit2 1/0						open / turn off	Wiper							
Bit3 1/0						open / turn off	horn							
Bit4 1/0						open / turn off	Air conditioner							
Bit5 1/0						open / turn off	Rear view 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	Non-existent			
8	Reserved	1	u8			Reserved								
9	Reserved	1	u8			Reserved								
10	Reserved	1	u8			Reserved								

3.45 Attached list_Basic data item: H600 video status table

position	definition	Description
1	Total number of channels	Number of camera channels (1-4)
2	Intercom request	0: No intercom request 1: The device is initiating a intercom request
3	Live video	0: Not connected, non-zero: streaming video bit0 The first way, bit1 The first two, bit2 The third way, bit3 The fourth way
4	Intercom status	0: not initiated, 1: Intercom
5	Video playback	0: not initiated, Non-zero: the channel is being played back remotely bit0 The first way, bit1 The first two, bit2 The third way, bit3 The fourth way

6	SD1 status	0:Non-existent, 1:normal, 0xff:disk error
7	SD2 state	0:Non-existent, 1:normal, 0xff:disk error
8	HDD state	0:Non-existent, 1:normal, 0xff:disk error
9	USB drive state	0:Non-existent, 1:normal, 0xff:disk error
10	EMMC state	0:Non-existent, 1:normal, 0xff:disk error
11	Work disk	0xff: No working disk, 0:SD1 For working disks, 1:SD2 For working disks, 2: Hard disks are working disks
12	Video state	0: Video is normal, non-zero: channel video loss anomaly bit0 The first way, bit1 The first two, bit2 The third way, bit3 The fourth way
13	Video occlusion	0:Video is normal, non-zero: channel video occlusion abnormal bit0 The first way, bit1 The first two, bit2 The third way, bit3 The fourth way
14	Channel videotape	0: not videotape, 1: timing videotape, 2: manual videotape, 3: alarm videotape
15	Channe2 videotape	0: not videotape, 1: timing videotape, 2: manual videotape, 3: alarm videotape
16	Channe3 videotape	0: not videotape, 1: timing videotape, 2: manual videotape, 3: alarm videotape
17	Channe4 videotape	0: not videotape, 1: timing videotape, 2: manual videotape, 3: alarm videotape
18	Channe5 videotape	0: not videotape, 1: timing videotape, 2: manual videotape, 3: alarm videotape
19	Channe6 videotape	0: not videotape, 1: timing videotape, 2: manual videotape, 3: alarm videotape
20	Channe7 videotape	0: not videotape, 1: timing videotape, 2: manual videotape, 3: alarm videotape
21	Channe8 videotape	0: not videotape, 1: timing videotape, 2: manual videotape, 3: alarm videotape
22	Disaster recovery videotape	0: Video is not videotape, non-zero: channel video videotape bit0 The first way, bit1 The first two, bit2 The third way, bit3 The fourth way
23	Emmc videotape	0: Video is not videotape, non-zero: channel video videotape bit0 The first way, bit1 The first two, bit2 The third way, bit3 The fourth way
24	Authorization state	0: Unauthorized, 1: Authorized
25	AV Output	The upper 4 bits indicate how many pictures, and the lower 4 bits indicate the enlarged number. 0x11-0x16 Single screen 0x20:2 image, 0x40:4 image, 0x60:6 image,0x90:9 image For Single screen, 0x11: Channel 1 is enlarged 0x12: Channel 2 is enlarged 0x16: channel 6 zooms in

3.46 Attached list_basic data items: H600 input semaphore

position	definition	Processing Description
0	Signal 1	Brake signal (high trigger) 1: Trigger 0: Not triggered
1	Signal 2	Low beam signal (high trigger) 1: Trigger 0: Not triggered
2	Signal 3	High beam signal (high trigger) 1: Trigger 0: Not triggered
3	Signal 4	Left turn signal (high trigger) 1: trigger 0: not triggered
4	Signal 5	Right turn signal (high trigger) 1: trigger 0: not triggered
5	Signal 6	Custom high 1 signal (high trigger) 1: Trigger 0: Not triggered
6	Signal 7	Custom high 2 signal (high trigger) 1: Trigger 0: Not triggered
7	Signal 8	Robbery signal (low trigger) 1: Trigger 0: Not triggered
8	Signal 9	Gate signal (low trigger) 1: Trigger 0: Not triggered
9	Signal 10	Custom low 1 signal (low trigger) 1: Trigger 0: not triggered
10	Signal 11	Custom low 2 signal (low trigger) 1: trigger 0: not triggered

3.47 Attached list_Basic Data Item: OBD state Flag Definition

position	state
0	0: Disarming and reporting; 1: Defending reporting
1-31	Reserved

3.48 Attached list_Basic data item: OBD Alarm flag bit definition

position	definition	Processing Description
0	1:Water temperature alarm	The flag is maintained until the alarm condition is released
1	1: Idle too long alarm	The flag is maintained until the alarm condition is released
2	1: Accelerated alarm	The flag is maintained until the alarm condition is released
3	1: Rapid deceleration alarm	The flag is maintained until the alarm condition is released
4	1: Sharp turn alarm	The flag is maintained until the alarm condition is released
5	1: Collision alarm	The flag is maintained until the alarm condition is released
6	1: Trailer alarm	The flag is maintained until the alarm condition is released
7	1: Terminal mains under voltage	The flag is maintained until the alarm condition is released
8	1: Terminal main power failure	The flag is maintained until the alarm condition is released

9	1: Pull out the alarm	The flag is maintained until the alarm condition is released
10	1: Insert alarm	The flag is maintained until the alarm condition is released
11	1:Fuel consumption does not support alarm	The flag is maintained until the alarm condition is released
12	1:OBD does not support alarms	The flag is maintained until the alarm condition is released
13	1:Bus does not sleep alarm	The flag is maintained until the alarm condition is released
14	1:Open illegally	The flag is maintained until the alarm condition is released
15	1: Illegal ignition	The flag is maintained until the alarm condition is released
16	1: GPS module fault alarm	The flag is maintained until the alarm condition is released
17	1: FLASH fault alarm	The flag is maintained until the alarm condition is released
18	1: CAN module fault alarm	The flag is maintained until the alarm condition is released
19	1: 3D sensor failure alarm	The flag is maintained until the alarm condition is released
20	1: RTC module fault alarm	The flag is maintained until the alarm condition is released
21-31	Reserved	

3.49 Attached list_Basic data item: Alarm ID index

Alarm ID	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	Flame out report	0x0102	Positioning too long alarm	0x0202	FLASH fault alarm	0x0302	Locked car did not successfully remind
0x0003	Fortification reporting	0x0103	Terminal pull out alarm	0x0203	CAN module fault alarm	0x0303	Timeout is not set to prevent
0x0004	Disarming report	0x0104	Terminal insert alarm	0x0204	3D Sensor failure alarm		
0x0005	Door open	0x0105	low voltage alarm	0x0205	RTC Module failure alarm		
0x0006	Door closed	0x0106	Idle too long	0x0206	Temperature sensor failure alarm		
0x0007	System start up	0x0107	Over speed alarm				
		0x0108	fatigue driving				
		0x0109	Water temperature alarm				
		0x010A	High speed neutral taxi				
		0x010B	Fuel consumption is not supported alarm				

		0x010C	OBD not support Fuel consumption is not supported alarm				
		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				

3.50 Attached list_Vendor defined extension number

Field	Data type	Description and requirements	Field
extra information ID	BYTE	1-255	extra information ID
extra information length	BYTE	0-255	extra information length
extra information content	N BYTE	0-255	extra information content(Extra information length is 0 when there is no such Field)

extra information ID(byte)	extra information length(byte)	extra information content
0x01 (note 1)	1 or 10	<p>Base station information (GSM/LTE/UMTS) [default]</p> <p>STATE (1byte) [+ MCC (2byte) + MNC (1byte) + LAC (2byte) + CID (4byte)]</p> <p>STATE: Valid mark</p> <p>0x00:Invalid (no follow-up) Field) 0x01:Valid</p> <p>MCC : National area code 460 is China</p> <p>MNC : Operator number 0x00: mobile 0x01: Unicom 0x11: telecom 4G</p> <p>LAC/TAC: Base station information 1-65535</p> <p>CID : Base station information 2G(1~65535), 3G/4G(1~268435455)</p>

0x02	1 or 9	Base station information(CDMA) STATE (1byte) [+ MCC (2byte) + SID (2byte) + NID (2byte) + BID (2byte)] STATE: Valid mark 0x00:invalid(Invalid no follow-up field) 0x01:Valid MCC : National area code 460 is China SID : Base station information 0~32767 NID : Base station information 0~65535 BID : Base station information 0~65535
...	...	

Note 1:

Example1: 0x01 0x01 0x00 Base station position invalid

Example2: 0x01 0x0A 0x01 0x01 0xCC 0x00 0x88 0x2C 0x00 0x00 0xF2 0x59

Base station fixed position, MCC: 460 MNC: Mobile LAC: 34860 CID: 62041 Position position is Yunnan Xishuangbanna

3.51 Attached list _ temporary position set tracking control message body

Start byte	Field	Data type	Description and requirements
0	time interval	WORD	Unit is seconds (s), and 0 stops tracking. Stop tracking without taking a subsequent field
2	Position set tracking period	DWORD	Unit is seconds (S), after receiving the position tracking control message, the terminal sends a position report according to the time interval in the message before the validity period expires.

3.52 Attached list _Version information packet

Start byte	Field	Data type	Description and requirements
0	Terminal software version number	STRING[14]	Software version number: HL M200 V201001 HL -----product name M200 -----Terminal name code V201 -----Software version number, release version 001 -----Software minor version number, submitted as an internal test
14	Terminal software version date	STRING[10]	Software date: 2018-11-19
24	CPU ID 号	BYTE[12]	
36	GSM TYPE Name	STRING[15]	GSM model:
51	GSM IMEI 号	STRING[15]	GSM IMEI number
66	SIM 卡 IMSI 号	STRING[15]	Terminal SIM card IMSI number
81	SIM 卡 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	Total mileage or vehicle instrument mileage (m) after the terminal is installed
124	Total fuel consumption	DWORD	Total vehicle fuel consumption (ml) after loading the terminal

3.53 Attached list_Version information packet response

Start byte	Field	Data type	Description and requirements
0	Platform current time	BYTE[6]	minute, hour, month, Year, and second (BCD code) Beijing time, Dongba District For example: 0x19, 0x01, 0x28, 0x18, 0x10, 0x30 For Beijing time 19/1/28 18:10:30
6	Model ID	WORD	Fill 0 without setting the model
8	Displacement	WORD	Unit ML, padding 0 if no setting is required
10	Whether to upgrade	BYTE	0x55 upgrade, other does not upgrade

3.54 Attached list_text message delivery message body

Start byte	Field	Data type	Description and requirements
0	Sign	BYTE	Text message Mark position meaning Attached list
1	Text information	STRING	Up to 102 bytes, encoded by GBK

3.55 Attached list_Text message、flag bit meaning

position	Sign
0	1: urgent
1	Reserved
2	1: Terminal display
3	1: Terminal TTS broadcast
4	1: Advertising screen display
5-7	Reserved

3.56 Attached list_text message on the message body

Start byte	Field	Data type	Description and requirements
0	Sign	BYTE	'0' stands for TXT_BG2312 and '1' is TXT_UNICODE
1	Sign symbol	STRING	The default is ""*tip*", which takes up 6 bytes.
7	Text information	STRING	Up to 102 bytes, encoded by GBK

3.57 Attached list_Vehicle Control Message Body

Start byte	Field	Data type	Description and requirements
0	Control Sign	BYTE	Control instruction Signposition Attached list

3.58 Attached list_Control command flag bit

position	Sign
0	0: Door unlock; 1: Door lock

1-7	Reserved
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3.59 Attached list_vehicle control response message body

Start byte	Field	Data type	Description and requirements
0	Response serial number	WORD	The serial number of the corresponding vehicle control message
2	Position info reporting message body		Determine whether the control succeeds or not according to the corresponding state position

3.60 Attached list_Setting round area message body

Start byte	Field	Data type	Description and requirements
0	Setting properties	BYTE	0: Update area; 1: Additional area; 2: Modify area
1	Total number of regions	BYTE	
2	Regional item		Area item content data table of circular area

3.61 Attached list_Item data of round area

Start byte	Field	Data type	Description and requirements
0	Area ID	DWORD	
4	Regional attribute	WORD	Regional attribute definition Attached list
6	Center point latitude	DWORD	Multiply the latitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.
10	Center point longitude	DWORD	Multiply the longitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.
14	radius	DWORD	Unit is m (m), the road segment is the inflection point to the next inflection point
18	Start time	BCD[6]	YY-MM-DD-hh-mm-ss, if the regional attribute0 position is 0, there is no such field
24	End Time	BCD[6]	YY-MM-DD-hh-mm-ss, if the regional attribute0 position is 0, there is no such field
30	Maximum speed	WORD	Km/h, if the Regional attribute1 position is 0, there is no such Field
32	Speeding duration	BYTE	Unit is seconds (s) (similar to the description, modified as before), if the Regional attribute1 position is 0, there is no such Field

3.62 Attached list_Definition of region attribute

position	Sign
0	1: According to time
1	1: Speed limit
2	1: Enter the area alarm to the driver
3	1: Enter the area alarm to the platform
4	1: Out of area alarm to the driver
5	1: Out of the area alarm to the platform
6	0: north latitude; 1: south latitude
7	0: East longitude; 1: West
8-15	Reserved

3.63 Attached list_Delete round area message body

Start byte	Field	Data type	Description and requirements
0	Number of regions	BYTE	The number of regions included in this message is no more than 125. More than 125 suggestions use multiple messages, and 0 is to delete all circular regions.
1	Area ID1	DWORD	
	DWORD	
	Area IDn	DWORD	

3.64 Attached list_Setting rectangle area

Start byte	Field	Data type	Description and requirements
0	Setting properties	BYTE	0: Update area 1: Additional area; 2: Modify area
1	Total number of regions	BYTE	
2	Regional items		Regional items data Attached list for rectangular areas

3.65 Attached list_Item data of rectangle area

Start byte	Field	Data type	Description and requirements
0	Area ID	DWORD	
4	Regional attribute	WORD	Regional attribute definition see Table 47
6	Latitude of upper left point	DWORD	Multiply the latitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.

10	Left upper point longitude	DWORD	Multiply the latitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.
14	Right lower point latitude	DWORD	Multiply the latitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.
18	Right lower point longitude	DWORD	Multiply the latitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.
22	Start time	BCD[6]	Time range setting in the same circular area
28	End Time	BCD[6]	Time range setting in the same circular area
34	Maximum speed	WORD	Unit is kilometers per hour (km/h), if the Regional attribute1position is not the Field
36	Speeding duration	BYTE	Unit is seconds (S), if the Regional attribute1position is 0, there is no such field.

3.66 Attached list_Delete rectangle area message body

Start byte	Field	Data type	Description and requirements
0	Number of regions	BYTE	In this message, there are no more than 125 Number of regions, more than 125 suggestions use multiple messages, and 0 is to delete all rectangular regions.
1	Area ID1	DWORD	
	DWORD	
	Area IDn	DWORD	

3.67 Attached list_Setting polygon area message body

Start byte	Field	Data type	Description and requirements
0	Area ID	DWORD	
1	Regional attribute	WORD	Regional attributedefinition
6	Start time	BCD[6]	Time range setting in the same circular area
12	End Time	BCD[6]	Time range setting in the same circular area
18	Maximum speed	WORD	Unit is kilometers per hour (Km/h). If Regional attribute1position is 0, there is no such field.
20	Speeding duration	BYTE	Unit is seconds (s), if the Regional attribute1position is 0, there is no such field.
21	Regional total fixed point	WORD	
23	Number of vertices		Vertex item data of a polygon area

3.68 Attached list_Vertex data of polygon area

Start byte	Field	Data type	Description and requirements
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0	Vertex latitude	DWORD	Multiply the latitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.
4	Vertex longitude	DWORD	Multiply the latitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.

3.69 Attached list _ delete polygon area message body

Start byte	Field	Data type	Description and requirements
0	Number of regions	BYTE	In this message, there are no more than 125 Number of regions, more than 125 suggestions use multiple messages, and 0 is to delete all rectangular regions.
1	Area ID1	DWORD	
	DWORD	
	Area IDn	DWORD	

3.70 Attached list _Set Route Message Body

Start byte	Field	Data type	Description and requirements
0	Route ID	DWORD	
4	Route attribute	WORD	Route attribute data Attached list
6	Start time	BCD[6]	Time range setting in the same circular area
12	End Time	BCD[6]	Time range setting in the same circular area
18	Total number of inflection points	WORD	
20	Inflection point		Route inflection point data Attached list

3.71 Attached list_Route attribute data

position	Sign
0	1: According to time
1	Reserved
2	1: Enter the route alarm to the driver
3	1: Enter the route alarm to the platform
4	1: Exit the route alarm to the driver
5	1: Exit the route alarm to the platform
6-15	Reserved

3.72 Attached list_Route inflection point data

Start byte	Field	Data type	Description and requirements
0	Inflection point ID	DWORD	

4	Link ID	DWORD	
8	Turning point latitude	DWORD	Multiply the latitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.
12	Turning point longitude	DWORD	Multiply the longitude value of the unit by 10 to the sixth power of 10, to the nearest millionth of a degree.
16	Link width	BYTE	Unit is m (m), the road segment is the inflection point to the next inflection point
17	Segment attribute	BYTE	Link attribute data Attached list
18	Driving time of road section	WORD	Unit is seconds (S), and if the link attribute 0 position is zero, there is no Field.
20	Inadequate driving	WORD	Unit is seconds (S), if the link attribute 0 position is 0, there is no such field.
22	Maximum Section Speed	WORD	Unit is kilometers per hour (km/h). If the section attribute 1 position is 0, there is no such field.
24	Question on the duration of speeding on a road section	BYTE	Unit is seconds (S), and if the link attribute 1 position is 0, there is no Field.

3.73 Attached list_Road attribute data

position	Sign
0	1: Driving time
1	1: Speed limit
2	0: north latitude; 1: south latitude
3	0: East longitude; 1: West longitude
4-7	Reserved

3.74 Attached list _ delete route message body

Start byte	Field	Data type	Description and requirements
0	Number of routes	BYTE	In this message, there are no more than 125 Number of regions, more than 125 suggestions use multiple messages, and 0 is to delete all rectangular regions.
1	Route ID1	DWORD	
	DWORD	
	Route ID n	DWORD	

3.75 Attached list_MDVR data collection command message body

Start	Field	Data type	Description and requirements
-------	-------	-----------	------------------------------

byte			
0	Command word	BYTE	The list of command words is shown in GB/T19056

3.76 Attached list_Driving recording data upload message body

Start byte	Field	Data type	Description and requirements
0	Command word	BYTE	Command word issued by the corresponding platform
1	Total length of data block	WORD	
3	Packet data length	WORD	
5	data block		See related content in GB/T19056 for the data block content format

3.77 Attached list_Driving recording data download message body

Start byte	Field	Data type	Description and requirements
0	Command word	BYTE	For Command word content format, see content at GB/T19056
1	data block		Data block content format see GB/T19056 related content

3.78 Attached list_Driver ID information reports message body

Start byte	Field	Data type	Description and requirements
0	Driver's name length	BYTE	
1	Driver's name	STRING	Driver's name, lengthn
1+n	Driver ID code	STRING	length20position
21+n	Qualification certificate	STRING	length40position
61+n	Name of the issuing authority	BYTE	lengthm
61+n+m	Issuing agency name	STRING	Qualification certificate issuing institution name

3.79 Attached list_Multi-media event info upload

Start byte	Field	Data type	Description and requirements
0	Multimedia data ID	DWORD	>0
4	Multimedia type	BYTE	0: image; 1: Audio; 2: video

5	Multimedia format encoding	BYTE	0: JPEG; 1: TIF; 2: MP3; 3: WAV; 4: WMV; other Reserved
6	Event item code	BYTE	0: platform sends instructions; 1: timing action; 2: robbery alarm trigger; 3: collision rollover alarm trigger; other Reserved
7	Channel ID	BYTE	

3.80 Attached list_Multi-media data upload message body

Start byte	Field	Data type	Description and requirements
0	Multimedia ID	DWORD	>0
4	Multimedia type	BYTE	0: image; 1: Audio; 2: video
5	Multimedia format encoding	BYTE	0: JPEG; 1: TIF; 2: MP3; 3: WAV; 4: WMV; other Reserved
6	Event item code	BYTE	0: the platform sends the command; 1: the timing action; 2: the robbery alarm trigger; 3: the collision rollover alarm trigger; other Reserved
7	Channel ID	BYTE	
8	Position info reporting (0x0200) message body	BYTE[28]	Indicates the position of the multimedia data to set the basic information data
36	Multimedia data package		

3.81 Attached list _multimedia data upload response message body

Start byte	Field	Data type	Description and requirements
0	Response serial number	WORD	The serial number of the corresponding multimedia data upload message
2	Multimedia ID	DWORD	>0
6	Total number of retransmissions	BYTE	
7	Retransmission packet ID list		No more than 125 items, no such paragraph indicates that you have received a data package

3.82 Attached list_Camera shot immediately commands

Start byte	Field	Data type	Description and requirements
------------	-------	-----------	------------------------------

0	Channel ID	BYTE	>0
1	Shooting command	WORD	0 means stop shooting; 0xFFFF means videotape; other means number of pictures
3	Photo interval, videotape Time	WORD	Seconds, 0 means taking pictures at the minimum interval or always videotape
5	Keep Sign	BYTE	1: keep ; 0: Real-time upload
6	Resolution	BYTE	0x01:320*240; 0x02:640*480; 0x03:800*600; 0x04:1024*768; 0x05:176*144;[Qcif]; 0x06:352*288;[Cif]; 0x07:704*288;[HALF D1]; 0x08:701*576;[D1];
7	image/video quality	BYTE	1-10, 1 represents the smallest mass loss, and 10 represents the largest compression ratio.
8	brightness	BYTE	0-255
9	Contrast	BYTE	0-127
10	saturation	BYTE	0-127
11	Chroma	BYTE	0-255
If the terminal is not supported by the support Fuel consumption is not supported system, take the closest Resolution and shoot it.			

3.83 Attached list_Camera shot immediately commands response data format

Start byte	Field	Data type	Description and requirements
0	Response serial number	WORD	Corresponding to the platform camera immediately Shooting command message serial number
2	result	BYTE	0: success; 1: failure; 2: channel not support Fuel consumption is not supported. The following fields are valid only when result =0.
3	Multimedia ID Number	WORD	n, the number of successful multimedia shots
5	Multimedia ID List	BYTE[4*n]	

3.84 Attached list_Storing multimedia data retrieval message body

Start byte	Field	Data type	Description and requirements
0	Multimedia type	BYTE	0:image;1:Audio;2:video;

1	Channel ID	BYTE	0 means to retrieve all channels of the media type;
2	Event item code	BYTE	0: The platform sends the command: 1: Timing action: 2: Robbery alarm Touch: 3: Collision rollover alarm trigger; other Reserved
3	Start time	BCD[6]	YY-MM-DD-hh-mm-ss
9	End Time	BCD[6]	YY-MM-DD-hh-mm-ss

3.85 Attached list_Storing multimedia data retrieval response message body

Start byte	Field	Data type	Description and requirements
0	Response flow	WORD	The serial number of the corresponding multimedia data retrieval message
2	Multimedia data Total number of items	WORD	The total number of multimedia data items that satisfy the search bar
4	Number of items	WORD	The number of multimedia data in the current data package
6	Search term		Multimedia search item data Attached list

3.86 Attached list_Multimedia data retrieval item

Start byte	Field	Data type	Description and requirements
0	Multimedia type	BYTE	0: image; 1: Audio; 2: video
1	Channel ID	BYTE	
2	Event item code	BYTE	0: platform sends instructions; 1: timing action; 2: robbery alarm trigger; 3: collision rollover alarm trigger; other Reserved
3	Position info reporting (0x0200) message body		Report message indicating the start time of the shooting or recording

3.87 Attached list_Multi-media data upload commands message body

Start byte	Field	Data type	Description and requirements
0	Multimedia type	BYTE	0:image;1:Audio;2:video
1	Channel ID	BYTE	
2	Event item code	BYTE	0: platform sends

			instructions; 1: timing action; 2: robbery alarm trigger; 3: collision rollover alarm trigger; other Reserved
3	Start time	BCD[6]	YY-MM-DD-hh-mm-ss
9	End Time	BCD[6]	YY-MM-DD-hh-mm-ss
15	Delete Sign	BYTE	0:Reserved;1>Delete ;

3.88 Attached list_Data uplink and transparent message body

Start byte	Field	Data type	Description and requirements
0	Transparent message type	BYTE	Transparent message type definition table
1	Transparent message content	[N]BYTE	Corresponding message content

3.89 Attached list_Transparent message type definition

Transparent message type	Transparent message content	Description and requirements
0xF1	Driving experience data (Stop sending)	Driving itinerary data package Attached list
0xF2	error code data (state Change send)	Fault code data package Attached list
0xF3	Sleep enter (send into sleep mode to send)	Sleep into the data package Attached list
0xF4	Sleep wake up (exit sleep mode send)	Sleep wake up data package Attached list
0xF5	Vehicle GPS streamlined data package (truck version)	Temporarily not joined

3.90 Attached list_Driving recording data package F1

Field	Data type	Description and requirements
Information ID	WORD	
Information length	BYTE	
Information content		Driving Attached list data dynamic information Attached list

3.91 Attached list_Driving recording data dynamic tablet

Message ID	length	content	type	description
0x0001	6	ACC ON Time BCD[6]	u8	YY-MM-DD-hh-mm-ss (GMT+8 time) East Eight Time Zone, BCD code

0x0002	6	ACC OFF Time BCD[6]	u8	YY-MM-DD-hh-mm-ss (GMT 8 time) East eight time zone, BCD cod
0x0003	4	ACC ON latitude	u32	Unit: 0.000001degrees, Bit31=0/1 north latitude/south latitude
0x0004	4	ACC ON longitude	u32	Unit: 0.000001degrees, Bit31=0/1 East longitude/West longitude
0x0005	4	ACC OFF latitude	u32	Unit: 0.000001degrees, Bit31=0/1 north latitude/south latitude
0x0006	4	ACC OFF longitude	u32	Unit: 0.000001degrees, Bit31=0/1 East longitude/West longitude
0x0007	2	Trip Mark	u16	Driving cycle label
0x0008	1	Trip Distance Type	u8	A driving cycle total Mileage type: 0x01 GPS total mileage (cumulative) 0x02 other1[J1939Mileage algorithm1] 0x03 other2[J1939Mileage algorithm2] 0x04 other3[J1939Mileage algorithm3] 0x05 other4[J1939Mileage algorithm4] 0x06 other5[J1939Mileage algorithm5] 0x07 OBD Instrument mileage0x08 OBD Speed degrees mileage 0x09 other6[J1939Mileage algorithm6] 0x0A other7[J1939Mileage algorithm7] 0x0B other8[J1939Mileage algorithm8] 0x0C other9[J1939Mileage algorithm9]
0x0009	4	Trip Distance	u32	a driving cycle total mileage, Unit meter
0x000A	4	Trip Fuel Consum	u32	Total fuel consumption for a driving cycle, Unit ml (ml)
0x000B	4	Trip Duration Total	u32	The total duration of a driving cycle, Unit seconds
0x000C	2	Trip Over speed Duration	u16	A driving cycle overspeed cumulative time, Unit seconds
0x000D	2	Trip Over speed Times	u16	One driving cycle speeding, Unit times
0x000E	1	Trip Speed Average	u8	Average driving speed of a driving cycle, Unit KM/H
0x000F	1	Trip Speed Maximum	u8	Maximum speed of a driving cycle, Unit KM/H

0x0010	4	Trip Idle Duration	u32	One driving cycle idle time, Unit seconds
0x0011	1	Trip Mask of Braking	u8	Support for a driving cycle foot brake, 1 for support
0x0012	2	Trip Number of Braking	u16	The total number of times a driving cycle foot brake, Unit times
0x0013	4	Trip Accelerate times	u32	Rapid acceleration of a driving cycle
0x0014	4	Trip Decelerate times	u32	Number of Accelerated Deceleration in a Driving Cycle
0x0015	4	Trip Sharp turn times	u32	Number of sharp turns in a driving cycle
0x0016	4	Trip Miles speed less than 20Km/H	u32	The speed is 20km /H,Unit:m
0x0017	4	Trip Miles speed between 20-40Km/H	u32	Speed degrees is $20\text{-}40\text{km /H}$,Unit:m
0x0018	4	Trip Miles speed between 40-60Km/H	u32	Speed degrees is $40\text{-}60\text{km /H}$,Unit:m
0x0019	4	Trip Miles speed between 60-80Km/H	u32	Speed degrees are $60\text{-}80\text{km /H}$,Unit:m
0x001A	4	Trip Miles speed between 80-100Km/H	u32	Speed degrees are $80\text{-}100\text{km /H}$,Unit:m
0x001B	4	Trip Miles speed between 100-120Km/H	u32	Speed degrees are $100\text{-}120\text{km/H}$ mileage, Unit: m
0x001C	4	Trip Miles speed Over 120Km/H	u32	Speed degrees are 120km/H or more, Unit: m
0x001D	4	The idle speed fuel consumption	u32	Idle fuel consumption value in a stroke, unit :ML

3.92 Attached list_Sleep into packets F3

Byte position	content	Number of bytes	Data type	description
0	Time BCD[6]	6	u8	Sleep entry time YY-MM-DD-hh-mm-ss (GMT+8 time) East eight time zone, BCD code

3.93 Attached list_Sleep wake up packets F4

Byte position	content	Number of bytes	Data type	description
0	Time BCD[6]	6	u8	Sleep wake-up time YY-MM-DD-hh-mm-ss (GMT+8 time) East eight time zone, BCD code
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 degree value

3.94 Attached list_fault code packets F2

Byte position	content	Number of bytes	Data type	description
0	TIME BCD[6]	6	u8	YY-MM-DD-hh-mm-ss(GMT+8 time)
6	latitude	4	u32	Unit: 0.000001degrees, Bit31=0/1 north latitude/south latitude
10	longitude	4	u32	Unit: 0.000001degrees, Bit31=0/1 East longitude/West longitude
14	Dtc Num	1	u8	0 means no fault code, non 0 is the number of fault codes
15	Dtc1 ID	4	BYTE	The first fault code ID number: 4 bytes
19	Dtc2 ID	4	BYTE	The second fault code ID number: 4 bytes
23	Dtc3 ID	4	BYTE	The third fault code ID number: 4 bytes
...

Description: One fault code number consists of 4 bytes:

If the protocol type is not 0xF0 (that is, when it is not J1939 protocol), it is system ID, fault byte 1, fault byte 2, fault byte 3,

If the protocol type is 0XF0, the first 3 bytes are the fault code byte, and the 4th byte is the fault code state

4. Appendix II: Samples

4.1 Example of escape function:

```
/******
```

* Function name: void JT_EscapeData(u16 InLen,u8 *InBuf,u16 *OutLen,u8 *OutBuf)

* Explanation: Transliteration

* InBuf : Input needs escapingdata

* InLen : Input needs escapingdatalength

* OutBuf : Output needs escapingdata

* OutLen : Output needs escapingdatalength

```

*****/
void JT_EscapeData (u16 InLen,u8 *InBuf, u16 *OutLen, u8 *OutBuf)
{
    u16 i=0;
    u16 Len=0;
    //escape
    for(i=0;i<InLen;i++)
    {
        if(InBuf[i]==0x7E)
        {
            OutBuf[Len++]=0x7D;
            OutBuf[Len++]=0x02;
        }
        else if(InBuf[i]==0x7D)
        {
            OutBuf[Len++]=0x7D;
            OutBuf[Len++]=0x01;
        }
        else
        {
            OutBuf[Len++]=InBuf[i];
        }
    }
    *OutLen=Len;
}

```

4.2 Examples of Inversion Functions:

```

/*****
* Function name: void JT_UnEscapeData (u16 InLen,u8 *InBuf,u16 *OutLen,u8 *OutBuf)
* Explain: Enter data that needs to be inverted, and output the original data that has been inverted
* InBuf    : Input requires escapedata
* InLen    : Input requires escapedatalength
* OutBuf   : Input requires escapedata
* OutLen   : Input requires escapedatalength
*****/

```

```

void JT_UnEscapeData (u16 InLen,u8 *InBuf,u16 *OutLen,u8 *OutBuf)
{
    u16 i=0;
    u16 ValidPos=0;
    if(InBuf[0]!=0x7E)
        return 0;

    OutBuf[ValidPos++]=0x7E;
    for(i=1;i<InLen;i++)
    {
        if(InBuf[i]==0x7D)
        {
            if(InBuf[i+1]==0x01)
            {
                OutBuf[ValidPos++]=0x7D;
            }
        }
    }
}

```

```

        i++;
    }
    else if(InBuf[i+1]==0x02)
    {
        OutBuf[ValidPos++]=0x7E;
        i++;
    }
    else return 0;
}
else
{
    OutBuf[ValidPos++]=InBuf[i];
}
if(InBuf[i]==0x7E)
{
    break;
}
}
if(i==InLen)
    return 0;
*OutLen=ValidPos;
return (i+1);
}

```

4.3 [0200]Position data analytics

4.4 [0900]Transparent uplink data analytics

4.5 [8300]Text message data analytics

5.1 Appendix III

Appendix A Communication Protocol between Vehicle Terminal and External Device

A.1 device

A.1.1 Host

Host Should be consistent JT/T 794

A.1.2 Slave

The slave includes various point-to-point serial communication external devices, such as a degree display, an intelligent peripheral, a fuel quantity detecting device, and a collision roll detecting device.

A. 2 Protocol

B. A. 2. 1 Frame format definition

The frame format followed by communication between all slaves and Host is shown in Table A.1.

Table A.1 Frame Format

Identification position	Check code	version number	Manufacturer number	Peripheral type number	Command type	User data	Identification position
1 byte	1 byte	2 byte	2 byte	1 byte	1 byte	n byte	1 byte

The content Description of Table A. 1 is as follows:

a) The identification position: is represented by 0x7e. If the check code, the message header, and the message body appear 0x7e, the escaping process is performed. The deflation rule definition is as follows:

- b) 0x7e \longleftrightarrow 0x7d Followed by a0x02;
- 0x7d \longleftrightarrow 0x7d Followed by a0x01;

The escape process is as follows:

When sending a message: message encapsulation-> calculating and populating Check code-> escape;

When receiving message: escape restore-> verify Check code-> parse message;

Example 1:

Send a data packet with content as 0x30 0x7e 0x08 0x7d 0x55, which is encapsulated as follows: 0x7e 0x30 0x7d 0x02 0x08 0x7d 0x01 0x55 0x7e;b)

Check code: Accumulate sum from the Manufacturer number to the user data, and then take the accumulated low 8position as the Check code:

Example 2:

The accumulated sum is 0x1388, then the check code is 0x88:

- c)Version number: identifies the version of the communication protocol;
- d)Manufacturer number:Peripheral slave manufacturer code;
- e)Peripheral type number: The unique type number of each peripheral. The peripheral interface driver used for Host is different from the data sent by the peripheral: the peripheral type number is shown in Table A.2.;
- f)Command type: The information type of the peripheral interaction between the peripheral and the host. The command type is divided into two categories: general protocol and proprietary protocol. The general protocol mainly includes the basic, required, and common information interaction type of the slave and the host. The proprietary protocol is the definition of each type of peripheral and Host-specific information interaction type: command type see table: A. 3;
- g)User data: refers to the data exchanged between the peripheral and the host in addition to the above parts of the mountain specific business function customization content;

h)The data of the communication frame adopts the human-side (hi-endian) representation..

Table A.2 Peripheral type numbering table

Peripheral type	number
Industry Information Terminal	0x01
Adjust degrees display screen	0x02
Vehicle navigation display screen	0x03
Oil Detector	0x04
Accelerated degrees detector	0x05
Anti-theft alarm	0x06
Port Multipliers	0x07
Load Detector	0x08
Passenger Flow Detector	0x08
General Sensor	0x0A

Table A. 3 Command Type Table

Protocol type	Business function type	Command type
Peripheral general protocol	Power on indication/response	0x01
	Link inquiry/response	0x02
	Peripheral power control/response	0x03
	Query the peripheral version of the wood number information	0x04
	Reserved	0x05-0x3F
Special agreement	Proprietary functional service protocols for various slave peripherals	0x40-0Xff

A. 2. 2Addition rules for peripheral protocols

The addition and modification of peripheral protocols should follow the following rules:

- a) The same function sends and responds to the protocol using the same command type;
- b) For a peripheral with more command types, when adding a new command type, try to reduce the command type by using variable parameters..

A. 3General protocol Description

A. 3. 1 Power-on instruction from aircraft

See Table A.4 for on-board instructions.

A.4 Slave Electricity Indicator

Step	Command type	description	User data	Data direction
1	01H	Power-on Indicator Response		Down
2	01H	Power on indication		Upstream

A. 3: 2 Peripheral link interrogation

Peripheral link interrogation instructions are shown in Table A.5..

Table A. 5 Peripheral Link Interrogation Instruction List

Step	Command type	description	User data	Data direction
1	02H	Link inquiry	During link maintenance, the high position byte is first, the low position byte is after; the high byte Unit is minutes (min), the low byte unit is seconds (s); the recommended link inquiry time is 15s-30s; After the timeout expires, Host will log out of the registration of the slave.	Down
2	02H	Link inquiry response		Upstream

A. 3. 3Slave power control

Slave power control Instructions see table A. 6

Table A. 6Slave power control indicator

Step	Command type	description	User data	Data direction
1	03H	Slave power control	Control type:0x00—Slave exits power saving mode: 0x01—Slave enters power saving mode	Down
2	03H	Slave power control response	Response type: 0x01 operation succeeded; 0x02 one operation failed (the slave cannot enter the power saving mode or exit the power saving mode because of special circumstances)	Upstream

5.2 Appendix B Message Comparison Table

The message comparison table of terminal communication and protocol is shown in Table B.1.

able B.1 message comparison table

SN	Message body name	Message ID	SN	Message body name	Message ID
1	Terminal universal response	0x0001	23	Information service	0x8304
2	Platform universal response	0x8001	24	Call back	0x8400
3	Terminal Heartbeat	0x0002	25	Set up the phone book	0x8401
4	Terminal registration	0x0100	26	Vehicle control	0x8500
5	Terminal registration response	0x8100	27	Vehicle control response	0x0500
6	Terminal log off	0x0101	28	Setting round area	0x8600

7	Terminal authentication	0x0102	29	Delete Circular region	0x8601
8	Setting terminal parameter	0x8103	30	Setting rectangle area	0x8602
9	Query terminal parameters	0x8104	31	Delete Rectangular area	0x8603
10	Query terminal parameters response	0x0104	32	Setting polygon area	0x8604
11	Terminal control	0x8105	33	Delete Polygon region	0x8605
12	Position info reporting	0x0200	34	Route setting	0x8606
13	Position info query	0x8201	35	Delete Route	0x8607
14	Position info query response	0x0201	36	Data Acquisition of Driving Recorder command	0x8700
15	Temporary position Tracker control	0x8202	37	Travel Recorder Data Reporting	0x0700
16	Text message sending	0x8300	38	Parameter Delivery of Travel Recorder command	0x8701
17	Event setup	0x8301	39	Electronic waybill reporting	0x0701
18	Incident report	0x0301	40	Collection and reporting of driver identity information	0x0702
19	Question Issued	0x8105	41	Multimedia Event Information Upload	0x0800
20	Question response	0x0302	42	Multimedia data upload	0x0801
21	Information On-demand menu settings	0x8303	43	Multimedia data upload response	0x8800
22	Information On-demand/cancel	0x0303	44	Camera immediately Shooting command	0x8801
45	Storage multimedia data retrieval	0x8802	51	Data Compressed report	0x0901
46	Store multimedia data retrieval response	0x0803	52	Platform RSA public key	0x8A00
47	Store multimedia data upload	0x8803	53	Terminal RSA public key	0x0A00
48	Recording begins command	0x8804	54	Platform down Message Reserved	0x8F00-0x8fff
49	Data Downward pass through	0x8900	55	Terminal Upstream Message Reserved	0x0F00-0x0fff
50	Data Upstream Penetrate	0x0900			