Technical specification of terminal communication protocol

(Compatible with jt/t808-2013 vehicle terminal communication protocol technical specifications)

Revision history			
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V1.0	20200320	Go online, issue orders, position report, roll call（0102、0200，0002，8103）	Zhou Hongzhou
V1.1	20200323	Add ignition and closing trigger to take pictures	Zhou Hongzhou
V1.2	20200410	Position package additional liquid level height	Zhou Hongzhou
V1.3	20200424	Transparent transmission command	Zhou Hongzhou
V1.4	20200606	Location additional data upload mode added	Zhou Hongzhou
V1.5	20210506	Increase battery power Compatible with Dixin and Beyond platforms	Zhou Hongzhou

contents

1. Range

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

This specification applies to the communication between the Beidou compatible vehicle-mounted terminal and the platform of the road transport vehicle satellite positioning system.

2. Protocol basis

2.1. data type

The communication method adopted by the protocol should comply with the relevant regulations in JT/T 794. The communication protocol adopts TCP or UDP, the platform serves as the server and the terminal serves as the client. When the data communication link is abnormal, the terminal can communicate by means of SMS messages.

2.2. data type

For the data types used in the protocol message, see Table 1：

<div align="center">Table 1　（data type）</div>

data type	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-bit)
BYTE[n]	n bytes
BCD[n]	8421 code, n bytes
STRING	GBK code, if there is no data, leave it blank

Transmission rules
The protocol uses big-endian network byte order to transfer words

and double words.

 Agreement as follows：

——BYTE transmission convention：According to the byte stream transmission；

——WORD transmission convention：Pass the high eight bits first, then pass the low eight bits；

——Double word (DWORD) transmission convention：First pass the high 24 bits, then pass the high 16 bits, then pass the high eight bits, and finally pass the low eight bits.

2.3. The composition of the message

2.3.1. Message structure

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

Flag	Message header	Message body	Check code	Flag

Figure 1 Message structure diagram

2.3.2. identification bit

Using 7e means that if 7e appears in the check code, message header, and message body, it must be escaped. The escape rules are defined as follows：

7e <————> 7d followed by a 02；

7d <————> 7d followed by a 01。 The escape process is as follows：

When sending a message: message encapsulation -> calculate and fill in the check code -> escape；

When receiving a message: Escape and restore——>Verify check code——>Analyze the message。

Example：

Send a packet of content 30 7e 08 7d 55，It is packaged as follows： 7e 30 7d 02 08 7d 01 55 7e。

2.3.3. Message header

Start byte	Field	type of data	Describe requirements
0	Message ID	word	Function type of data
2	Message body attributes	word	The structure diagram of the message body attribute format is shown in Figure 2
4	Terminal serial number	BCD[6]	Identify the unique number of the device
10	serial number	word	Cyclically accumulate from 0 in the sending order

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

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

3.   Connection establishment

The daily data connection between the terminal and the platform can be TCP or UDP. After the terminal is turned on or reset, it should establish a connection with the platform as soon as possible. After the connection is successful, the location packet and heartbeat data packet will be sent。

3.1.   Connection maintenance

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

3.2. Disconnected

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 judges that the TCP connection is disconnected:

——According to the TCP protocol, it is determined that the terminal is actively disconnected;

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

——The message from the terminal, such as the heartbeat of the terminal, is not received within a certain period of time.

How the terminal judges that the TCP connection is disconnected:

——According to the TCP protocol, it is determined that the platform is actively disconnected;

——The data communication link is disconnected;

——The data communication link is normal, and no response is received after reaching the number of retransmissions.

4. Message processing

4.1. TCP and UDP

4.1.1. Message from the main platform

All messages sent by the platform require the terminal to respond. The responses are divided into general responses and special responses, which are determined by each specific function protocol. After the sender waits for the response timeout, the message should be retransmitted. The response timeout time and the number of retransmissions are specified by platform parameters. The calculation formula for the response timeout time after each retransmission is shown in equation (1)：

$$TN+1=TN \times （N+1） \quad …………（1）$$

Where：

TN+1——Response timeout after each retransmission；

TN——Last response timeout time；

N——Number of retransmissions。

4.1.2. Message from the main terminal

1．Data communication link is normal

when the data communication link is normal, all messages sent by the terminal require a response from the platform. the response is divided into a general response and a special response, which are determined by each specific functional protocol. after the terminal waits for the response timeout, the message should be retransmitted. the response timeout time and the number of retransmissions are specified by terminal parameters, and the response timeout time after each retransmission is calculated according to formula (1). for the critical alarm message sent by the terminal, if no response is received after the number of retransmissions, it should be saved. send the saved critical alarm message before sending other messages in the future.

2．Abnormal data communication link

When the data communication link is abnormal, the terminal shall save the location information report message to be sent. After the data communication link returns to normal, the saved message is sent immediately.

5. Data Format

5.1. Terminal general response

Message ID： 0001。

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

Table 4

Data format of terminal general response message body

Start byte	byte	type of data	Description and requirements
0	Reply serial number	WORD	The serial number of the corresponding platform message Serial
2	Response ID	WORD	The ID of the corresponding platform message
4	result	BYTE	0: success/confirmation; 1: failure; 2: error in the message; 3: not supported

5.2. Platform general response

Message ID: 8001。

The data format of the platform general response message body is shown in Table 5。

Table 5   Platform general response message body data format

Start byte	Field	type of data	Description and requirements
0	Reply serial number	WORD	The serial number of the corresponding terminal message
2	Response ID	WORD	The ID of the corresponding terminal message
4	result	BYTE	0: success/confirmation; 1: failure; 2: error in the message; 3: not supported; 4: alarm Processing confirmation

5.3 Terminal heartbeat

Deleted

5.4. Terminal heartbeat

Message ID：： 0002

The body of the terminal heartbeat data message is empty.

5.5. Registration (2013 version)

Message ID：0x0100

The data format of the terminal registration message body is shown in the following table

Start byte	Field	type of data	Description and requirements
0	Provincial ID	word	It indicates the province where the vehicle is installed on the terminal, 0 is reserved, and the default value is taken by the platform. The provincial ID adopts the first two of the six administrative division codes specified in GB/T 2260.
2	City/County ID	word	Indicate the city and county where the vehicle is installed on the terminal, 0 is reserved, and the platform takes the default value. The city and county ID adopts the last four digits of the six administrative division codes specified in GB/T 2260.
4	Authentication code	Byte[5]	5 bytes, terminal manufacturer code
9	Manufacturer ID	Byte[20]	20 bytes. The terminal model is defined by the manufacturer. If the number of digits is insufficient, add "0X00".
29	Terminal ID	Byte[7]	7 bytes, composed of uppercase letters and numbers. The terminal ID is defined by the manufacturer. If the number of digits is insufficient, "0X00" will be added.
36	License plate color	Byte	The color of the license plate is in accordance with 5.4.12 of JT/T415-2006. When it is not on the card, the value is 0.
37	Vehicle identification	string	When the license plate color is 0, it means the vehicle VIN; otherwise, it means the motor vehicle number plate issued by the public security traffic management department.

5.6. Registration response

Message ID：0x8100

The data format of the terminal registration response message body is shown in the following table

Start byte	Field	type of data	Description and requirements
0	Reply serial number	word	The serial number of the 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 is not in the database
3	Authentication code	string	This field is only available after success

5.7. Logout

Message ID：0x0003

The terminal message body is empty.

5.8. Authentication

Message ID：0x0102

The data format of the terminal authentication message body is shown in the following table

Start byte	Field	type of data	Description and requirements
0	Authentication code	STRING	Report the authentication code after the terminal reconnects

5.9. Location information report

The terminal sends location information report messages periodically or trigger conditions according to parameter settings.

Message ID： 0200。

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

Table 3 Structure diagram of report message

Basic location information	List of location additional information items
(See Table 23)	(See Table 26)

The location additional information item list is composed of various location additional information items, or not, and is determined according to the length field in the message header. See Table 23 for the data format of basic position information.

Table 23 Data format of basic position information

Start byte	Field	type of data	Description and requirements
0	Alarm sign	DWORD	Refer to Table 24 for the definition of alarm flag bit
4	state	DWORD	The status bit definition is shown in Table 25
8	latitude	DWORD	The latitude value in degrees is multiplied by 10 to the 6th power, accurate to one millionth of a degree
12	longitude	DWORD	The longitude value in degrees is multiplied by 10 to the 6th power, accurate to one millionth of a degree
16	Elevation	WORD	Altitude, in meters (m)
18	speed	WORD	1/10km/h
20	direction	WORD	0-359，True north is 0, clockwise 0-359,
21	time	BCD[6]	YY-MM-DD-hh-mm-ss(GMT+8 time, the time involved in this standard will use this time zone)

Table 24 Definition of alarm flag bit

bit	definition	Processing instructions
0	1: Emergency alarm, triggered after touching the alarm switch	Cleared after receiving the response
1	1: Speeding alarm	The flag is maintained until the alarm condition is removed
2	1: Fatigue driving	The flag is maintained until the alarm condition is removed
3	1: Danger warning	Cleared after receiving the response

4	1: GNSS module fails	The flag is maintained until the alarm condition is removed
5	1: The GNSS antenna is not connected or cut off	The flag is maintained until the alarm condition is removed
6	1： GNSS antenna short circuit	The flag is maintained until the alarm condition is removed
7	1: Terminal main power supply undervoltage	The flag is maintained until the alarm condition is removed
8	1: The main power supply of the terminal is powered off	The flag is maintained until the alarm condition is removed
9	1: Terminal LCD or display failure	The flag is maintained until the alarm condition is removed
10	1: TTS module failure	The flag is maintained until the alarm condition is removed
13	1: Speeding warning	The flag is maintained until the alarm condition is removed
14	1: Early warning of fatigue driving	The flag is maintained until the alarm condition is removed
15		
16	1: Low battery alarm	The flag is maintained until the alarm condition is removed
17		
20	1: In and out of the area	Cleared after receiving the response
21	1: Entry and exit routes	Cleared after receiving the response
23	1: Route deviation alarm	The flag is maintained until the alarm condition is removed
27	1: Illegal ignition of the vehicle	Cleared after receiving the response
28	1: Illegal displacement of the vehicle	Cleared after receiving the response
29	1: Collision warning	Cleared after receiving the response
30	1: Rollover warning	Cleared after receiving the response
31	1: Illegal door opening alarm (when the terminal has no area set, the illegal door opening is not judged)	Cleared after receiving the response

Note: When the terminal judges that the alarm conditions are met, the location information report message is sent, and the corresponding alarm flag is set in the location report message. The platform can handle the alarm by replying to the platform general response message.

For each alarm type, see the description in the body of the location information report. The alarm flag is maintained until the alarm condition is removed. After the alarm condition is removed, the location information report message should be sent immediately to clear the corresponding alarm flag.

Table 25 Status bit definition

bit	status
0	0: ACC off; 1: ACC on
1	0: not positioned; 1: positioned
2	0: north latitude; 1: south latitude
3	0: east longitude; 1: west longitude
4	0: operating status; 1: outage status
10	0: The vehicle oil circuit is normal; 1: The vehicle oil circuit is disconnected
13	0: Door 1 closed; 1: Door 1 open (side door)
Other reserved	

Note: If the status changes, the location information must be reported immediately.

Table 26 Format of location additional information items

Field	type of data	Description and requirements
Extension ID	BYTE	1-255
Additional information length	BYTE	
extra information		Additional information is defined in Table 27

Table 27 Definition of additional information

Extension ID	Additional information length	Description and requirements
01	4	Mileage, DWORD, 1/10km, corresponding to the odometer reading on the car
02	2	Fuel quantity, WORD, 1/10L, corresponding to the reading of the fuel gauge on the car
03	2	Speed obtained by driving record function, WORD, 1/10km/h
04	2	Need to manually confirm the ID of the alarm event, WORD, counting from 1
10	1	Data upload mode: 0x01: First positioning after power-on 0x02: Positioning when wake-up from sleep 0x03: Timing 0x04: fixed distance 0x05: acc change 0x06: inflection point

		0x07: blind zone 0x08: LBS 0x09: alarm trigger 0x0A: retransmit the last valid anchor point from work to sleep 0x0B: report the last valid anchor point after network disconnection and reconnection 0x0C: force the ephemeris update to upload GPS points 0x0D: press to upload anchor points 0x0E: the longer the standby timer 0x0F: shutdown
12	6	Refer to Table 29 for additional information of entry and exit area/route alarm
13	7	See Table 30 for the additional information of the road section driving time insufficient/too long alarm
2A	2	IO status bit, see table 32 for definition
2B	4	Two-way oil quantity, 4 bytes, which can represent two analog quantities
30	1	BYTE, wireless communication network signal strength
31	1	BYTE, BYTE, the number of GNSS positioning satellites
50	2	One oil quantity, 2 bytes, single analog quantity
51	8	8 bytes, temperature (4 channels), two bytes per channel, unit: 1/10 degrees
53	1+n*8	Base station data: the first byte is the number of base stations, followed by n base station data; base station data: 0-1 MCC; 2 MNC; 3-4 LAC; 5-6 CELLID; 6 signal strength
54	1+n*7	Wifi data: the number of wifi in the first byte, followed by n wifi data; WIFI data: 0-5 wifiMac; 6 Signal strength
56	2	Power extension, 2 bytes, unit: percentage, first byte: 0-10, second byte spare
57	8	Status extension, 8 bytes, 0-1 bytes are alarm status, 2-3 bytes are switch status, 4-7 bytes are spare Alarm status: 0x0001 vibration alarm, 0x0002 tamper alarm, 0x0004 cover open alarm, table 39 The lower 4 bits of the second byte of the switch status indicate the status of the external switch 0006 (0110), bit0-off, bit1-on, bit2-on, bit3-off
58	10	Temperature extension bit: 2 bytes per channel (means 0.0-100.0%); for example: 033A means 82.6%, the total length of 8 channels is 16 bytes, the platform needs to be able to set the alarm threshold, which is set for each vehicle
5D	1+n*10	Base station data: The first byte is the number of base stations, followed by n base station data; Base station data: 0-1 MCC; 2 MNC; 3-4 LAC; 5-8 CELLID; 9

		signal strength
5F	10	BCD，ICCID, for example：898602B3131650066481： 89 86 02 B3 13 16 50 06 64 81 // The first login package add-on (BCD, ICCID, for example: 898602B3131650066481: 89 86 02 B3 13 16 50 06 64 81
66	9	BCD，The unique IMEI number of the device cannot be changed. The first login package is attached. for example：898661234567890： 00 89 86 66 12 34 56 78 90
Other reserved		

Only carry it when used according to the corresponding function.

Table 29 Data format for additional area information of route / route alarm

Start byte	Field	type of data	Description and requirements
0	Location type	BYTE	1: Round area; 2: Rectangular area; 3: Polygonal area; 4: Route
1	Area or line ID	DWORD	
5	direction	BYTE	0: in; 1: out

Table 30 The data format of the additional information message body of the route under/too long driving time alarm

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

Table 32 IO status bits

bit	definition
0	1: Deep sleep state
1	1: Sleep state or standby state
2	2: Working status

bit	definition	Processing instructions
0	Vibration alarm	
1	Anti-dismantling alarm	
2	Open the cover alarm	
3	1: External power overvoltage protection alarm	The flag is maintained until the alarm condition is removed
4	1: Rapid acceleration alarm	Cleared after receiving the response
5	1: Sudden deceleration alarm	Cleared after receiving the response
6	1: Sharp turn alarm	Cleared after receiving the response
~		
15	Reserved	

Table 39 Additional ID: 57 alarm flag bit definition

5.10. Location information query

The platform queries the current location information of the designated vehicle terminal by sending a location information query message, and the terminal replies to the location information query response message。

Message ID: 8201.
The location information query message body is empty.

5.11. Location information query response

Message ID： 0201。

The data format of the location information query response message body is shown in Table 35.

Table 35: Data format of the location information query response message body

Start byte	Field	type of data	Description and requirements
0	Reply serial number	WORD	The serial number of the corresponding location information query message
2	Location information report		The location information report is shown in Table 33. Location report message structure

			diagram

5.12. Text information issuance

The platform controls the terminal by sending a text message, and the terminal replies to the terminal general response message The platform message ID: 8300.

The data format of the message body sent by the text information is shown in Table 37.

Table 37 Data format of the message body sent by the text information

Start byte	Field	type of data	Description and requirements
0	Sign	BYTE	The meaning of the text information flag is shown in Table 38
	Text message	STRING	The maximum length is 1024 bytes, encoded by GBK

e 38 Meaning of information flags

bit	Sign
0	1: Urgent
1	1: Control the content of the command, without displaying and reading. Commands are defined according to different terminal functions.
2	1: Terminal display
3	1: Terminal TTS broadcast
4	1: Advertising screen display
5	0: Center navigation information, 1: CAN fault code information
6～7	Reserve

5.13. Set terminal parameters

The platform sets the terminal parameters by sending a set terminal parameter message, and the terminal replies to the terminal general response message.

Message ID： 8103。

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

Table 10 Terminal parameter message body data format

Start byte	Field	type of data	Description and requirements
0	Total number of parameters	BYTE	
1	List of parameter items		The parameter item format is shown in Table 11

Table 11 Data format of terminal parameter item

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

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

parameter	type of data	Description and requirements
0001	DWORD	Heartbeat sending interval when terminal ACC is on, in seconds (s)
0008	DWORD	Heartbeat sending interval when terminal ACC is off, in seconds (s)
0010	STRING	Main server APN, wireless communication dial-up access point. If the network standard is PPP dial number
0011	STRING	Account of the main server APN PPP dial number
0011	STRING	The password of the main server APN PPP dial number
0013	STRING	Main server address, IP or domain name
0014	STRING	The name of the secondary server APN PPP dial number
0015	STRING	APN account of the secondary server PPP dial number
0016	STRING	Password of the secondary server APN

0017	STRING	Secondary server address, IP or domain name
0018	DWORD	Server TCP port
0019	DWORD	Server UDP port
0020	DWORD	Location report strategy, 0: regular report; 1: fixed distance report 2: regular and fixed distance report
0027	DWORD	Reporting interval during sleep, in seconds (s), >0
0029	DWORD	Time reporting interval of working status, in seconds (s), >0
002C	DWORD	Reporting interval of working status distance, in meters (m), >0
0030	DWORD	Inflection point supplementary transmission angle, <180
0031	WORD	The radius of the electronic fence (illegal displacement threshold), the unit is meter, the radius value range: 100～1000m, the default is 300
0043	STRING	Monitoring platform center number
0043	STRING	Receiving terminal text alarm number
0050	DWORD	Alarm mask word, corresponding to the alarm flag in the position information report message, the corresponding bit is 1. The corresponding alarm is blocked
0055	DWORD	Maximum speed, the unit is kilometers per hour (km/h), the default is 100
0056	DWORD	Overspeed duration, in seconds (s), default 20
0080	DWORD	Set vehicle mileage, 1/10 km

5.14.   Query terminal parameters

The platform queries the terminal parameters by sending a query terminal parameter message, and the terminal replies with a query terminal parameter response message.

Message ID: 8104.
The message body of the query terminal parameter is empty.

5.15.   Query terminal parameter response

Message ID： 0104。
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	Reply serial	WORD	The serial number of the corresponding

	number		terminal parameter query message
2	Number of response parameters	BYTE	
3	List of parameter items		The parameter format and definition are shown in Table 10

5.16. Camera command to shoot immediately

Message ID： 8801。

The data format of the message body of the camera's immediate shooting command is shown in Table 83.

Table 83 Data format of the message body of the camera's immediate shooting command

Start byte	Field	type of data	Description and requirements
0	Channel ID	BYTE	>0
1	Shooting order	WORD	0 means stop shooting; FFFF means video; others mean the number of photos taken
3	Photo interval/recording time	WORD	Seconds, 0 means to take pictures at the minimum interval or keep recording
5	Save flag	BYTE	1: save; 0: upload in real time
6	Resolution	BYTE	01:320*240； 02:640*480； 03:800*600 ； 04:1024*768; 05:176*144;[Qcif]; 06:352*288;[Cif]; 07:704*288;[HALFD1]; 08:704*576;[D1];
7	Image/video quality	BYTE	1-10, 1 means the least quality loss, 10 means the maximum compression ratio 1-10, 1
8	brightness	BYTE	0-255
9	Contrast	BYTE	0-127

Start byte	Field	type of data	Range
10	saturation	BYTE	0-127
11	Chroma	BYTE	0-255

If the terminal does not support the resolution required by the system, take the closest resolution to shoot and upload

5.17. The camera immediately responds to the shooting command

Message ID： 0805。

The data format of the response message body of the camera's immediate shooting command is shown in Table 84. This command is used to answer the camera's immediate shooting command 8801 issued by the monitoring center.

Table 84 The format of the response data of the camera's immediate shooting command

Start byte	Field	type of data	Description and requirements
0	Reply serial number	WORD	Corresponding to the message serial number of the platform camera's immediate shooting order
2	result	BYTE	0: success; 1: failure; 2: channel not supported. The following fields are only valid when the result=0.
3	Number of multimedia IDs	WORD	n, the number of successful multimedia films n, the
4	Multimedia ID list	WORD	

5.18. Store multimedia data upload

Message ID： 8803

The data format of the message body of the stored multimedia data upload command is shown in Table 88.

Table 88 Data format of the message body of the stored multimedia data upload command

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 coding	BYTE	0: Command issued by the platform; 1: Timed action; 2: Robbery alarm triggered; 3: Collision rollover alarm triggered; 4: Ignition touch; 5: Door closing triggered
3	Start time	BCD[6]	YY-MM-DD-hh-mm-ss
9	End Time	BCD[6]	YY-MM-DD-hh-mm-ss
15	Delete flag	BYTE	0：Reserve；1: Delete;

5.19. Data downlink transparent transmission

Message ID： 8900。

Table 17 The data format of the message body of the data uplink transparent transmission

Start byte	Field	type of data	Description and requirements
0	Transparent message type	BYTE	See Table 19 for the definition of transparent transmission message types
1	Transparent message content		

5.20. Data uplink transparent transmission

Message ID： 0900。

Table 18 Data format of the message body of the data uplink transparent transmission

Start byte	Field	type of data	Description and requirements
0	Transparent message type	BYTE	See Table 19 for the definition of transparent transmission message types
1	Transparent message content		

Table 19 Definition table of transparent transmission message types

Transparent message type	definition	Description and requirements
Positioning module positioning data	00	Module positioning data
Sign-in card	0B	
RS232 serial port 1 transparent transmission	41	Serial port 1 transparently transmits messages
Rs232 serial port 2 transparent transmission	42	Serial port 2 transparent message
RS485 serial port transparent transmission	F0	The transparent data is not recognized
Tire pressure box transparent transmission	F2	6 bytes time + transparent data
Ultrasonic oil volume sensor transparent transmission	F3	6 bytes time + transparent data
Command transparent transmission	FE	instruction
Command transparent reply	FF	reply