Road transport vehicle satellite positioning system

Beidou compatible vehicle terminal communication protocol technical specifications

GNSS sy stem for operating vehicles

— General specifications for the communication protocol and data format of BD compatible vehicle terminal

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Preface

This specification supplements and improves JT / T 808-2011 "Road Transport Vehicle Satellite Positioning System Terminal Communication Protocol and Data Format". Compared with JT / T 8 0 8-2011 , in addition to editorial modifications, the main technical changes are as follows:

——Modified the description of 5.2 "Maintenance of Connection" in Communication Connection ;

process description of 7.8.1 "Collecting Driver Identity Information Data" in the protocol classification has been modified ;

——Added the process description of 7.12 "Subcontracting Message" in the protocol classification;

——Amended the data format, the original 8.4 Terminal Registration, 8.8 Setting Terminal Parameters, 8.12 Location Information Report, 8.23 Text Information Delivery, 8.2 8 Setting Circular Area, 8.36 Driving Record Data Collection Command, 8.37 Driving Record Data Upload ,8.38 Driving record parameters Data download command, 8.40 Driver identity information collection and reporting, 8.41 Multimedia event information upload, 8.42 Multimedia data upload, 8.43 Multimedia data upload response, 8.46 Storage multimedia data retrieval response, 8.49 Data downstream transparent transmission, 8.50 Data upstream transparent transmission etc. Chapters Content;

——Added data format, 8.4 Supplementary transmission of subpackage request, 8.11 Query specified terminal parameters, 8.14 Query terminal attributes, 8.15 Query terminal attribute response, 8.16 issuance of terminal upgrade package, 8.17 terminal upgrade result notification, 8.22 manual confirmation of alarm message, 8.47 on Report driver identity information request, 8.49 batch upload of positioning data, 8.50 CAN bus data upload, 8.55 camera immediate shooting 12 commands including command response, 8.60 single stored multimedia data retrieval and upload command, and the affected chapter and table numbers were adjusted;

——Modified the contents of Table A.2 Peripheral Type Number Table and Table A.3 Command Type Table in Appendix A;

- Added Appendix A, A.3.4 Querying slave version number information, A.3.5 Slave self-test, A.3.6 Slave firmware update, A.3.7 Query peripheral attributes, A.4.1 Road Transport Certificate IC card authentication request, A.4.2 Road Transport Certificate IC card reading result notification, A.4.3 Card Unplug notification , A.4.4 Actively trigger reading of communication protocol instructions between terminal hosts and peripherals such as IC cards;

contents corresponding to the above modifications in the message comparison table in Appendix B have been modified .

This specification is proposed by the Ministry of Transport of the People's Republic of China .

This specification was drafted by: China Communications and Information Center .

Road transport vehicle satellite positioning system

Terminal communication protocol and data format

1 Scope

This specification specifies the communication protocol and data format between the Beidou compatible vehicle terminal of the road transport vehicle satellite positioning system (hereinafter referred to as the terminal) and the supervision/monitoring platform (hereinafter referred to as the platform), including protocol basis, communication connection, message processing, Protocol classification and description and data format.

This specification applies to communications between Beidou-compatible vehicle-mounted terminals and platforms of road transport vehicle satellite positioning systems.

2 Normative reference documents

The following documents are essential for the application of this document. For dated reference documents, only the dated edition is cited. applies to this document . For undated referenced documents, the latest version (including all amendments) applies to this document.

GB / T 226 0 Administrative division code of the People's Republic of China

GB / T 19056 Automotive driving recorder

JT / T 415-2 006 Cataloging and Coding Rules for Road Transport E-Government Platform

JT / T 794 Technical requirements for on-board terminals of satellite positioning systems for road transport vehicles

3 Terms and definitions , abbreviations

3.1 Terms and definitions

The following terms and definitions apply to this document.

3.1.1 _

abnormal data communication link abnormal data communication link

The wireless communication link is disconnected or temporarily suspended (such as during a call).

3.1.2 _

Registerre gister

The terminal sends a message to the platform to inform it to be installed on a certain vehicle .

3.1.3 _

Unregister _

The terminal sends a message to the platform to inform it to be removed from the vehicle where it is installed.

3.1.4 _

Authentication _

When the terminal connects to the platform, it sends a message to the platform to allow the

platform to verify its identity.

3.1.5 _

location reporting strategy location reporting strategy

Timed , interval reporting or a combination of both.

3.1.6 _

location reporting program location reporting program

Rules for determining periodic reporting intervals based on relevant conditions .

3.1.7 _

Turning point supplementary pass additional itional points report while turning

The terminal sends a location information report message when it determines that the vehicle is turning. The sampling frequency is not less than 1Hz , and the car azimuth angle change rate is not less than 15. /s , and last for at least 3s .

3.1.8 _

answering strategy

the terminal to answer incoming calls automatically or manually.

3.1.9 _

SMS text alarmSMS text alarm

The terminal sends text messages via SMS when alarming.

3.1 .10

event itemevent item

Event items are preset by the platform to the terminal and consist of event codes and event names. The driver operates when encountering the corresponding event. The terminal triggers event reporting to be sent to the platform.

3.2 Abbreviations

The following abbreviations apply to this document.

APN - access point name (access point name)

GZIP - A GNU free software file compression program (GNUzip)

LCD - liquid crystal display

RSA - an asymmetric cryptographic algorithm (by Ron Rivest , Adi Shamirh , Len Developed by Adleman , named Names from three)

SMS - short message service

TCP - transmission control protocol

TTS - text to speech UDP - user datagram

VSS - vehicle speed sensor proto col)

sensor)

4 Basis of Agreement

4.1 Communication methods

The communication method used in the protocol should comply with the relevant regulations in JT/T 794. The communication protocol uses TCP or UDP . The platform As the server side, the terminal acts as the client. When the data communication link is abnormal, the terminal can use SMS messages to line of communication.

4.2 Data types

The data types used in protocol messages are shown in Table 1 :

surface 1 data type

type of data	Description and requirements
BYTE _	Unsigned single-byte integer (byte, 8 bits)
WORD _	Unsigned double-byte integer (word, 16 bits)
DWORD _	Unsigned four-byte integer (double word, 32 bits)
BYTE [n] _	n bytes
BCD [n] _	8421 code, n bytes
S TRING	GBK encoding , if there is no data, leave it blank

4.3 Transmission rules

The protocol uses big-endian network byte order to transfer words and double words.

The agreement is as follows:

——Byte (BYTE) transmission convention: transmitted in the form of byte stream;

——Word (WORD) transmission convention: transmit the high eight bits first , then the low eight bits;

——Double word (DW O RD) transmission convention: transmit the high 24 bits first, then the high 16 bits, and then the high eight bits, The lower eight bits are passed last .

4.4 Message composition

4.4.1 Message structure

Each message consists of identification bit, message header, message body and check code. The message structure diagram is shown in Figure 1 :

Identification bit	message header	message body	Check code	Identification bit

picture 1Message structure diagram

4.4. 2 Identification bit

use 0x7e means that if 0x7e appears in the check code, message header and message body , it must be escaped. Escape The rules are defined as follows:

0 x7e <————> 0x7d followed by 0x02;

0 x 7 d <— ————> 0x7d is followed by 0x01.

The escaping process is as follows:

When sending a message: Message encapsulation -> Calculate and fill the check code -> Escape;

When receiving a message : escape and restore -> verify the check code -> parse the message.

Example :

Sending a data packet with the content of 0x30 0x7e 0x08 0x7d 0x55 is encapsulated as follows: 0x7e 0x30 7d 0x02 0x08 0x7d

0x01 0x550x7e . _ _ _

4. 4.3 Message header

2 for details of the message header content :

Table 2 Message header content

start byte	Field	type of data	Description and requirements
0	Message ID	WORD _	
2	Message body properties	WORD _	The message body attribute format structure diagram is shown in Figure 2
4	Terminal mobile phone number	BCD [6]	Convert according to the mobile phone number of the terminal itself after installation. Mobile phone number is less than 12 digit, then add the number in front, the mainland mobile phone number adds the number 0 , Hong Kong and Macao Taiwan adds digits according to its area code.
1 0	Message serial number	WORD _	in order of sending
1 2	Message package encapsulation item		If the relevant flag bit in the message body attribute determines the message sub-packaging processing, then this item has content, otherwise there is no such item.

The message body attribute format structure diagram is shown in Figure 2 :

15	14	13	12	1 1	10	9	8	7	6	5	4	3	2	1	0
reserve		Subco ntract	Data encryption method			Message body length									

figure 2 Message body attribute format structure diagram

Data encryption method:

——bit 10 ~ bit 12 are data encryption flags ;

——When these three bits are all 0 , it means that the message body is not encrypted ;

——When the 10th bit is 1 , it means that the message body is encrypted by RSA algorithm;

—Other reservations.

Subcontracting :

13th bit in the message body attribute is 1 , it means that the message body is a long message and will be sent in packets. The specific packet information

The information is determined by the message packet encapsulation item; if bit 13 is 0 , there is no message packet encapsulation item field in the message header. The contents of the message package encapsulation items are shown in Table 3 :

Table 3 Contents of message package encapsulation items

start byte	Field	type of data	Description and requirements
0	Total number of message packets	WORD _	number of packets after the message is subpackaged
2	Packet serial number	WORD _	Start from 1

4.4 .4 Check code

The check code starts from the message header and is XORed with the next byte until the byte before the check code, which occupies one byte.

5 communication connection

5.1 Establishment of connection

between the terminal and the platform can use TCP or UDP . The terminal should establish a connection with the platform as soon as possible after resetting. After the connection is established, a terminal authentication message is immediately sent to the platform for authentication.

5.2 Maintenance of connection

the connection is established and terminal authentication is successful, in the absence of normal data packet transmission, the terminal should periodically send Sends a terminal heartbeat message. After receiving it, the platform sends a platform general response message to the terminal. The sending period is specified by the terminal parameters.

5.3 Disconnection of connection

Both the platform and the terminal can actively disconnect according to the TCP protocol, and both parties should actively determine whether the TCP connection is disconnected. How the platform determines that the TCP connection is disconnected:

--according to The TCP protocol determines that the terminal actively disconnects;

——The terminal with the same identity establishes a new connection, indicating that the original connection has been disconnected ;

——No messages from the terminal, such as terminal heartbeat, are received within a certain period of time.

the terminal determines that the TCP connection is disconnected:

--according to The TCP protocol determines that the platform actively disconnects;

——The data communication link is disconnected ;

——The data communication link is normal, but no response has been received after the number of retransmissions has been reached.

6Message processing

6.1 TCP and UDP message processing

6.1.1 Messages sent by the platform owner

All messages sent by the platform require terminal responses. Responses are divided into general responses and special responses, which are coordinated by specific functions. decision . After the sender times out waiting for a response, it should resend the message. The response timeout and number of retransmissions are determined by platform parameters Specify that the calculation formula for the response timeout after each retransmission is shown in formula (1) :

$$T_{N+1} = T_N \times (N+1) \quad \ldots\ldots\ldots\ldots (1)$$

the formula :

T_{N+1} - response timeout after each retransmission ;

T_N - the previous response timeout;

N —— Number of retransmissions.

6.1.2 Messages sent by the terminal host

6.1.2.1 Data communication link is normal

When the data communication link is normal, all messages sent by the terminal require the platform to respond. The responses are divided into general responses and specialized responses. The response is determined by each specific functional protocol. After the terminal times out waiting for a response, it should resend the message. response timeout and The number of retransmissions is specified by the terminal parameters, and the response timeout after each retransmission is calculated according to formula (1). For terminal sending The key alarm message, if no response is received after the number of retransmissions is reached, it should be saved. I will send other messages later The saved key alarm message must be sent before sending the message .

6.1.2.2 Data communication link abnormality

the data communication link is abnormal, the terminal should save the location information report message that needs to be sent. in data communication link Once normal is restored , send the saved message immediately.

6. 2 SMS message processing

the terminal communication mode is switched to the SMS message mode of the GSM network, the PDU eight-bit encoding method is used. Messages exceeding 140 bytes should be subcontracted in accordance with the SMS service specification G SM 03.40 of the GSM network.

SMS The message response, retransmission and storage mechanisms are the same as 6.1 , but the response timeout and number of retransmissions should be as shown in Table 10 Related setting value processing of parameter ID 0x0006 and 0x0007 .

7Protocol classification

7. 1 Overview

The following describes the protocol by functional classification. Unless otherwise specified, TCP is used by default. way of communication. Vehicle-mounted terminal and See Appendix A for the communication protocol of external devices . See Appendix B for the message comparison table of message names and message IDs in the protocol .

7.2 Terminal management protocols

7.2.1 Terminal registration/ logout

When the terminal is not registered, it should first register. After successful registration, the terminal will obtain the authentication code and save it. The authorization code is used when logging in to the terminal. Before the vehicle needs to remove or replace the terminal, the terminal should perform a logout operation, cancel the terminal and Vehicle correspondence.

If the terminal chooses to send terminal registration and terminal deregistration messages via SMS, the platform should send terminal registration messages via SMS. The registration response is used to reply to the terminal registration, and the platform general response is sent via SMS to reply to the terminal deregistration .

7.2.2 Terminal authentication

the terminal is registered, every time it establishes a connection with the platform, it should be authenticated immediately. Before the authentication is successful, the terminal shall not send any other information.

authenticates by sending a terminal authentication message , and the platform replies with a platform general response message.

7.2.3 Set/query terminal parameters

The platform sets terminal parameters by sending a set terminal parameter message, and the terminal replies with a terminal general response message. Platform passed A query terminal parameter message is sent to query the terminal parameters, and the terminal replies with a query terminal parameter response message. under different network standards Terminals should support some parameters unique to their respective networks.

7.2.4 Terminal control

The platform controls the terminal by sending terminal control messages, and the terminal replies with a terminal general response message.

7.3 Location and alarm protocols

7.3.1 Location information reporting

The terminal periodically sends location information reporting messages according to parameter settings .

According to parameter control, the terminal can send a position information report message when it determines that the vehicle is turning.

7.3.2 Location information query

The platform queries the current location information of the designated vehicle-mounted terminal by sending a location information query message, and the terminal replies with the location information. Query response message.

7.3.3 Temporary position tracking control

/ stops location tracking by sending temporary location tracking control messages , before location tracking requires the terminal to stop Periodic reporting, reporting at the time interval specified in the message. The terminal replies with a terminal general response message.

7.3.4 Terminal alarm

the terminal determines that the alarm conditions are met, it sends a location information report message and sets a corresponding alarm flag in the location report message. Log, the platform can handle alarms by replying to the platform's general response message .

each alarm type, see the description in the location information report message body. The alarm flag remains until the alarm condition is lifted. After the alarm condition is lifted, the location information reporting message should be sent immediately and the corresponding alarm flag should be cleared.

7.4 Information protocols

7.4.1 Text message delivery

The platform delivers messages by sending text messages and notifies the driver in a designated manner. The terminal replies with a terminal general response message.

7.4.2 Event settings and reporting

The platform sends the event setting message and sends the event list to the terminal for storage. The driver can proceed after encountering the corresponding event. Enter the event list interface to make a selection. After selection, the terminal sends an event report message to the platform.

The event setting message requires the terminal to reply to the terminal general response message.

The event report message requires the platform to reply to the platform general response message.

7.4.3 Questions

The platform sends messages by sending questions, and sends questions with candidate answers to the terminal. The terminal displays them immediately, and the driver After selection, the terminal sends a question and response message to the platform.

To send a message to ask questions, the terminal needs to reply with a terminal general response message.

7.4.4 Information on demand

The platform sends the information on-demand menu setting message and sends the information on-demand item list to the terminal for storage. The driver can

Select on-demand / cancel the corresponding information service through the menu. After selection, the terminal sends an information on-demand / cancel message to the platform.

After the information service is on-demand, you will regularly receive information service messages from the platform, such as news, weather forecast, etc. The information on-demand menu setting message requires the terminal to reply to the terminal general response message.

Information on demand / cancellation messages require the platform to reply with a platform general response message.

Information service messages require the terminal to reply with a terminal general response message.

7.5 Telephone protocols

7.5.1 Call back

By sending a callback message, the platform requires the terminal to call back the specified phone number and specify whether to press the monitor button. mode (the terminal does not turn on the speaker) .

A callback message requires the terminal to reply with a terminal general response message.

7.5.2 Set up phone book

The platform sets the phone book for the terminal by sending a set phone book message. This message requires the terminal to reply with a terminal general response. information.

7.6 Vehicle control protocols

the platform requires the terminal to control the vehicle according to specified operations. Immediately after the terminal receives Reply to the terminal general response message. The terminal then controls the vehicle and replies with a vehicle control response message based on the result.

7.7 Vehicle management agreement

The platform sends messages such as setting a circular area, setting a rectangular area, setting a polygonal area, and setting a route. Make region and line settings on the end . The terminal determines whether the alarm conditions are met based on area and line attributes. Alarms include overspeed alarms. For alarms, entry/exit area / route alarms and insufficient / excessive road segment travel time alarms, corresponding additional location information should be included in the location information reporting message .

Area or route ID The value range is 1~0 XFFFFFFFF . If the ID set Areas of the same type that already exist in the terminal Or if the route ID is duplicated, the existing one will be updated.

The platform can also delete circular areas, delete rectangular areas, delete polygonal areas, delete routes and other messages. Areas and routes saved on the terminal .

To set / delete area and route messages , the terminal needs to reply to the terminal general response message.

7.8 Information collection protocols

7.8.1 Collect driver identity information data

When the driver starts driving, he inserts the IC card practitioner qualification certificate into the card reading module of the terminal, and the card reading module passes through the sensor switch. After detecting the entry of the card, the authentication request is sent to the terminal through the interface, and the terminal transfers the authentication request data through transparent transmission instructions. Issue it to the road transport certificate IC card certification center, and transparently transmit the certification

results returned by the certification center to the card reading module. Card reader module root Read the IC card practitioner qualification certificate information based on the certification results and upload the result information to the certification center (success and failure information) and the home monitoring center (only read successful information) through the terminal .

When the driver finishes driving, he pulls out the IC card. After the card reading module detects that the card has left through the sensor switch, it will The information is uploaded to the certification center and home monitoring center through the terminal .

7.8.2 Collect electronic waybill data

Terminal collection electronic waybill data upload platform.

7.8.3 Collect driving record data

The platform requires the terminal to upload specified data by sending a driving record data collection command message. This message requires the terminal to upload the specified data. Reply to the driving record data upload message.

7.8.4 Download driving record parameters

The platform downloads the command message by sending the driving record parameters and requires the terminal to upload the specified data. This message requires the terminal to upload the specified data. Reply to the terminal general response message.

7.9 Multimedia protocols

7.9.1 Multimedia event information upload

When the terminal actively shoots or records due to a specific event, it should actively upload multimedia event messages after the event occurs . The information requires the platform to reply with a general response message .

7.9.2 Multimedia data upload

The terminal sends a multimedia data upload message to upload multimedia data. Each complete multimedia data needs to be preceded by additional video recording The location information report message body at that time is called location multimedia data. The platform determines the receiving timeout based on the total number of packets. After all data packets are received or the timeout period is reached, the platform sends a multimedia data upload response message to the terminal, which confirms receipt. to all data packets or require the terminal to retransmit specified data packets.

7.9.3 Camera shoots immediately

The platform issues a shooting command to the terminal by sending a camera immediate shooting command message. This message requires a final reply from the terminal. End-to-end universal response message . If real-time upload is specified, the camera image / video will be uploaded after the terminal shoots it, otherwise the image / video will be stored.

7.9.4 Recording starts

The platform issues a recording command to the terminal by sending a recording start command message. This message requires the terminal to reply to the terminal general Reply message. If real-time upload is specified, the terminal will upload the audio data after recording, otherwise the audio data will be stored .

7.9.5 Retrieval of terminal stored multimedia data and extraction

The platform obtains the status of the terminal's multimedia data storage by sending a stored multimedia data retrieval message. This message requires The terminal replies with a stored multimedia data retrieval response message.

According to the retrieval results , the platform can send a stored multimedia data upload message to require the terminal to upload the specified multimedia Body data, this message requires the terminal to reply with a terminal general response message.

7.10 General data transmission class

Messages that are not defined in the protocol but need to be transmitted in actual use can use data uplink transparent transmission messages and data downlink transparent transmission messages for uplink and downlink data exchange.

The terminal can use GZIP The compression algorithm compresses longer messages and uses data compression to report messages for upload.

7.11 Encryption protocols

If encrypted communication is required between the platform and the terminal, the RSA public key cryptography system can be used. The platform sends the platform RSA public The key message informs the terminal of its own RSA public key, and the terminal replies with the terminal RSA public key message, and vice versa.

7.12 Subcontracting messages

When messages are sent in subpackages, the subpackaged messages should use continuously increasing serial numbers.

In response to subcontracted messages , if there is no special response instruction, the receiver can use one pass for all subcontracted messages. Use a reply , or use a common reply for each subpackaged message and use the result field (success/failure) to inform the sender Whether all subcontracting messages are received correctly. When all subpackage messages are not received correctly, the receiver can use the method of retransmitting the subpackage request. The request command asks the sender to retransmit missing subpacket messages. The sender should use the original message to retransmit the subpacket in the retransmission packet ID list. Once sent, the retransmitted packet will be exactly the same as the original packet message .

8 Data format

8.1 Terminal general response

Message ID : 0x0001 .

The terminal general response message body data format is shown in Table 4 .

Table 4 Terminal general response message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	the corresponding platform message
2	Reply ID	WORD _	The ID of the corresponding platform message
4	result	BYTE _	0: Success/Confirmation; 1 : Failure; 2: Wrong message; 3: Not supported

8.2 Platform general response

Message ID : 0x8001 .

The platform general response message body data format is shown in Table 5 .

Table 5 Platform general response message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	the corresponding terminal message
2	Reply ID	WORD _	The ID of the corresponding terminal message
4	result	BYTE _	0: Success /confirmation; 1: Failure; 2: Wrong message; 3: Not supported; 4: Alarm processing confirmation;

8.3 Terminal heartbeat

Message ID : 0x0002 .

The terminal heartbeat data message body is empty.

8.4 Supplementary transmission of subcontracting request

Message ID : 0x8003.

The data format of the supplementary transmission subpackage request message body is shown in Table 6 .

Table 6 Supplementary transmission subpackage request message body data format

start byte	Field	type of data	Description and requirements
0	Original message serial number	WORD _	The message serial number corresponding to the first packet of the original message requested to be retransmitted.
4	Total number of retransmission packets	BYTE _	n
5	Retransmission packet ID list	BYTE [2* n]	The retransmitted packet sequence numbers are arranged in sequence, such as "Packet ID1 Packet ID2... Packet IDn".

Note: The response to this message should use the original message to resend the packet in the retransmission packet ID list, which is the same as the original packet. The message is exactly the same.

8.5 Terminal registration

Message ID : 0x0100.

The terminal registration message body data format is shown in Table 7 .

Table 7 Terminal registration message body data format

start byte	Field	type of data	Description and requirements
0	Provincial ID	WORD _	Indicates the province where the vehicle where the terminal is installed is located. 0 is reserved and defaulted by the platform. Recognize value . The provincial ID adopts the administrative division code specified in GB/T 2260. The first two of the six digits of the code .
2	City and county ID	WORD _	Indicates the city and county where the vehicle where the terminal is installed is located. 0 is reserved. Take the default value. City and county IDs adopt the lines specified in GB/T 2260 The last four digits of the six digits of the administrative division code .
4	Manufacturer ID	BYTE [5]	5 bytes, terminal manufacturer encoding
9	Terminal model	BYTE [20]	20 bytes. This terminal model is defined by the manufacturer. The number of digits varies. When enough, add "0 X00".
2 9	Terminal ID	BYTE [7]	7 bytes, consisting of uppercase letters and numbers, this terminal ID is made by The manufacturer defines it by himself. When there are insufficient digits, "0X00" is added.
3 6	license plate color	BYTE _	The license plate color shall be in accordance with 5.4.12 of JT/T415-2006. When no cards are placed, the value is 0.
3 7	vehicle identification	S TRING	When the license plate color is 0, it indicates the vehicle V N ; Otherwise, it means the motor vehicle license plate issued by the public security and traffic management department .

8.6 Terminal registration response

Message ID : 0x8100.

The terminal registration response message body data format is shown in Table 8 .

Table 8 Terminal registration response message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	corresponding terminal registration message
2	result	BYTE _	0: Success; 1: The vehicle has been registered; 2: The vehicle is not in the database; 3: The terminal has been registered; 4: The terminal does not exist in the database

3	Authentication code	S TRING	field is only available after success

8.7 Terminal logout

Message ID : 0x0003 .

The terminal logout message body is empty .

8.8 Terminal authentication

Message ID : 0x0102.

The terminal authentication message body data format is shown in Table 9 .

Table 9 Terminal authentication message body data format

start byte	Field	type of data	Description and requirements
0	Authentication code	S TRING	The terminal reports the authentication code after reconnecting

8.9 Set terminal parameters

Message ID : 0x8103.

The data format of the message body for setting terminal parameters is shown in Table 10 .

Table 1 0 Terminal parameter message body data format

start byte	Field	type of data	Description and requirements
0	Total number of parameters	BYTE _	
1	Parameter list		The parameter format is shown in Table 11

Table 11 Terminal parameter item data format

Field	type of data	Description and requirements
Parameter ID	DWORD _	See Table 12 for parameter ID definition and description.
Parameter length	BYTE _	
Parameter value		If it is a multi-valued parameter, multiple parameter items with the same ID are used in the message, such as dispatch center power phone number

Table 12 Definition and description of each parameter item in terminal parameter setting

Parameter ID	type of data	Description and requirements
0x0001 _ _ _	DWORD _	Terminal heartbeat sending interval, unit is seconds (s)
0x0002 _ _ _	DWORD _	TCP message response timeout, unit is seconds (s)
0x0003 _ _ _	DWORD _	TCP message retransmission times
0x0004 _ _ _	DWORD _	UDP message response timeout, unit is seconds (s)

Parameter ID	type of data	Description and requirements
0x0005 _ _ _	DWORD _	UDP Number of message retransmissions
0x0006 _ _ _	DWORD _	SMS message response timeout , unit is seconds (s)
0x0007 _ _ _	DWORD _	SMS Number of message retransmissions
0x0008-0x000F _		reserve
0x0010 _ _ _	S TRING	Primary server APN, wireless communication dial-up access point. If the network standard is CDMA, then this is PPP dial-up number
0x0011 _ _ _	S TRING	Main server wireless communication dial-up user name
0x0012 _ _ _	S TRING	Primary server wireless communication dial-up password
0x0013 _ _ _	S TRING	Main server address, IP or domain name
0x0014 _ _ _	S TRING	Backup server AP N , wireless communication dial-up access point
0x0015 _ _ _	S TRING	Backup server wireless communication dial-up user name
0x0016 _ _ _	S TRING	Backup server wireless communication dial-up password
0x0017 _ _ _	S TRING	Backup server address, IP or domain name
0x0018 _ _ _	DWORD _	Server TCP port
0x0019 _ _ _	DWORD _	Server UDP port
0x001A _ _ _	S TRING	Road Transport Certificate IC card authentication main server IP address or domain name
0x001B _ _ _	DWORD _	Road Transport Certificate IC Card Authentication Main Server TCP Port
0x001C _ _ _	DWORD _	Road Transport Certificate IC Card Authentication Main Server UDP Port
0x001D _ _ _	S TRING	Road Transport Certificate IC card authentication backup server IP address or domain name, the port is the same as the main server
0x001E -0x001F		reserve
0x0020 _ _ _	DWORD _	Location reporting strategy , 0: regular reporting; 1: regular interval reporting; 2: regular and regular interval reporting
0x0021 _ _ _	DWORD _	Location reporting scheme, 0: based on ACC status; 1: based on login status and ACC status, Determine the login status first, and then based on the ACC status if logged in
0x0022 _ _ _	DWORD _	Driver not logged in reporting time interval, unit is seconds (s), >0
0x0023-0x0026 _	DWORD _	reserve
0x0027 _ _ _	DWORD _	Reporting interval during sleep, unit is seconds (s), > 0
0x0028 _ _ _	DWORD _	Reporting interval during emergency alarm, unit is seconds (s), >0
0x0029 _ _ _	DWORD _	Default time reporting interval, unit is seconds (s), >0

Parameter ID	type of data	Description and requirements
0x002A - 0x002B _ _ _ _ _	DWORD _	reserve
0x002C _ _ _	DWORD _	Default distance reporting interval, unit is meter (m), >0
0x002D _ _ _	DWORD _	The driver is not logged in and reports the distance interval in meters (m), >0
0x002E _ _ _	DWORD _	Report distance interval when sleeping, unit is meter (m), > 0
0x002F _ _ _	DWORD _	emergency alarm , unit is meter (m), >0
0x0030 _ _ _	DWORD _	Inflection point compensation angle, < 180
0x0031 _ _ _	WORD _	Electronic fence radius (illegal displacement threshold), unit is meters
0x00032-0x003F		reserve
0x0040 _ _ _	S TRING	Monitoring platform phone number
0x0041 _ _ _	S TRING	Reset phone number. You can use this phone number to call the terminal to reset it.
0x0042 _ _ _	S TRING	Restore the factory settings phone number. You can use this phone number to call the terminal to restore the terminal. Factory settings
0x0043 _ _ _	S TRING	Monitoring platform SM S phone number
0x0044 _ _ _	S TRING	Receive terminal SMS text alarm number
0x0045 _ _ _	DWORD _	Terminal call answering policy, 0: answer automatically; 1: answer automatically when ACC is ON, manually when ACC is OFF answer automatically
0x0046 _ _ _	DWORD _	The maximum call time for each call, the unit is seconds (s), 0 means calls are not allowed, 0xFFFFFFF F means not limited
0x0047 _ _ _	DWORD _	in the month , in seconds (s), 0 means calls are not allowed, 0xFFFFFFFF means not limited
0x0048 _ _ _	S TRING	Monitor phone number
0x0049 _ _ _	S TRING	Supervision platform privileged SMS number
0x004A - 0x004F _ _ _ _ _		reserve
0x0050 _ _ _	DWORD _	The alarm mask word corresponds to the alarm flag in the location information report message. If the corresponding bit is 1, the corresponding alarm is masked.
0x0051 _ _ _	DWORD _	Alarm sending text SMS switch, corresponding to the alarm mark in the location information reporting message, If the corresponding bit is 1, text SMS will be sent when the corresponding alarm occurs.
0x0052 _ _ _	DWORD _	The alarm shooting switch corresponds to the alarm flag in the location information report message, and the corresponding bit is 1 The camera will record the corresponding alarm
0x0053 _ _ _	DWORD _	The alarm shooting storage flag corresponds to the alarm flag in the location information report message, corresponding to If the bit is 1 , the photos taken during the corresponding alarm will be stored, otherwise they will be uploaded in real time.

0x0054 _ _ _	DWORD _	The key flag corresponds to the alarm flag in the location information report message. If the corresponding bit is 1, The corresponding alarm is a key alarm

Parameter ID	type of data	Description and requirements
0x0055 _ _ _	DWORD _	Maximum speed in kilometers per hour (km / h)
0x0056 _ _ _	DWORD _	Overspeed 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 , in seconds (s)
0x0059 _ _ _	DWORD _	Minimum rest time, unit is seconds (s)
0x005A _ _ _	DWORD _	Maximum parking time, unit is seconds (s)
0x005B _ _ _	WORD _	Speed alarm and early warning difference, unit is 1/10Km/h
0x005C _ _ _	WORD _	Fatigue driving warning difference, unit is second (s), >0
0x005D _ _ _	WORD _	Collision alarm parameter settings: b 7 -b0: Collision time, unit 4ms; b 15- b 8: Collision acceleration, unit 0.1g, setting range: 0-79, default is 1 0.
0x005E _ _ _	WORD _	Rollover alarm parameter settings: Rollover angle, unit 1 degree, default is 30 degrees.
0x005F - 0x0063		reserve
0x0064 _ _ _	DWORD _	Timing photo control, see Table 13
0x0065 _ _ _	DWORD _	Fixed distance photo control, see Table 14
0x0066-0x006F _		reserve
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 _		
0x0080 _ _ _	DWORD _	Vehicle odometer reading, 1 /10km
0x0081 _ _ _	WORD _	Provincial ID where the vehicle is located
0x0082 _ _ _	WORD _	City ID where the vehicle is located
0x0083 _ _ _	S TRING	Motor vehicle license plate issued by the public security and traffic management department
0x0084 _ _ _	BYTE _	License plate color , in accordance with 5.4.12 of JT/T415-2006

Parameter ID	type of data	Description and requirements
0x0090 _ _ _	BYTE _	GNSS positioning mode is defined as follows: bit0, 0: disable GPS positioning, 1: enable GPS positioning ; bit 1, 0 : disable Beidou positioning, 1: enable Beidou positioning; bit 2 , 0: disable GLONASS positioning, 1: enable GLONASS positioning; bit 3, 0: Disable Galileo positioning, 1: Enable Galileo positioning.
0x0091 _ _ _	BYTE _	GNSS Baud rate, defined as follows: 0x00 : 4800 ; 0x01: 9600 ; 0x02 : 19200 ;0x03:38400; 0x04 :57600 ; 0x05:115200.
0x0092 _ _ _	BYTE _	GNS S module is defined as follows: 0x00 : 500ms ; 0x01 : 1000ms (default) ; 0x02: 2000ms; 0x03: 3000ms ; 0x04 : 4000ms .
0x0093 _ _ _	DWORD _	GNSS Module detailed positioning data collection frequency, unit is second, default is 1.
0x0094 _ _ _	BYTE _	GNS S module detailed positioning data upload method: 0 x 00, local storage, no upload (default value); 0 x 0 1 , upload according to time interval; 0 x 02, upload according to distance interval; 0 x 0 B , upload according to the accumulated time, and automatically stop uploading after the transmission time is reached; 0x0C, upload according to the cumulative distance, and automatically stop uploading after reaching the distance; 0 x 0 D , upload according to the accumulated number of items, and automatically stop uploading when the number of uploaded items is reached.
0x0095 _ _ _	DWORD _	GNS S module detailed positioning data upload settings: When the upload method is 0x01, the unit is seconds; When the upload method is 0x02, the unit is meters; When the upload mode is 0x0B, the unit is seconds; When the upload method is 0x0C, the unit is meters; the upload mode is 0x0D, the unit is bar.
0 x 0 100	DWORD _	CAN bus channel 1 collection time interval (ms), 0 means no collection
0x0101 _ _ _	WORD _	CAN bus channel 1 upload time interval (s), 0 means no upload
0x0102 _ _ _	DWORD _	CAN bus channel 2 collection time interval (ms), 0 means no collection
0x0103 _ _ _	WORD _	CAN bus channel 2 upload time interval (s), 0 means no upload
0x0110 _ _ _	BYTE [8]	CAN Bus ID separate collection settings: bit63-bit32 indicates the collection time interval (m s) of this ID, 0 indicates no collection; Bit 31 represents the CAN channel number, 0: CAN1, 1: CAN2; Bit 30 indicates the frame type, 0: standard frame, 1: extended frame; Bit 29 indicates the data collection method, 0 : original data, 1: calculated value of the collection interval; bit 28 - bit0 represents the CAN bus ID.

0x0111-0x01FF _	BYTE [8]	Used for other CAN bus ID separate acquisition settings

Parameter ID	type of data	Description and requirements
0xF000-0xFFFF		Custom

surface 13 Timing photo control bit definition

Bit	definition	Description and requirements
0	Camera channel 1 timing photo switch sign	0 : Not allowed; 1: Allowed
1	Camera channel 2 timing photo switch sign	0 : Not allowed; 1: Allowed
2	Camera channel 3 timing photo switch sign	0 : Not allowed; 1: Allowed
3	Camera channel 4 timing photo switch sign	0 : Not allowed; 1: Allowed
4	Camera channel 5 timing photo switch sign	0 : Not allowed; 1: Allowed
5-7	reserve	
8	Camera channel 1 scheduled photo storage mark	0 : Storage; 1: Upload
9	Camera channel 2 scheduled photo storage mark	0 : Storage; 1: Upload
1 0	Camera channel 3 scheduled photo storage mark	0 : Storage; 1: Upload
1 1	Camera channel 4 scheduled photo storage mark	0 : Storage; 1: Upload
1 2	Camera channel 5 scheduled photo storage mark	0 : Storage; 1: Upload
1 3-15	reserve	
1 6	Timing time unit	0: seconds, when the value is less than 5 seconds, the terminal will process it as 5 seconds; 1 point.
1 7-31	scheduled time interval	Executed after receiving parameter settings or restarting

surface 14 Fixed distance photography control bit definition

Bit	definition	Description and requirements
0	Camera channel 1 Fixed distance camera switch sign	0 : Not allowed; 1: Allowed
1	Camera channel 2 Fixed distance camera switch sign	0 : Not allowed; 1: Allowed
2	Camera channel 3 Fixed distance camera switch sign	0 : Not allowed; 1: Allowed
3	Camera channel 4 fixed distance camera switch sign	0 : Not allowed; 1: Allowed
4	Camera channel 5 fixed distance camera switch sign	0 : Not allowed; 1: Allowed
5-7	reserve	
8	Camera channel 1 Fixed distance photo storage mark	0 : Storage; 1: Upload

9	Camera channel 2 Fixed distance photo storage mark	0 : Storage; 1: Upload

1 0	Camera channel 3 fixed distance photo storage mark	0 : Storage; 1: Upload
1 1	Camera channel 4 fixed distance photo storage mark	0 : Storage; 1: Upload
1 2	Camera channel 5 Fixed distance photo storage mark	0 : Storage; 1: Upload
1 3-15	reserve	
1 6	fixed distance unit	0: Meter , when the value is less than 100 meters, the terminal treats it as 100 meters; 1 : kilometers.
1 7-31	fixed distance interval	Executed after receiving parameter settings or restarting

8.10 Query terminal parameters

Message ID : 0x8104 .

The message body for querying terminal parameters is empty.

8.11 Query specified terminal parameters

Message ID : 0x8106.

for querying specified terminal parameters is shown in Table 15. The terminal responds with the 0x0104 command. Table 15 Query the message body data format of specified terminal parameters

start byte	Field	type of data	Description and requirements
0	Total number of parameters	BYTE _	The total number of parameters is n
1	Parameter ID list	BYTE [4* n]	Parameters are arranged in order, such as "Parameter ID 1 Parameter ID 2... ...Parameter IDn ” .

8.12 Query terminal parameter response

Message ID : 0x0104.

The data format of the query terminal parameter response message body is shown in Table 16 .

Table 16 Query terminal parameter response message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	The corresponding terminal parameter queries the serial number of the message.
2	Number of response parameters	BYTE _	
3	Parameter list		The format and definition of parameter items are shown in Table 10

8.13 Terminal control

Message ID : 0x8105.

The terminal control message body data format is shown in Table 17 .

Table 1 7 Terminal control message body data format

start byte	Field	type of data	Description and requirements
0	Command word	BYTE _	The terminal control command word description is shown in Table 1 8
1	Command parameters	S TRING	The command parameter format is described later. Each field uses Separated by half-width ";" , each STRING field is first encoded in GBK process and then compose the message

surface 18Terminal control command word description

Command word	Command parameters	Description and requirements
1	The command parameter format is shown in Table 19	Over-the-air upgrades . Parameters are separated by half-width semicolons. The command is as follows: "URL address; dial point Name; dial-up user name; dial-up password; address; TCP port; UDP port; manufacturer ID; hardware Version ; firmware version; time limit for connecting to the specified server." If a parameter has no value, leave it blank.
2	The command parameter format is shown in Table 19	Control the terminal to connect to the specified server. Parameters are separated by half-width semicolons. The control instructions are as follows : "Connection control; supervision platform authentication code; dial-up point name; dial-up user name; dial-up password; location Address; TCP port; UDP port ; time limit to connect to the specified server." If a parameter has no value, then Leave it empty. If the connection control value is 1, there will be no subsequent parameters.
3	none	Terminal shutdown
4	none	terminal reset
5	none	Restore the terminal to factory settings
6	none	Turn off data communication
7	none	Turn off all wireless communications

Table 19 Command parameter format

Field	type of data	Description and requirements
Connection control	BYTE _	0: Switch to the designated supervision platform server. After connecting to the server, it will enter the emergency state. In this state, only the monitoring platform that issues control instructions can send control instructions including text messages ; 1: Switch back to the original default monitoring platform server and return to normal status.
dial point name	S TRING	Generallyit is server APN, wireless communication dial-up access point. If the network standard is CDMA, then this value Dial number for PPP connection
Dial-up username	S TRING	Server wireless communication dial-up user name
Dial-up password	S TRING	Server wireless communication dial-up password

address	S TRING	Server address, IP or domain name
TCP port	WORD _	Server TCP port
UDP port	WORD _	Server UDP port

Manufacturer ID	BYTE [5]	Terminal manufacturer code
Supervision platform authentication code	S TRING	The authentication code issued by the supervision platform is only used for authentication after the terminal is connected to the supervision platform. The terminal Connect back to the original monitoring platform and use the original authentication code
hardware version	S TRING	The hardware version number of the terminal is determined by the manufacturer .
Firmware version	S TRING	The firmware version number of the terminal is determined by the manufacturer .
URL address	S TRING	Full URL address
Connect to specified service time limit	WORD _	Unit: minute (min) , a value other than 0 indicates that the terminal has received instructions to upgrade or connect to the specified server. Before the subsequent validity period expires, the terminal should be connected back to the original address. If the value is 0 , it means that the pointer is always connected Customized server

8.14 Query terminal properties

Message ID : 0x8107 .

The message body for querying terminal properties is empty.

8.15 Query terminal attribute response

Message ID : 0x0107.

The data format of the query terminal attribute response message body is shown in Table 20 .

Table 20 Query terminal attribute response message body data format

start byte	Field	type of data	Description and requirements
0	terminal type	WORD _	bit 0 , 0: Not applicable to passenger vehicles, 1: Applicable to passenger vehicles; bit 1, 0: not applicable to dangerous goods vehicles, 1: suitable for dangerous goods vehicles; bit 2 , 0: Not applicable to ordinary freight vehicles, 1: Applicable to ordinary freight vehicles; bit 3 , 0: Not applicable to rental vehicles, 1: Applicable to rental vehicles; bit 6 , 0: Does not support hard disk video recording, 1: Supports hard disk video recording; bit 7, 0: all-in-one machine, 1: split machine .
2	Manufacturer ID	BYTE [5]	5 bytes, terminal manufacturer encoding.
7	Terminal model	BYTE [20]	20 bytes. This terminal model is defined by the manufacturer. When there are insufficient digits, Add "0X00" afterwards.
2 7	Terminal ID	BYTE [7]	7 bytes, consisting of uppercase letters and numbers, this terminal ID is specified by the manufacturer Define it yourself . When there are insufficient digits, add "0X00".
42	Terminal SIM card ICCID	BCD [10]	Terminal SIM card ICCID number
5 2	Terminal hardware version number length	BYTE _	n
5 3	Terminal hardware version number	S TRING	
53+n	Terminal firmware version number length	BYTE _	m

54+n	Terminal firmware version number	S TRING	

54+ n+m	GNSS module properties	BYTE _	bit0, 0: GPS positioning is not supported, 1: GPS positioning is supported ; bit 1 , 0: Beidou positioning is not supported, 1: Beidou positioning is supported; bit 2, 0 : GLONASS positioning is not supported, 1: GLONASS positioning is supported; bit 3 , 0: Galileo positioning is not supported, 1: Galileo positioning is supported.
55+ n+m	Communication module properties	BYTE _	bit 0, 0: GPRS communication is not supported, 1: GPRS communication is supported; bit 1, 0: CDMA communication is not supported, 1: CDMA communication is supported; bit 2, 0: TD - SCDMA communication not supported , 1: Support TD-SCDMA communication; bit 3 , 0: Do not support WCDMA communication, 1: Support WCDMA communication; bit 4, 0 : CDMA2000 communication is not supported, 1: CDMA2000 communication is supported. bit 5 , 0: TD - LTE communication is not supported, 1: TD - LTE communication is supported; bit 7, 0: Other communication methods are not supported, 1: Other communication methods are supported.

8.16 Deliver terminal upgrade package

Message ID : 0x8108 .

The data format of the message body of the terminal upgrade package delivered is shown in Table 21 . Use a general response to the command terminal to confirm whether the upgrade package data is received correctly.

surface 21 Message body data format of the terminal upgrade package delivered

start byte	Field	type of data	Description and requirements
0	Upgrade type	BYTE _	0: Terminal, 12: Road Transport Certificate IC card reader, 52: Beidou Satellite positioning module
1	Manufacturer ID	BYTE [5]	Manufacturer number
6	Version number length	BYTE _	n
7	version number	S TRING	
7 +n	Upgrade packet length	DWORD _	The unit is BYTE
11+n	Upgrade data package		

8.17 Terminal upgrade result notification

Message ID : 0x0108.

The terminal uses this command to notify the monitoring center after the upgrade is completed and reconnected. The data format of the terminal upgrade result notification message body is shown in Table 22 .

Table 22 Terminal upgrade result notification message body data format

start byte	Field	type of data	Description and requirements

0	Upgrade type	BYTE _	0: Terminal, 12: Road Transport Certificate IC card reader, 52: Beidou Satellite positioning module
1	Upgrade results	BYTE _	0: Success, 1: Failure , 2: Cancel

8.18 Location information reporting

Message ID : 0x0200.

The location information report message body consists of basic location information and a list of additional location information items. The message structure diagram is shown in Figure 3 :

Basic location information	List of location extensions

image 3 Location report message structure diagram

The location additional information item list is composed of each location additional information item, or may not be included, and is determined based on the length field in the message header. Certainly .

The data format of basic location information is shown in Table 23 .

Table 23 Basic location information data format

start byte	Field	type of data	Description and requirements
0	Alarm sign	DWORD _	See Table 24 for the definition of alarm flag bits.
4	state	DWORD _	See Table 25 for status bit definitions
8	latitude	DWORD _	Latitude value in degrees multiplied by 10 raised to the sixth power, to the nearest million One-tenth of a degree
1 2	longitude	DWORD _	in degrees multiplied by 10 raised to the sixth power, to the nearest million One-tenth of a degree
1 6	elevation	WORD _	Altitude above sea level in meters (m)
1 8	speed	WORD _	1 /10km/h
2 0	direction	WORD _	0-3 59, true north is 0, clockwise
twenty one	time	BCD [6]	YY - MM - DD - hh - mm - ss (GMT +8 time, later in this standard and times are in this time zone)

Table 24 Alarm flag bit definition

Bit	definition	Processing Instructions
0	1: Emergency alarm, triggered after touching the alarm switch	Cleared after receiving response
1	1: Speed alarm	The flag remains until the alarm condition is removed
2	1: Fatigue driving	The flag remains until the alarm condition is removed
3	1: Danger warning	Cleared after receiving response
4	1: GNSS module failed	The flag remains until the alarm condition is removed
5	1 : GNSS antenna is not connected or cut off	The flag remains until the alarm condition is removed
6	1: GNS S antenna short circuit	The flag remains until the alarm condition is removed
7	1: Terminal main power supply is undervoltage	The flag remains until the alarm condition is removed
8	1: The terminal main power supply is powered off.	The flag remains until the alarm condition is removed

Bit	definition	Processing Instructions
9	1 : Terminal LCD or display failure	The flag remains until the alarm condition is removed
1 0	1 : TTS module failure	The flag remains until the alarm condition is removed
1 1	1: Camera failure	The flag remains until the alarm condition is removed
1 2	1: Road transport certificate IC card module failure	The flag remains until the alarm condition is removed
1 3	1: Speed warning	The flag remains until the alarm condition is removed
1 4	1 : Fatigue driving warning	The flag remains until the alarm condition is removed
1 5-17	reserve	
1 8	1: Accumulated driving overtime on the day	The flag remains until the alarm condition is removed
1 9	1: Overtime parking	The flag remains until the alarm condition is removed
2 0	1: Entering and exiting the area	Cleared after receiving response
twenty one	1: In and out routes	Cleared after receiving response
twenty two	1: The road section travel time is insufficient/too long	Cleared after receiving response
twenty three	1 : Route deviation alarm	The flag remains until the alarm condition is removed
twenty four	1 : Vehicle VSS failure	The flag remains until the alarm condition is removed
2 5	1 : Abnormal vehicle fuel level	The flag remains until the alarm condition is removed
2 6	1: Vehicle stolen (via vehicle immobilizer)	The flag remains until the alarm condition is removed
2 7	1 : Illegal ignition of vehicle	Cleared after receiving response
2 8	1 : Illegal displacement of vehicle	Cleared after receiving response
2 9	1: Collision warning	The flag remains until the alarm condition is removed
3 0	1: Rollover warning	The flag remains until the alarm condition is removed
3 1	1: Illegal door opening alarm (when the terminal does not set the area, it will not Determined to open the door illegally)	Cleared after receiving response

Note: In the event of an alarm or early warning, location information must be reported immediately

surface 25 status bit definition

Bit	state
0	0: ACC off; 1: ACC on
1	0: Not positioned; 1: Positioned
2	0: North latitude; 1: South latitude

twenty three

Bit	state
3	0: East longitude; 1: West longitude
4	0: Operation status; 1 : Out of service status
5	0: The latitude and longitude have not been encrypted by the security plug-in; 1: The latitude and longitude have been encrypted by the security plug-in.
6-7 _	reserve
8-9 _	00: Empty; 01: Half loaded; 10: Reserved; 11: Fully loaded (Can be used to indicate the empty and full status of passenger cars , heavy cars and trucks, manual input or sensors Obtain)
1 0	0: The vehicle oil circuit is normal ; 1: The vehicle oil circuit is disconnected
1 1	0: Vehicle circuit is normal ; 1: Vehicle circuit is disconnected
1 2	0: Unlock the door; 1 : Lock the door
1 3	0: Door 1 is closed; 1: Door 1 is open (front door)
1 4	0: Door 2 is closed; 1: Door 2 is open (middle door)
1 5	0: Door 3 is closed; 1: Door 3 is open (rear door)
1 6	0 : Door 4 is closed; 1: Door 4 is open (driver's door)
1 7	0 : Door 5 is closed; 1: Door 5 is open (customized)
1 8	0: Not using GPS satellites for positioning; 1: Using GPS satellites for positioning
1 9	0: Beidou satellites are not used for positioning; 1: Beidou satellites are used for positioning.
2 0	GLONASS not used Satellites for positioning; 1: Use GLONASS satellites for positioning
twenty one	0: Galileo is not used Satellites for positioning; 1: Use Galileo satellites for positioning
22-3 1	reserve

Note: Location information needs to be reported immediately when the status changes

The format of location additional information items is shown in Table 26 .

surface 26 position extension information item format

Field	type of data	Description and requirements
Additional information ID	BYTE _	1-255 _
Additional information length	BYTE _	
Additional Information		See Table 27 for additional information definitions

Table 27 Additional information definitions

Additional information ID	Additional information length	Description and requirements
0x01 _ _	4	Mileage, DWORD , 1/10 km, corresponding to the vehicle odometer reading
0x02 _ _	2	Oil volume, WORD , 1/10 L , corresponding to the fuel gauge reading on the vehicle
0x03 _ _	2	obtained by driving record function , WORD, 1/10km/h
0x04 _ _	2	The ID and WORD of the alarm event need to be manually confirmed, counting from 1
0x05-0x10		reserve
0x11 _ _	1or5	speed alarm is shown in Table 28
0x12 _ _	6	Additional information about entry and exit area/route alarms is shown in Table 2 9
0x13 _ _	7	Additional information about the insufficient/excessive road section driving time alarm is shown in Table 30.
0x14-0x24		reserve
0x25 _ _	4	Extended vehicle signal status bit, the definition is shown in Table 31
0x2 A	2	IO status bits, see Table 32 for definitions
0x2B _	4	Analog quantity, bit0-15, AD0; bit 16-31, AD 1.
0x30 _ _	1	BYTE , wireless communication network signal strength
0x31 _ _	1	BYTE , number of GNSS positioning satellites
0x E 0	Follow-up message length	Subsequent custom message length
0xE1-0xFF		Custom area

Table 28 Overspeed alarm additional information message body data format

start byte	Field	type of data	Description and requirements
0	location type	BYTE _	0 : No specific position; 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

Table 29 In/ out area / route alarm additional information message body data format

start byte	Field	type of data	Description and requirements
0	location type	BYTE _	1 : circular area; 2 : Rectangular area; 3 : Polygonal area; 4 : Route
1	Area or line ID	DWORD _	
5	direction	BYTE _	0: enter; 1 : out

Table 30 Insufficient / excessive route travel time alarm additional information message body data format

start byte	Field	type of data	Description and requirements

0	Road segment ID	DWORD _	
4	Road segment driving time	WORD _	The unit is seconds (s)
6	result	BYTE _	0: Insufficient; 1: Too long

surface 31 extended vehicle signal status bit

Bit	definition
0	1: Low beam signal
1	1: High beam signal
2	1 : Right turn signal signal
3	1 : Left turn signal
4	1: Braking signal
5	1: Reverse gear signal
6	1: Fog light signal
7	1 : position light
8	1: Speaker signal
9	1: Air conditioner status
1 0	1: Neutral signal
1 1	1: Retarder working
1 2	1 : ABS work
1 3	1: Heater working
1 4	1: Clutch status
1 5-31	reserve

surface 32 IO status bits

Bit	definition
0	1 : Deep sleep state
1	1: Sleep state
2-15	reserve

8.19 Location information query

Message ID : 0x8201 .

The location information query message body is empty.

8.20 Location information query response

Message ID : 0x0201.

of the location information query response message body is shown in Table 33 .

Table 33 Location information query response message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	the corresponding location information query message
2	Location information reporting		For location information reporting, see 8.12

8.21 Temporary position tracking control

Message ID : 0x8202 .

The data format of the temporary position tracking control message body is shown in Table 34 .

Table 34 Temporary location tracking control message body data format

start byte	Field	type of data	Description and requirements
0	time interval	WORD _	The unit is seconds (s), 0 stops tracking. Stop tracking without bringing a successor Field
2	Location tracking validity period	DWORD _	The unit is seconds (s). After receiving the location tracking control message, the terminal sends a location report according to the time interval in the message before the expiration date.

8.22 Manual confirmation of alarm message

Message ID: 0x8203

the manual confirmation alarm message body is shown in Table 35 .

Table 3 5 Manual confirmation alarm message data format

start byte	Field	type of data	illustrate
0	Alarm message serial number	WORD _	that requires manual confirmation, 0 means all alarm types of this alarm type information
2	Manual confirmation alarm type	DWORD _	See Table 36 for definitions

Table 36 Manual confirmation alarm type definition

Bit	definition
0	1 : Confirm emergency alarm;
1-2 _	reserve
3	1 : Confirm danger warning;

4-1 9	reserve
2 0	1 : Confirm the alarm in and out of the area;
twenty one	1 : Confirm the alarm for entry and exit routes;
twenty two	1 : Confirm that the road section driving time is insufficient/process alarm;
23-26	reserve
2 7	1 : Confirm the illegal ignition alarm of the vehicle;
2 8	1 : Confirm illegal vehicle displacement alarm;
29-3 1	reserve

8.23 Text message delivery

Message ID : 0x8300.

The message body data format for text message delivery is shown in Table 37 .

surface 37 Text message delivery message body data format

start byte	Field	type of data	Description and requirements
0	logo	BYTE _	the text information flag bits is shown in Table 38
1	text message	S TRING	Maximum length is 1024 bytes, encoded by GBK

surface 38 Text information flag meaning

Bit	logo
0	1 : Urgent
1	reserve
2	1: Terminal monitor display
3	1 : Terminal TTS reading
4	1: Advertising screen display
5	0: Center navigation information , 1: CAN fault code information
6-7 _	reserve

8.24 Event Settings

Message ID : 0x8301 .

The event setting message body data format is shown in Table 39 .

Table 3 9 Event settings message body data format

start byte	Field	type of data	Description and requirements

0	Setting type	BYTE _	0: Delete all existing events on the terminal, without subsequent bytes after this command; 1 : update event; 2 : Additional events; 3 : Modify event; 4: Delete certain events, and then there is no need to include event content in the event items.
1	Total number of settings	BYTE _	
2	event item list		The data format of event items is shown in Table 40.

surface 40 event items form data format

start byte	Field	type of data	Description and requirements
0	Event ID	BYTE _	If the terminal already has an event with the same ID, it will be overwritten.
1	Event content length	BYTE _	Subsequent event content field byte length
2	Event content	S TRING	Event content, encoded by GBK

8.25 incident report

Message ID : 0x0301.

The event report message body data format is shown in Table 41 .

Table 4 1 Event report message body data format

start byte	Field	type of data	Description and requirements
0	Event ID	BYTE _	

8.26 Distribution of questions

Message ID : 0x8302 .

The data format of the message sent by the question is shown in Table 42 .

Table 4 2 Question about the data format of the message body sent

start byte	Field	type of data	Description and requirements
0	logo	BYTE _	the question delivery flag is shown in Table 43.
1	Question content length	BYTE _	Problem field byte length
2	question	S TRING	Question text, encoded by GBK, length N
2 +N	Candidate answer list		The candidate answer message composition is shown in Table 4 4

surface 43 Questions: Issue flag definition

Bit	logo
0	1 : Urgent

1	reserve
2	reserve
3	1 : Terminal TTS reading
4	1: Advertising screen display
5-7	reserve

Table 4 Message composition for sending candidate answers to questions 4

start byte	Field	type of data	Description and requirements
0	Answer ID	BYTE _	
1	Answer content length	WORD _	Answer content field length in bytes
3	Answer content	S TRING	Answer content, encoded by GBK

8.27 Questions and Answers

Message ID : 0x0302.

The question and response message body data format is shown in Table 45 .

Table 4 5 Question and response message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	The serial number of the message sent to the corresponding question
2	Answer ID	BYTE _	The answer ID attached to the question issuance

8.28 Information on demand menu settings

Message ID : 0x8303.

of the information on-demand menu setting is shown in Table 46 .

Table 46 Information on-demand menu setting message body data format

start byte	Field	type of data	Description and requirements
0	Setting type	BYTE _	0: Delete all terminal information items; 1 : Update menu; 2 : Additional menu; 3: Modify menu
1	Total number of information items	BYTE _	
2	List of information items		The data format of information on-demand information items is shown in Table 47

surface 47 Information on demand information item composition data format

start byte	Field	type of data	Description and requirements

0	Information type	BYTE _	If the terminal already has information items of the same type, it will be overwritten.
1	Message name length	WORD _	Information name field length in bytes
3	Information name	S TRING	Processed by GB K encoding

8.29 Information on demand/cancellation

Message ID : 0x0303.

The data format of the message on-demand/cancellation message body is shown in Table 48 .

Table 48 Message on-demand / cancel message body data format

start byte	Field	type of data	Description and requirements
0	Information type	BYTE _	
1	On demand/cancel sign	BYTE _	0: Cancel; 1: On-demand

8.30 Information Services

Message ID : 0x8304.

The information service message body data format is shown in Table 49 .

Table 4 9 Information service message body data format

start byte	Field	type of data	Description and requirements
0	Information type	BYTE _	
1	Message length	WORD _	
3	information	S TRING	Encoded by GBK

8.31 Callback

Message ID : 0x8400.

The data format of the callback message body is shown in Table 50 .

Table 5 0 Phone callback message body data format

start byte	Field	type of data	Description and requirements
0	logo	BYTE _	0: Ordinary call; 1 : Monitoring
1	telephone number	S TRING	Maximum length is 20 bytes

8.32 Set up phone book

Message ID : 0x8401 .

See Table 51 for setting the phonebook message body data format .

Table 5 1 Set the phonebook message body data format

start byte	Field	type of data	Description and requirements

0	Setting type	BYTE _	0: Delete all contacts stored on the terminal ; 1: Indicates updating the phone book (deleting all contacts in the terminal) and append the contacts in the message); 2 : Indicates adding a phone book; 3: Indicates modifying the phone book (indexed by contacts)
1	Total number of contacts	BYTE _	
2	Contact item		phone book contact items is shown in Table 52

Table 5 2 Phone book contact item data format

start byte	Field	type of data	Description and requirements
0	logo	BYTE _	1: Incoming call; 2: Outgoing call; 3: Incoming/outgoing call
1	Number length	BYTE _	
2	telephone number	S TRING	The length is n
2 +n	Contact length	BYTE _	
3 +n	Contact person	S TRING	Encoded by GBK

8.33 Vehicle control

Message ID : 0x8500 _ _

The vehicle control message body data format is shown in Table 53 .

Table 5 3 Vehicle control message body data format

start byte	Field	type of data	Description and requirements
0	control flag	BYTE _	the control command flag bit is shown in Table 54

Table 5 4 Control command flag data format

Bit	logo
0	0: Unlock the door; 1 : Lock the door
1-7	reserve

8.34 Vehicle control response

Message ID : 0x0500.

The vehicle control response message body data format is shown in Table 55 .

surface 55 vehicle control response message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	corresponding vehicle control message
2	Location information reporting message body		Determine whether the control is successful or not based on the corresponding status bits

8.35 Set circular area

Message ID : 0x8600.

See Table 56 for setting the circular area message body data format .

Note : This message protocol supports cycle time range. If you want to limit 8:30-18:00 every day, set the start/end time It is: 00-00-00-08-30-00/00-00-00-18-00-00, and so on for others .

surface 56 Set the circular area message body data format

start byte	Field	type of data	Description and requirements
0	Set properties	BYTE _	0 : update area; 1 : Additional area; 2: Modify area
1	Total area	BYTE _	
2	area item		The data format of the area item content of the circular area is shown in Table 57

surface 57 Area item content data format of circular area

start byte	Field	type of data	Description and requirements
0	Area ID	DWORD _	
4	Area properties	WORD _	See Table 58 for the definition of regional attributes.
6	Center point latitude	DWORD _	Latitude value in degrees multiplied by 10 raised to the sixth power, to the nearest million One-tenth of a degree
1 0	Center point longitude	DWORD _	in degrees multiplied by 10 raised to the sixth power, to the nearest million One-tenth of a degree
1 4	radius	DWORD _	The unit is meters (m), the road segment from this turning point to the next turning point
1 8	start time	BCD [6]	YY - MM - DD - hh-mm-ss, if the area attribute 0 bit is 0, there is no such Field
twenty four	End Time	BCD [6]	YY - MM - DD - hh-mm-ss, if the area attribute 0 bit is 0, there is no such Field
3 0	top speed	WORD _	Km / h , if the area attribute 1 bit is 0, there is no this field
3 2	Speeding duration	BYTE _	The unit is seconds (s) (similar expression, modified as before), if the regional attribute If bit 1 is 0, there is no such field.

surface Definition of area attributes for 58 areas

Bit	logo
0	1: According to time
1	1 : Speed limit
2	1: Alarm the driver when entering the area
3	1: Alarm the platform when entering the area
4	1: Alarm the driver when leaving the area

5	1: Alarm the platform when leaving the area
6	0: North latitude; 1: South latitude
7	0: East longitude; 1: West longitude
8	0: Allow opening the door; 1 : Prohibit opening the door
9-13 _	reserve
1 4	0: Enter the area to turn on the communication module; 1: Enter the area to turn off the communication module
1 5	0: Do not collect GNSS detailed positioning data when entering the area ; 1: Collect GNSS detailed positioning data when entering the area.

8.36 Delete circular area

Message ID : 0x8601 .

The data format of the deleted circular area message body is shown in Table 59 .

surface 59 Delete circular area message body data format

start byte	Field	type of data	Description and requirements
0	Number of areas	BYTE _	The number of areas included in this message, no more than 125, more than 125 It is recommended to use multiple messages, 0 means to delete all circular areas
1	Area ID1	DWORD _	
	… …	DWORD _	
	Area IDn	DWORD _	

8.37 Set rectangular area

Message ID : 0x8602 .

See Table 60 for setting the rectangular area message body data format .

surface 60Set the rectangular area message body data format

start byte	Field	type of data	Description and requirements
0	Set properties	BYTE _	0: update area; 1 : Additional area; 2: Modify area
1	Total area	BYTE _	
2	area item		The area item data format of the rectangular area is shown in Table 61

Table 6 1 Area item data format of rectangular area

start byte	Field	type of data	Description and requirements
0	Area ID	DWORD _	
4	Area properties	WORD _	See Table 58 for the definition of regional attributes.
6	Latitude of upper left point	DWORD _	Latitude value in degrees multiplied by 10 raised to the sixth power, to the nearest million One-tenth of a degree

1 0	Upper left point longitude	DWORD _	Latitude value in degrees multiplied by 10 raised to the sixth power, to the nearest million One-tenth of a degree
1 4	Latitude of lower right point	DWORD _	Latitude value in degrees multiplied by 10 raised to the sixth power, to the nearest million One-tenth of a degree
1 8	lower right point	DWORD _	Latitude value in degrees multiplied by 10 raised to the sixth power, to the nearest million One-tenth of a degree
twenty two	start time	BCD [6]	Time range setting in the same circular area
2 8	End Time	BCD [6]	Time range setting in the same circular area
3 4	top speed	WORD _	The unit is kilometers per hour (km/ h). If the 1 bit of the regional attribute is 0, then There is no such field
3 6	Speeding duration	BYTE _	The unit is seconds (s) . If the area attribute 1 bit is 0, there is no such field.

8.38 Delete rectangular area

Message ID : 0x8603.

The data format of the message body of the deleted rectangular area is shown in Table 62 .

surface 62Delete rectangular area message body data format

start byte	Field	type of data	Description and requirements
0	Number of areas	BYTE _	The number of areas included in this message, no more than 125, more than 125 It is recommended to use multiple messages, 0 means to delete all rectangular areas
1	Area ID1	DWORD _	
	… …	DWORD _	
	Area IDn	DWORD _	

8.39 Set polygon area

Message ID : 0x8604.

See Table 63 for setting the polygon area message body data format .

surface 63Set the polygon area message body data format

start byte	Field	type of data	Description and requirements
0	Area ID	DWORD _	
4	Area properties	WORD _	See Table 58 for the definition of regional attributes.
6	start time	BCD [6]	Time range setting in the same circular area
1 2	End Time	BCD [6]	Time range setting in the same circular area
1 8	top speed	WORD _	The unit is kilometers per hour (km/ h). If the 1 bit of the regional attribute is 0, then There is no such field
2 0	Speeding duration	BYTE _	The unit is seconds (s) . If the area attribute 1 bit is 0, there is no such field.
twenty one	The total number of vertices in the region	WORD _	
twenty three	vertex item		The vertex item data format of the polygon area is shown in Table 64

surface Vertex item data format for 64- polygon region

start byte	Field	type of data	Description and requirements
0	vertex latitude	DWORD _	in degrees multiplied by 10 raised to the 6th power, to the nearest millionth of a degree
4	vertex longitude	DWORD _	in degrees multiplied by 10 raised to the 6th power, to the nearest millionth of a degree

8.40 Delete polygonal areas

Message ID : 0x8605.

of the deleted polygon area message body is shown in Table 65 .

surface 65Delete polygon area message body data format

start byte	Field	type of data	Description and requirements
0	Number of areas	BYTE _	The number of areas included in this message, no more than 125, more than 125 It is recommended to use multiple messages, 0 means to delete all rectangular areas
1	Area ID1	DWORD _	
	… …	DWORD _	
	Area IDn	DWORD _	

8.41 Set route

Message ID : 0x8606.

Table 66 for the data format of the route message body .

Table 6 6 Set route message body data format

start byte	Field	type of data	Description and requirements
0	Route ID	DWORD _	
4	route properties	WORD _	The route attribute data format is shown in Table 6 7
6	start time	BCD [6]	Time range setting in the same circular area
1 2	End Time	BCD [6]	Time range setting in the same circular area
1 8	Total number of turning points on the route	WORD _	
2 0	Inflection point term		route turning point items is shown in Table 68

surface 67Route attribute data format

Bit	logo
0	1: According to time
1	reserve

2	1: Alarm the driver when entering the route
3	1: Alarm the platform when entering the route
4	1: Alarm the driver when leaving the route
5	1: Alarm the platform when leaving the route
6-15 _	reserve

surface 68 route turning point item data format

start byte	Field	type of data	Description and requirements
0	Inflection point ID	DWORD _	
4	Road segment ID	DWORD _	
8	Turning point latitude	DWORD _	Latitude value in degrees multiplied by 10 raised to the 6th power, to the nearest millionth of a degree
1 2	Inflection point longitude	DWORD _	Latitude value in degrees multiplied by 10 raised to the 6th power, to the nearest millionth of a degree
1 6	road section width	BYTE _	The unit is meters (m), the road segment from this turning point to the next turning point
1 7	Road segment properties	BYTE _	The road segment attribute data format is shown in Table 6 9
1 8	Road segment driving too long threshold	WORD _	The unit is seconds (s) . If the 0 bit of the road segment attribute is 0, there is no such field.
2 0	Road segment undertravel threshold	WORD _	The unit is seconds (s) . If the 0 bit of the road segment attribute is 0, there is no such field.
twenty two	road section maximum speed	WORD _	The unit is kilometers per hour (km / h). If bit 1 of the road segment attribute is 0, there is no such field.
twenty four	Road section speeding duration	BYTE _	The unit is seconds (s) . If bit 1 of the road segment attribute is 0, there is no such field.

surface 69 road segment attribute data format

Bit	logo
0	1: Driving time
1	1 : Speed limit
2	0: North latitude; 1: South latitude
3	0: East longitude; 1: West longitude
4-7 _	reserve

8.42 Delete route

Message ID : 0x8607 .

The data format of the deleted route message body is shown in Table 70 .

Table 7 0 Delete route message body data format

start byte	Field	type of data	Description and requirements

0	Number of routes	BYTE _	The number of areas included in this message should not exceed 125. If it is more than 125, it is recommended to use multiple messages. 0 means to delete all routes.
1	Route ID1	DWORD _	
	… …	DWORD _	
	Route IDn	DWORD _	

8.43 Driving record data collection command

Message ID : 0x8700.

the driving record data collection command message body is shown in Table 71 .

Table 71 Driving recorder data collection command message body data format

start byte	Field	type of data	Description and requirements
0	Command word	BYTE _	For the command word list, please refer to the relevant requirements in GB/T 19056
1	data block		the data block content format , please refer to the relevant content in GB/T 19056, including Complete data package required by GB / T 19056, can be empty.

Upload driving record data

Message ID : 0x0700.

of the driving record data upload message body is shown in Table 72 .

Table 72 Travel record data upload message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	the corresponding driving record data collection command message
2	Command word	BYTE _	Corresponding to the command word issued by the platform
3	data block		the data block content format , please refer to the relevant content in GB/T 19056, including Complete data package required by GB / T 19 0 56.

8.45 Driving record parameter download command

Message ID : 0x8701 .

of the driving record parameter download command is shown in Table 73 .

Table 73 Data format of driving recorder parameter download command message body

start byte	Field	type of data	Description and requirements
0	Command word	BYTE _	For the command word list, please refer to the relevant requirements in GB/T 19056
1	data block		the data block content format , please refer to the relevant content in GB/T 19056, including Complete data package required by GB / T 19 0 56.

8.46 Electronic waybill reporting

Message ID : 0x0701.

The data format of the electronic waybill reporting message body is shown in Table 74 .

surface 74 Electronic waybill reporting message body data format

start byte	Field	type of data	Description and requirements
0	Electronic waybill length	DWORD _	
4	Electronic waybill content		Electronic waybill data package

8.47 Request to report driver identification information

Message ID : 0x8702.

for reporting driver identity information is empty.

8.48 Collection and reporting of driver identity information

Message ID : 0x0702.

the terminal practitioner qualification certificate IC card is inserted or removed. After receiving the 0x8702 command, use this command answer. The data format of the driver identity information collection and reporting message body is shown in Table 75 .

Table 75 Driver identity information reporting message body data format

start byte	Field	type of data	Description and requirements
0	state	BYTE _	0 x 01: Insert the professional qualification certificate IC card (the driver goes to work) ; 0 x 02: The professional qualification certificate IC card is pulled out (the driver is off work) .
1	time	BCD [6]	Card insertion/removal time, YY-MM-DD- hh - mm - ss ; The following fields are valid and populated only when the status is 0x01.
7	IC Card reading result	BYTE _	0x00 : IC card reading is successful; 0x01 : Card reading failed because the card key authentication failed; 0 x 02: Card reading failed because the card has been locked; 0 x 03: Card reading failed because the card was pulled out; 0x04 : Card reading failed due to data verification error. The following fields are valid only when the IC card reading result is equal to 0x00.
8	Driver name length	BYTE _	n
9	driver name	S TRING	driver name
9+n	Professional qualification certificate code	S TRING	The length is 20 bits, any missing bits are padded with 0x00.
29+ n	Issuing authority name length	BYTE _	m
30+n	issuing authority	S TRING	Name of the professional qualification certificate issuing agency

30+ n+m	Certificate validity period	BCD [4]	YYYYMMDD _

8.49 Batch upload of positioning data

Message ID: 0x0704.

The data format for batch uploading of positioning data is shown in Table 76 .

Table 7 6 Positioning data batch upload data format

start byte	Field	type of data	illustrate
0	data items	WORD _	Number of location report data items included , >0
1	location data type	BYTE _	0: Batch reporting of normal positions, 1: Supplementary reporting of blind spots
2	Location reporting data items		See table 77 for definition

Table 7 7 Location reporting data item data format

start byte	Field	type of data	illustrate
0	Location report data body length	WORD _	Location report data body length, n
2	Location reporting data body	BYTE [n] _	For definition , see 8.12 Location Information Reporting

8.50 CAN bus data upload

Message ID: 0x0705.

The CAN bus data upload data format is shown in Table 78 .

Table 78 CAN bus data upload data format

start byte	Field	type of data	illustrate
0	data items	WORD _	Number of CAN bus data items included , >0
2	CAN Bus data reception time	BCD [5]	No. Receiving time of 1 CAN bus data, hh-mm-ss-msms
8	CAN bus data item		See table 79 for definition

surface 79 CAN bus data item data format

start byte	Field	type of data	illustrate
0	CAN ID	BYTE [4]	bit31 represents the CAN channel number, 0: CAN1, 1: CAN 2 ; Bit 30 indicates the frame type , 0: standard frame, 1: extended frame; bit 29 indicates the data collection method, 0: original data, 1: collection The average value of the set interval; bit 28 - bit0 represents the CAN bus ID.
4	CAN DATA	BYTE [8]	CAN data _

8.51 Multimedia event information upload

Message ID : 0x0800 _ _

The multimedia event message upload data format is shown in Table 80 .

Table 80 Multimedia event message upload message body data format

start byte	Field	type of data	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: JPE G ; 1: TIF ; 2: MP 3; 3: WAV ; 4: WMV ; Other reservations
6	Event item encoding	BYTE _	0: Instructions issued by the platform; 1: Timing action; 2: Robbery alarm triggered Send; 3: Collision rollover alarm trigger; 4: Door open to take photo; 5: Door Turn off and take pictures; 6: The door changes from open to closed, and the speed changes from <20 kilometers per hour to over 20 kilometers per hour. After 20 kilometers; 7: Take photos at a fixed distance ; Other reservations
7	Channel ID	BYTE _	

8.52 Multimedia data upload

Message ID : 0x0801.

The multimedia data upload message body data format is shown in Table 81 .

surface 81 Multimedia data upload message body data format

start byte	Field	type of data	Description and requirements
0	Multimedia ID	DWORD _	>0
4	multimedia type	BYTE _	0 : Image; 1: Audio; 2: Video;
5	Multimedia format encoding	BYTE _	0: JPE G ; 1: TIF ; 2: MP 3; 3: WAV ; 4: WMV ; Other reservations
6	Event item encoding	BYTE _	0: Instructions issued by the platform; 1: Timing action; 2: Robbery alarm triggered Send; 3: Collision rollover alarm trigger; others reserved
7	Channel ID	BYTE _	
8	Location information reporting (0x0200)Message body	BYTE [28]	representing multimedia data
3 6	multimedia packet		

8.53 Multimedia data upload response

Message ID : 0x8800.

The data format of the multimedia data upload response message body is shown in Table 82 .

Table 82 Multimedia data upload response message body data format

start byte	Field	type of data	Description and requirements
0	Multimedia ID	DWORD _	>0, if all data packets are received, there will be no subsequent fields.

4	Total number of retransmission packets	BYTE _	n
5	Retransmission packet ID list	BYTE [2* n]	The retransmitted packet sequence numbers are arranged in sequence, such as "Packet ID1 Packet ID2... Packet IDn".

Note: The response to this message should use the 0x0801 message to resend the subpackage in the retransmission packet ID list, which is exactly the same as the original subpackage message .

8.54 Camera shooting command immediately

Message ID : 0x8801 .

The camera immediate shooting command message body data format is shown in Table 83 .

Table 83 Camera Immediate Shooting Command Message Body Data Format

start byte	Field	type of data	Description and requirements
0	Channel ID	BYTE _	>0
1	shooting order	WORD _	0 means stop shooting; 0 xFFFF Indicates video recording; others indicates the number of photos taken.
3	Photo interval/recording time	WORD _	Seconds, 0 means taking pictures at the minimum interval or recording continuously.
5	Save flag	BYTE _	1 : save; 0 : real-time upload
6	resolutiona	BYTE _	0 x 0 1:320*240; 0x02 : 640 *480 ; 0x03 : 800 *600 ; 0x04 :1024 * 768; 0 x 05:176*1 44;[Qcif]; 0 x 06:352*2 88;[Cif]; 0x07 :704* 288 ;[HALF D1]; 0x08 :704* 576 ;[D1];
7	Image/video quality	BYTE _	1 - 10, 1 represents the minimum quality loss, 10 represents the maximum compression ratio
8	brightness	BYTE _	0-25 5
9	Contrast	BYTE _	0-127 _
1 0	saturation _	BYTE _	0-127 _
1 1	Chroma	BYTE _	0-25 5
[a] If the terminal does not support the resolution required by the system, it will take the closest resolution and upload it.			

8.55 Camera immediate shooting command response

Message ID : 0x0805.

The camera immediate shooting command response message body data format is shown in Table 84 . This command is used to respond to the camera issued by the monitoring center. Header immediately shoots command 0x8801.

Table 84 Camera Immediate Shooting Command Response Data Format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	corresponding to the platform camera immediate shooting command
2	result	BYTE _	0: Success; 1: Failure; 2: The channel is not supported. The following fields are valid only if result=0 .

3	Number of multimedia IDs	WORD _	n , the number of successfully captured multimedia pieces

4	Multimedia ID list	BYTE [4* n]	

8.56 Retrieval of stored multimedia data

Message ID : 0x8802 .

stored multimedia data retrieval message body data is shown in Table 85 .

Note: If not based on time range, set the start time/end time to 00-00-00-00-00-00.

Table 85 Stored multimedia data retrieval message body data format

start byte	Field	type of data	Description and requirements
0	multimedia type	BYTE _	0 : Image; 1: Audio; 2: Video;
1	Channel ID	BYTE _	0 Indicates retrieving all channels of this media type;
2	Event item encoding	BYTE _	0: Instructions issued by the platform; 1: Timing action; 2: Robbery alarm triggered Send; 3: Collision rollover alarm trigger; others reserved
3	start time	BCD [6]	YY - MM - DD - hh-mm-ss
9	End Time	BCD [6]	YY - MM - DD - hh-mm-ss

8.57 Stored multimedia data retrieval response

Message ID : 0x0802.

of the stored multimedia data retrieval response message body is shown in Table 86 .

Table 86 Storage multimedia data retrieval response message body data format

start byte	Field	type of data	Description and requirements
0	Response serial number	WORD _	the corresponding multimedia data retrieval message
2	number of multimedia data items	WORD _	The total number of multimedia data items that meet the search conditions
4	Search terms		The data format of multimedia search items is shown in Table 87

Table 87 Multimedia search item data format

start byte	Field	type of data	Description and requirements
0	Multimedia ID	DWORD _	>0
4	multimedia type	BYTE _	0: Image; 1: Audio ; 2: Video
5	Channel ID	BYTE _	
6	Event item encoding	BYTE _	0: Instructions issued by the platform; 1: Timing action; 2: Robbery alarm triggered Send; 3: Collision rollover alarm trigger; others reserved
7	Location information reporting (0x0200)Message body	BYTE [28]	Basic location information data indicating the starting moment of shooting or recording

8.58 Store multimedia data upload command

Message ID : 0x8803 _ _
for storing multimedia data upload command is shown in Table 88 .

Table 88 Stores multimedia data upload command message body data format

start byte	Field	type of data	Description and requirements
0	multimedia type	BYTE _	0: Image; 1: Audio ; 2: Video
1	Channel ID	BYTE _	
2	Event item encoding	BYTE _	0: Instructions issued by the platform; 1: Timing action; 2: Robbery alarm triggered Send; 3: Collision rollover alarm trigger; others reserved
3	start time	BCD [6]	YY - MM - DD - hh-mm-ss
9	End Time	BCD [6]	YY - MM - DD - hh-mm-ss
1 5	delete flag	BYTE _	0 : keep; 1: delete;

8.59 Recording start command

Message ID : 0x8804 _ _

The recording start command message body data format is shown in Table 89 .

surface 89 Recording start command message body data format

start byte	Field	type of data	Description and requirements
0	recording command	BYTE _	0: Stop recording ; 0x01: Start recording;
1	recording time	WORD _	The unit is seconds (s), 0 means recording all the time
3	Save flag	BYTE _	0: real-time upload; 1 : save
4	Audio sample rate	BYTE _	0: 8K ; 1: 11K ; 2 : 23K; 3: 32K; others reserved

8.60 Single stored multimedia data retrieval and upload command

Message ID : 0x8805 _ _

of the single stored multimedia data retrieval and upload command message body is shown in Table 90 .

Table 9 0 Single stored multimedia data retrieval and upload command message body data format

start byte	Field	type of data	Description and requirements
0	Multimedia ID	DWORD _	>0
4	delete flag	BYTE _	0 : keep; 1: delete;

8.61 Data downlink transparent transmission

Message ID: 0x8900.

The data format of the data downlink transparent transmission message body is shown in Table 91 .

surface 91 data downlink transparent transmission message body data format

start byte	Field	type of data	Description and requirements
0	Transparent message type	BYTE _	transparent transmission message type definition is shown in Table 93
1	Transparent message content		

8.62 Data uplink transparent transmission

Message ID: 0x0900.

the data uplink transparent transmission message body.

surface 92 data uplink transparent transmission message body data format

start byte	Field	type of data	Description and requirements
0	Transparent message type	BYTE _	transparent transmission message type definition is shown in Table 93
1	Transparent message content		

surface 93 transparent message type definition table

Transparent message type	definition	Description and requirements
GNS S module detailed positioning data	0x00 _ _	GNS S module detailed positioning data
Road transport permit IC card information	0x0 B	the road transport certificate IC card information is 64Byte, and the download message is 24 bytes . The timeout time for transparent transmission of road transport certificate IC card authentication is 30 seconds. After timeout , it will not be retransmitted.
Serial port 1 transparent transmission	0x41 _ _	Serial port 1 transparently transmits messages
Serial port 2 transparent transmission	0x42 _ _	Serial port 2 transparent transmission of messages
User-defined transparent transmission	0xF0-0xFF	User-defined transparent message

8.63 Data compression reporting

Message ID : 0x0901.

The data format of the data compression reporting message body is shown in Table 94 .

surface 94 data compression reporting message body data format

start byte	Field	type of data	Description and requirements
0	Compressed message length	DWORD _	
4	Compress message body		The compressed message body is the message that needs to be compressed and has been compressed using the GZIP algorithm. The latest news

8.64 Platform RSA Public Key

Message ID : 0x8A00 .

The platform RSA public key message body data format is shown in Table 95 .

surface 95 platform RSA public key message body data format

start byte	Field	type of data	Description and requirements
0	e	DWORD _	e in platform RSA public key {e,n}
4	n	BYTE [12 8]	RSA n in public key {e,n}

8.65 Terminal RSA public key

Message ID : 0x0A00 .

The terminal RSA public key message body data format is shown in Table 9 6 .

surface 96 terminal RSA public key message body data format

start byte	Field	type of data	Description and requirements
0	e	DWORD _	e in terminal RSA public key {e,n}
4	n	BYTE [12 8]	RSA n in public key {e,n}

Appendix A

(Normative appendix)

Communication protocol between vehicle terminal and external equipment

A.1Equipment _ _

A.1.1Host _ _

The host should comply with JT/T 794.

A.1.2 Slave machine

The slave machine includes various point-to-point serial communication external devices, such as dispatch display , intelligent peripherals, oil level detection device, Collision rollover detection device, etc.

A. 2 Communication protocol

A. 2.1 Frame format definition

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

Table A.1 Frame format

Identification bit	Check code	version number	Manufacturer number	Peripheral type number	Command type	User data	Identification bit
1 byte	1 byte	2 by te	2 by te	1 byte	1 byte	n byt e	1 byte

Table A.1 is explained as follows:

a) Identification bit: represented by 0x7e . If 0x7e appears in the check code, message header and message body , it must be converted Escape processing, the escaping rules are defined as follows:

0 x7e <————> 0x7d followed by 0x02;

0 x7d <————> 0x7d is followed by 0x01;

The escaping process is as follows:

When sending a message: Message encapsulation -> Calculate and fill the check code -> Escape;

When receiving a message: escape and restore --> verify the check code -- > parse the message;

Example 1:

Sending a data packet with the content of 0x300x7e0x080x7d0x55 is encapsulated as follows: 0x7e 0x30 0x7d 0x02 0x08 0x7d 0x01 0x550x7e ; _ _ _ _ _

b) Check code: The cumulative sum accumulated sequentially from the manufacturer number to the user data, and then the lower 8 bits of the accumulation are taken as the check code

code;

Example 2:

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

c) Version number: identifies the communication protocol version;

d) Manufacturer number: the manufacturer code of the peripheral slave machine;

e) Peripheral type number: A unique type number corresponding to each peripheral, used to distinguish the peripheral interface driver of the host What kind of peripheral device is the data sent from? The peripheral device type number is shown in Table A.2;

f) Command type: Information type for various data exchanges between peripherals and the host. Command types are divided into general protocols and specialized protocols. There are two major categories of protocols : General protocols mainly include some basic, necessary and common information exchanges between the slave and the host. Mutual type ; The proprietary protocol defines the unique information interaction type between various types of peripherals and the host; The command types are shown in Table A.3;

g) User data: refers to the data between the peripheral and the host other than the above parts that are customized by specific business functions content;

h) The data of the communication frame adopts big - endian representation . Table A.2 Peripheral type number table

Peripheral type	serial number
Industry information terminal	0x01 _ _
Scheduling display	0x02 _ _
Car navigation display	0x03 _ _
Oil level detector	0x04 _ _
acceleration detector	0x05 _ _
burglar alarm	0x06 _ _
interface extender	0x07 _ _
Load detector	0x08 _ _
Passenger flow detector	0x09 _ _
Universal sensor	0x0A _
Road Transport Certificate IC Card Reader	0x0 B
customize _	0xF0-0xFF

Table A.3 Command type table

agreement type	Business function type	Command type
Peripheral general protocol	Power-on indication/answer	0x01 _ _
	Link probe/ reply	0x02 _ _
	Slave power control/answer	0x03 _ _
	Query slave version number information	0x04 _ _
	Slave self-test/answer	0x05 _ _
	Slave firmware update/answer	0x06 _ _

	reserve	0x07-0x3F _ _
dedicated protocol	Road Transport Certificate IC Card Authentication Request/Response	0x40 _

	Road Transport Certificate IC card reading result notification/response	0x41 _
	Card removal notification/response	0x42 _
	Active trigger to read IC card/response	0x43 _
	Proprietary functional business protocols for various slave peripherals	0x44-0xF F

A. 2.2 Adding rules for peripheral protocols

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

a) The sending and response protocols of the same function use the same command type;

b) For peripherals with many command types, when adding new command types, try to consider using variable parameters to reduce Command type occupation.

A.3 General protocol description

A.3.1 Slave power-on indication

The slave machine power -on instructions are shown in Table A.4.

Table A.4 Slave power-on indication table

step	Command type	describe	User data	data direction
1	01H	on instruction response	none	Downward
2	01H	Power on instructions	none	Upward

A. 3.2 Peripheral link inquiry

See Table A.5 for peripheral link inquiry instructions.

Table A.5 Peripheral link inquiry command list

step	Command type	describe	User data	data direction
1	02H	link inquiry	Link maintenance time The high byte comes first, the low byte comes last; the high byte is single The bit is minute (min), the unit of low byte is second (s); The recommended link inquiry time is 15s-30s; link timeout After that, the host will cancel the registration information of the slave.	Upward
2	02H	link probe reply	none	Downward

A.3.3 Slave power control

The slave power control instructions are shown in Table A.6.

Table A.6 Slave power control indication table

step	Command type	describe	User data	data direction
1	03H	Slave power control	Control type : 0x00——Slave machine exits power saving mode; 0 x 01 - The slave enters power saving mode	Downward
2	03H	Slave power control response	Response type: 0x01 - operation successful; 0 x 02——Operation failed (slave due to Unable to enter power saving mode or exit power saving mode under special circumstances model)	Upward

A. 3.4 Query slave version number information

for querying slave version number information are shown in Table A.7.

Table A.7 Instruction list for querying slave version number information

step	Command type	describe	User data	data direction
1	04H	Query slave version number information	none	Downward
2	04H	Query slave version number information response	Slave version number, WORD For example : 0x0207, indicating version 2.07	Upward

A. 3.5 Slave machine self- test

machine self-test instructions are shown in Table A.8.

surface A.8 Slave machine self-test command list

step	Command type	describe	User data	data direction
1	05H	Slave self-test	Self-test slave type, BYTE, as defined in Table A.2	Downward
2	05H	Self-test result information	Self-test slave type, BYTE, as defined in Table A.2	Upward
			Self-test result, BYTE 0x01 : Self-test successful; 0x02 : Self-test failed .	

Note: The command timeout is 1s. If there is no response, it will be resent up to three times.

the terminal receives the self-test failure, it sets the corresponding alarm flag and provides voice prompts or screen display.

A.3.6 Slave firmware update

The slave firmware update instructions are shown in Table A.9.

surface A.9 Slave firmware update command list

step	Command type	describe	User data	data direction
1	06H	Update slave module	message packets, WORD	Downward
			Packet serial number, WORD, starting from 1	

		FirmWare	Packet data , maximum length is 256 bytes	
2	06H	Confirm information	Packet serial number, WOR D	Upward
			Response result, BY TE	

			0: correct; 1: Not this firmware program, terminate the upgrade; 2 : Resend (after three times, this upgrade will be terminated).	

Note: The command timeout is 1s. If there is no response, it will be resent up to three times.

A. 3.7 Query peripheral properties

See Table A.10 for querying peripheral attribute instructions.

Table A.10 Query peripheral attribute command list

step	Command type	describe	User data	data direction
1	07H	Query peripheral properties	none	Downward
2	07H	Query peripheral attribute response	Peripheral manufacturer number, 5 BYTE	Upward
			Peripheral hardware version number, 3 BYTE	
			Peripheral software version number, 3 BYTE	

Note: Example of version number, 0x010B02 means v1.12.2.

The command timeout is 1s . If there is no response, the command will be resent up to three times.

A. 4 Specific protocol description

A.4.1 Road transport permit IC card authentication request

When the module detects that a card is inserted , and after the module is reset or powered on again, and the physical card number of the IC card in the card slot is the same as the one on the When the card numbers read for the first time are inconsistent, the uplink command for road transport certificate IC card authentication request is automatically triggered.

The road transport certificate IC card authentication request instructions are shown in Table A.11.

Table A.11 Road Transport Certificate IC Card Authentication Request Instructions

step	Command type	describe	User data	data direction
1	40H _	IC card authentication request	Status bit, BYTE, 0x00 : IC card reading is successful; 0 x 0 1: IC card is not inserted; 0x02 : IC card reading failed; 0x03: Non-professional qualification certificate IC card ; 0 x 0 4: IC card is locked.	Upward
			Data area (valid when status bit=0 x 00), card base This information and authentication information (64 bytes)	

2	40H _	IC Card authentication request response	IC card authentication request response result, BYTE 0 x 0 0 : Authentication request completed successfully; 0 x 0 1: The terminal is not online; 0 x 02: The terminal transparent transmission authentication center times out and does not respond; 0 x 0 3: The terminal confirms receipt of information (IC card authentication please	Downward

			asking for card reading result = 0x01-0x04).	
			Data area (IC card authentication request response result = 0x00) valid) , the IC card authentication request returns verification data (24 byte).	

Note: When the instruction is uplink and the IC card authentication request status bit is 0x00, the timeout time is 35S. In other states and when it is downlink, the timeout time is 1s, such as If there is no response , it will be resent up to three times.

A. When the status bit is 0 x 00, the terminal sends 64-byte card basic information and authentication information to the authentication center, and sends the card reader to the card reader according to different situations. The module returns 1 or 25 bytes of result information.

a . When the IC card authentication request response result returned by the terminal to the card reading module is 0x00, the card reading module starts to read the card information, and then automatically starts the 41H command to feedback the results to the terminal. The terminal prompts the driver with the corresponding result in voice, and reads the card. After success, use the 0x0702 command to The certification center and monitoring platform send driver identity information;

b . When the IC card authentication request response result returned by the terminal to the card reading module is 0x01, wait for 20 minutes and use the 43H command to actively trigger the card reading module to read the IC card;

c . When the IC card authentication request response result returned by the terminal to the card reading module is 0x02, the card reading module resends 40H three times. After three unsuccessful attempts, The terminal ends the process and the driver is prompted with a voice prompt for the corresponding result;

d . When the IC card authentication request response result returned by the terminal to the card reading module is 0x03, the process ends and the terminal prompts the driver to complete the process accordingly. fruit.

B. When the status bit is non-0x00, the terminal ends the process and gives the driver a voice prompt of the corresponding result.

A.4.2 Road Transport Certificate IC card reading result notification

The road transport certificate IC card reading result notification instructions are shown in Table A.12.

surface A.12 Road Transport Certificate IC Card Reading Result Notification Instruction Form

step	Command type	describe	User data	data direction
1	41H _	IC Card reading result notification	IC card reading result, BYTE 0x00: IC card reading is successful, and there is subsequent data at this time; 0x01: Card reading failed. The reason is that the card key authentication has not been completed. pass; 0 x 02: Card reading failed because the card has been locked; 0 x 03: Card reading failed because the card was pulled out; 0x04 : Card reading failed due to data verification error.	Upward
			Data area (when the IC card reading result is 0 x 00 Effective), driver identity information, see Table A. 13 .	
2	41H _	Driver identity information received confirmation	none	Downward

Note: The command timeout is 1s. If there is no response, it will be resent up to three times.

A. When the terminal receives an IC card reading result of 0 x 00, it uses the 0 x 0702 command to send driver identity information to the certification center and home platform ; B. When the terminal receives an IC

card reading result of non-0 x 00 When, the process ends and the driver is prompted with the corresponding result via voice .

surface A.13 Driver identity information form

start byte	Field	type of data	Description and requirements
0	Driver name length	BYTE _	The length is n
1	driver name	S TRING	driver name

1 +n	Professional qualification certificate number	S TRING	Length is 20 bits
21+ n	Issuing authority name length	BYTE _	The length is m
22+ n	issuing authority	S TRING	Name of the professional qualification certificate issuing agency
22 +n+m	Certificate validity period	BCD [4]	YYYYMMDD _

A. 4.3 Card removal notification

The card removal notification instructions are shown in Table A.14.

Table A.14 Card removal notification command list

step	Command type	describe	User data	data direction
1	42H _	Card removal notification	none	Upward
2	42H _	Card removal notification received confirmation	none	Downward

Note: The command timeout is 1s. If there is no response, it will be resent up to three times.

When the terminal receives the card pull-out notification, it uses the 0x0702 command to send the driver off-duty information to the certification center and monitoring platform . A. 4.4 Active triggering to read IC card

The active trigger reading IC card command is shown in Table A.15.

Table A.15 Active trigger reading IC card command table

step	Command type	describe	User data	data direction
1	43H _	Actively trigger reading IC card	none	Downward
2	43H _	Actively trigger reading IC card confirmation information	none	Upward

Note: The command timeout is 1s. If there is no response, it will be resent up to three times.

This command is used for terminal roll call, terminal is not online or terminal uploads IC card authentication information timeout, etc. After receiving this command, the card reading module automatically triggers Send the 40 H command to read the card again.

Appendix B

(Normative appendix)

Message lookup table

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

Table B .1 Message comparison table

serial number	Message body name	Message ID	serial number	Message body name	Message ID
1	Terminal universal response	0x0001 _ _ _	twenty four	Event settings	0x8301 _ _
2	Platform general response	0x8001 _ _ _	2 5	incident report	0x0301 _ _
3	Terminal heartbeat	0x0002 _ _ _	2 6	Send questions	0x8302 _ _
4	Supplemental transmission of subcontracting request	0x8003 _ _ _	2 7	question and answer	0x0302 _ _ _
5	Terminal registration	0 x 0 100	2 8	Information on demand menu settings	0x8303 _ _ _
6	Terminal registration response	0 x 8 100	2 9	Information on demand/ cancellation	0x0303 _ _ _
7	Terminal logout	0x0003 _ _ _	3 0	information services	0x8304 _ _ _
8	Terminal authentication	0x0102 _ _ _	3 1	Call back	0x8400 _ _
9	Set terminal parameters	0x8103 _ _ _	3 2	Set up phone book	0x8401 _ _
1 0	Query terminal parameters	0x8104 _ _ _	3 3	vehicle control	0x8500 _ _
1 1	Query terminal parameter response	0x0104 _ _ _	3 4	vehicle control response	0 x 0 500
1 2	terminal control	0x8105 _ _ _	3 5	Set circular area	0x8600 _ _
1 3	Query specified terminal parameters	0x8106 _ _ _	3 6	Delete circular area	0x8601 _ _ _
1 4	Query terminal properties	0x8107 _ _ _	3 7	Set rectangular area	0x8602 _ _
1 5	Query terminal attribute response	0x0107 _ _ _	3 8	Delete rectangular area	0x8603 _ _ _
1 6	Deliver terminal upgrade package	0x8108 _ _ _	3 9	Set polygon area	0x8604 _ _ _
1 7	Terminal upgrade result notification	0x0108 _ _ _	40	Delete polygon area	0x8605 _ _ _
1 8	Location information reporting	0 x 0 200	41	Set route	0x8606 _ _ _
1 9	Location information query	0x8201 _ _ _	42	Delete route	0x8607 _ _
2 0	Location information query response	0x0201 _ _ _	43	Driving recorder data collection command	0x8700 _ _ _
twenty one	Temporary location tracking control	0x8202 _ _ _	44	Driving recorder data upload	0x0700 _ _ _
twenty two	Manually confirm alarm message	0x8203 _ _ _	45	Driving recorder parameter download command	0x8701 _ _ _

twenty three	Text message delivery	0x8300 _ _ _	46	Electronic waybill reporting	0x0701 _ _ _

serial number	Message body name	Message ID	serial number	Message body name	Message ID
47	Driver identity information collection and reporting	0x0702 _ _ _	5 8	Store multimedia data upload	0x8803 _ _ _
48	Report driver identification information request	0x8702 _ _ _	5 9	Recording start command	0x8804 _ _ _
49	Positioning data batch upload	0x0704 _ _ _	6 0	Single stored multimedia data retrieval and upload command	0x8805 _ _ _
5 0	CAN bus data upload	0x0705 _ _ _	6 1	Data downlink transparent transmission	0x8900 _ _ _
5 1	Multimedia event information upload	0x0800 _ _ _	6 2	Data uplink transparent transmission	0x0900 _ _ _
5 2	Multimedia data upload	0x0801 _ _ _	6 3	Data compression reporting	0x0901 _ _
5 3	Multimedia data upload response	0x8800 _ _ _	6 4	Platform RSA public key	0x8A00 _ _ _
5 4	Camera shooting command immediately	0x8801 _ _ _	6 5	Terminal RSA public key	0x0A00 _ _ _
5 5	Camera immediately shoots command response	0x0805 _ _ _	6 6	Platform downstream messages are retained	0x8F 00 ~ 0x8 _ FFF
5 6	Stored multimedia data retrieval	0x8802 _ _ _	6 7	Terminal uplink message retention	0x0F 00 ~0 x 0 FFF
5 7	Store multimedia data retrieval responses	0x0802 _ _ _			