JT701D Protocol Manual

V1.7

Shenzhen Joint Technology Co.,Ltd.

April 18, 2023

Table of Contents

Version History

Verion	Modify Contents	Release time
V1.1	First edition released	April 22, 2021
V1.2	Fix WLNET,5 response command error	June 22, 2021
V1.3	Update P04 command description-RTC wake-up interval parameter modification; Added P39 command-the working time of the device after the wake-up function; Added version history chapter	August 20, 2021
V1.4	Add OTA-9 FTP OTA command-firmware version:20211019; After non-RTC wakeup, immediately collect a piece of position data and upload it-firmware version:20211222; Position and alarm data format-MNC modification-firmware version:20211224	December 31, 2021
V1.5	**Added commands:** Added P36 command - vibration alarm - firmware version: 20211222; Added P91 command - Deep sleep warehousing mode (remote shutdown) - firmware version: 20220106; Add P83 command - automatic lock time can be configured 1-10min - firmware version: 20220304; Added P92 command - configure the data reporting interval of unlocking/locking status - after this function is enabled, the P04 configuration will be invalid. - Firmware version: 20220304; Add P94 command –Query and configure the P45 unlock&lock report expanded field,default ,this function is disabled- firmware version: 20220304 **Function optimization:** (Firmware version: 20220304) 1. VIP mobile number length limit changed from 15 characters to 20 characters 2. After the unlocking and locking operations, report a position data synchronously, so as to obtain the latest lock rope and motor status.no need to wait the time interval of data reporting(P04 command setting). 3. Location data - IMEI field reported by default	March 7, 2022
V1.6	**Added commands:** Added P97 command - configure GNSS module power saving mode - firmware version: 20220628; Added P99 command - configure Cornering report - firmware version: 20220618; Add P105 command - configure the working network of the cellular communication module - firmware version: 20220815; Update P94 command-P45 unlock&lock report-extended field report- firmware version: 20220815;	October 18，2022
V1.7	**Function optimization:** 1.Add P45 lock rope pull out event type- firmware version:20230324;	April 18, 2023

	After pull out lock rope operations, report a position data synchronously, so as to obtain the latest lock rope and motor status.no need to wait the time interval of data reporting(P04 command setting). **Added commands:** 1.Add P67 command - The password verification function of configuration parameters - firmware version:20220815;	

Preface

JT701D is a mobile asset monitoring and management product based on the JT701 electronic smart lock. The product currently supports 2G/4G communication and has a built-in battery of 15000mAH. JT701D products have been optimized and improved in terms of low power consumption, peripheral expansion, and functional design. Diversified working mode, according to the power consumption needs, added deep sleep mode, tracking mode in the existing sleep mode. The default 50 RFID authorization cards will be expanded to 500 RFID authorization cards.In terms of security, a control unlocking channel has been added. For example, the user can specify whether the lock can be unlocked through SMS, RFID authorization card, serial port, Bluetooth, and GPRS network channel.In terms of peripheral expansion, JT701D can support 10 JT126 wireless temperature and humidity sensors or 10 JT709 Bluetooth sub-locks to work at the same time. JT701D is with key-free design, RFID/ remote unlocking, large capacity battery and long working time. It is also with Built-in wireless module, real-time online monitoring, built-in GPS module, global positioning tracking, security monitoring, illegal unlocking alarm and other functions.It is suitable for remote monitoring of containers, flatbed trucks, van trucks, etc.

All position data or unlock/lock event's report time involved in this protocol are UTC time.This product only supports TCP channel and SMS channel communication by default.If you need MQTT, HTTP or UDP, etc., you need to communicate with the sales staff and customize the firmware.

Due to the continuous improvement and optimization of the product, this document can only accurately describe the functions and features of the device at the time of writing this document. If there is any change in the future, please contact our sales to obtain the latest protocol manual. Please forgive us without notice.

Product Description

Working mode

Standby sleep mode (Wake up with wake-up source)

The device is in standby sleep mode by default. In this mode, the device can be awakened by an external wake-up source. And send data according to the preset data reporting interval, otherwise the device will report a piece of data at 30-minute RTC timing interval, then go to sleep again.

Deep sleep mode (low power sleep)

In the default configuration, when the battery power of the device is less than 5%, it will enter the deep sleep mode. In this mode, the GPS and GSM communication modules are turned off and cannot report position data. So you can swipe the RFID authorization card to unlock, open the back cover of the device, or charge the device to wake up the device. After waking up the device, the device will detect the current battery level whether can report data, otherwise the device enters the deep sleep state again.

Tracking mode (real-time tracking)

When the tracking mode is enabled, the device will continue to report position data without going to sleep. Until the battery power is below 5%, the device enters a deep sleep state.When the device is awakened from charging, it will continue to maintain the tracking mode until the user sends a P54 command to cancel the tracking mode.

Deep sleep Warehousing sleep mode (warehousing mode)

The SIM card has been inserted into the device and the relevant parameters have been configured. In order to solve the inconvenience of transportation safety, saving power consumption during transportation, and re-opening the back cover, the user sends the P91 command, and the device will enter this warehousing mode. In this mode, the device cannot be woken up by vibration, it needs to be woken up by swiping the RFID card and charging the device.

Note: This mode is only supported on firmware version - 20220106 and later

RFID card description

The standard firmware of JT701D device supports 500 RFID authorization cards by default, which can be used to swipe the card to unlock. The JT701 device standard firmware only supports 50 RFID authorization cards by default.

Wake-up source description

No.	Wake-up source	Prerequisite: The device is in standby mode
1	Restart the terminal (Can't configure off)	After power on, wake up and work for 10 minutes, during which there is no other wake-up source, then sleep;
2	Vibration wake (Can configure off)	After detecting the vibration, wake up and work for 10 minutes, during which there is no other wake-up source, then sleep;
3	Open back cover (Can't configure off)	After the detection back cover is opened, wake up and work for 10 minutes, during which there is no other wake-up source, then sleep;
4	Lock rope inserted/unplug (Can't configure off)	Detect inserted/unplug of the lock rope, wake up and work for 10 minutes, during which there is no other wake-up source, then sleep;
5	Charging (Can't configure off)	Detect external charging, wake up and work for 10 minutes, during which there is no other wake-up source, then sleep;
6	Swipe RFID card (Can't configure off)	Detect swiping RFID card, wake up and work for 10 minutes, during which there is no other wake-up source, then sleep;
7	SMS, Call wake-up (Can configure off)	Detect the SMS command or calling sent by the VIP mobile phone number, then wake up and work for 10 minutes, during which there is no other wake-up source, then sleep;
8	RTC timing wake-up (Can't configure off)	After waking up at a preset time interval and uploading a piece of data, then sleep;

9	Lora wake-up (optional) (Can't configure off)	Lora Gateway detects that the peripheral requests to send data. After waking up and uploading the peripheral data, there will be no other wake-up source during the period, then sleep.

Data storage

The device is with the function of supplementary transmission of blind zone data. When it is unable to connect to the GPRS network, the device will save all position data, alarm data, unlock/lock reports, and peripheral data generated during the period to FLASH.The total number of data stored in the device's blind area shall not be less than 20,000.When the GPRS network signal is restored and the device is connected to the platform, the blind zone data generated during the period will be reported actively.

Currently JT701D device does not save data for a long time. All data is cached in FLASH before sending. Each time a piece of data is successfully sent, this piece of data in FLASH will be automatically deleted.

Data transmission and priority

The protocol uses big-endian network byte order to transfer words and double words.The agreement is as follows: The transmission agreement of byte (BYTE): according to the byte stream transmission; Word transmission convention: first transfer high eight bits, then transfer low eight bits;The transmission convention of double byte (DWORD) : first pass the high 24 bits, then pass the high 16 bits, then pass the high 8 bits, finally pass the low 8 bits.

The real-time position data has the highest priority, followed by the second new position data;The P45 unlock/lock report, alarm data, and blind area data are reported without priority according to the FLASH storage sequence. In order to ensure that customers can obtain the latest device position and status information, real-time and second new position data are reported in a last in, first out manner; Blind area data, in accordance with the first-in, first-out method of data reporting.

Protocol Based

Command format

GPRS or SMS command format:

No.	Item	Length (bytes)	Description
1	Packet header	1	Fixed as"("
2	Command word	3	Such as P03 etc.
3	Separating character	1	","
4	Parameter	N	Each parameter separated by a comma
5	Packet End	1	Fixed ad") "

Device report command response format:

No.	Item	Length (bytes)	Description
1	Packet header	1	Fixed as“ (”
2	Device ID	10	Such as 8010101998, which is the ID number of the device
3	Separating character	1	“,” comma
4	Command word	3	Such as P03 etc.
5	Separating character	1	,” comma
6	Parameter	N	Each parameter separated by a comma
7	Packet End	1	Fixed as“) ”

Escape character processing-peripheral data

Note: Currently only WLNET,5 peripheral data needs to handle escape characters. Others such as position data, command response and P45 unlock/lock report do not need to deal with escape characters.

When the WLNET,5 peripheral data content contains 0x28, 0x29, 0x2C, 0x3D special characters, the JT701 device firmware will convert them to 0x3D 0x15, 0x3D 0x14, 0x3D 0x11, 0x3D 0x00. For example, WLNET, 5 peripheral data. On the platform side, the escape character needs to be restored to real data according to the following sequence. 0x3D 0x00 must be replaced at the end, other no order requirements.

0x3D 0x15 →0x28
0x3D 0x14 → 0x29
0x3D 0x11 → 0x2C
0x3D 0x00 → 0x3D

Command and Data channel

Item	Description
■GPRS	Represents command or position data that can be sent or reported over the GPRS-TCP channel
■SMS	Represents command or position data that can be sent or reported over an SMS channel
■UART	Indicates that an command can be sent over a serial port
■USBHID	Indicates that an command can be sent over the USBHID channel

Protocol Integration Instructions-Platform and Device Interaction

Please reference to document《JT701D Protocol -Platform Integration GuideV1.4》

Device Report Binary Data -GPRS

Position and alarm data format (HEX)

Function Description	Used to record the operation and information of the device such as position, device status, alarm and so on
Production conditions	Position data is reported regularly according to the preset upload interval; Alarm data. When the alarm is triggered, it is reported immediately.
Data channel	■GPRS
Platform response command	(P69,0,86)

Data example1：

24800062001119110034180421162259223483101135505 43F12980000002D060000000020E028109228661F000100000F0F0F0F0F0F0F0F000001CC0156

Data example2：

Note:

Firmware version: 20220304 and later versions, the device IMEI field is reported by default.

24800062001119110034180421162259223483101135505 43F12980000002D060000000020E028109228661F000100008688220402481 95F000001CC0156

Position data serial number: 0x56 → 86

Platform response command: (P69,0,86)

No.	Item	Value (HEX)	Lengh (bytes)	Description
1	Protocol header	24	1	It is fixed to 0x24, which is the ASCII "$" character.
2	Terminal ID	8000620011	5	The ID number of the device is fixed to 5 bytes in length.
3	Protocol	19	1	19：Represents the JT701D protocol version number

	version			17 : Represents the JT701 protocol version number
4	Device type	1	0.5	1 ：Regular rechargeable JT701.
5	Data type	1	0.5	1 Represents real-time position data 2 Represents alarm data 3 Represents blind area position data 4 Represents sub-new position data (newly added by JT701D)
6	Data length	0034	2	0x34→ 52 bytes, which means that the data length from the **date** field to the **data serial number** is 52 bytes
7	Date	180421	3	DDMMYY format. Here is April 18, 2021 for UTC time
8	Time	162259	3	hh:mm:ss format. Here, 16:22:59 is UTC time
9	Latitude	22348310	4	22348310, as defined in the DDMM.MMMM format, this latitude value is: 22.580517° 22 + 34.8310/60 = 22 + 0.580517 = 22.580517°
10	Longitude	113550543	4.5	113550543, as defined in the DDDMM.MMMM format, this longitude value is: 113.917572°
11	Direction indicator	F	0.5	The rightmost bit is BIT0, and the leftmost bit is BIT3. 1: BIT3 ,fixed value.1 1: BIT2 means east longitude, if 0 means west longitude. 1: BIT1 means north latitude, if it is 0, it means south latitude. 1: BIT0 means positioning, if it is 0, it means GPS not positioning. E.g: F = 1111, east longitude, north latitude, GPS positioning 9 = 1001, west longitude, south latitude GPS positioning
12	Speed	12	1	The unit is nautical mile/hour, need to be converted to kilometers/hour That is, the current speed is 33.3 km/h 0x12 → 18 → 18 * 1.85 = 33.3
13	Direction	98	1	0x98 = 152, multiplied by 2 is 304, that is, the direction is 304 degrees
14	Mileage	0000002D	4	The current mileage is 45 kilometers 0x0000002D → 45
15	Number of GPS satellites	06	1	The number of GPS satellites, the number of GPS satellites is 6.
16	Bind vehicle ID	00000000	4	The vehicle ID number currently bound to the center, expressed in hexadecimal. As a reserved field, it is currently fixed at 0x00000000
17	Device status	20E0	2	The various states and alarms of the device, the rightmost is the low byte (Byte1), and the leftmost is the high byte (Byte2). The detailed definitions are as follows: 0x20E0 → 00100000 11100000 (binary)

Byte2.BIT5 = 1 Indicates that the back cover is closed
Byte1.BIT7 = 1 Indicates motor is locked
Byte1.BIT0 = 0 Indicates non-base station positioning

Byte.BIT	Description
Byte1.BIT0	Whether base station positioning: 1 means base station positioning, 0 means non-base station positioning
Byte1.BIT1	1 means Enter fence alarm, 0 means Normal
Byte1.BIT2	1 means Exit fence alarm, 0 means Normal
Byte1.BIT3	1 means Lock Rope cut alarm, 0 means Normal
Byte1.BIT4	1 means Vibration alarm 0 means Normal (Firmware version: 20211224 and later versions support vibration alarm; previous firmware version, no vibration alarm)
Byte1.BIT5	1 means that the platform is required to send ACK command 0 means that the platform is not required to send ACK command (all JT701D data needs to be acknowledged by the platform)
Byte1.BIT6	Lock rope state 1 means lock rope inserted, 0 means lock rope pull out
Byte1.BIT7	Motor state 1 means Motor locked 0 means Motor unlock
Byte2.BIT0	1 means long-time unlocking alarm, 0 means Normal
Byte2.BIT1	1 means Wrong password alarm(the password is entered incorrectly for 5 consecutive times) 0 means Normal
Byte2.BIT2	1 means Swipe illegal RFID card alarm 0 means Normal
Byte2.BIT3	1 means Low battery alarm 0 means Normal
Byte2.BIT4	1 means Back cover opened alarm 0 means Normal
Byte2.BIT5	Back cover status: 1 means cover closed, 0 means back cover opened

				Byte2.BIT6: 1 means Motor stuck alarm; 0 means Normal Byte2.BIT7: Reserved
18	Battery level	28	1	The power indicator is the currently collected power value, expressed in hexadecimal digits. 0x28 means the current remaining power is 40% 0x64 means that the remaining power is 100%, If it is 0xFF, it means it is charging.
19	CELL ID position Code	10922866	4	1092 is the CELL ID number, For a 3G or 4G JT701 device, the CELL ID field is the lower 16 bits of the CELL ID of the 3G module, which needs to be combined with field 25 2866 is the location code, namely LAC.
20	GSM signal quality	1F	1	Indicates the current GSM signal strength, 1F means 0x1F, that is, the signal value is 31. When the device cannot detect any GSM signal, this value is 99
21	Fence alarm ID	05	1	Entry and exit fence alarm ID, up to 10 fences
22	Expanded Device status	01	1	Expanded Device status: 0x01 → 0000 $0001_{(binary)}$ $0001_{(binary)}$ $=1_{(decimal)}$ Indicates RTC timing wake up Refer to the following Expanded device status
23	MNC-Hightbyte	00	1	Operator code Mobile need to be combined with MNC-Lowbyte field 28 0x0001 → 1 **Note:** Before Firmware version:20211224, this field defaults to 0x0F, and MNC has only one byte. Starting with this firmware version, MNC is expanded to two bytes. When the platform is integrated, it is compatible with the previous firmware recommendation: when this field is 0x0F, this ,MNC extended field is ignored; otherwise, this field is combined with the 28th field.
24	Expanded Device Status2	01	1	Expanded Device status2 0x01 → 0000 $0001_{(binary)}$ $1_{(binary)}$ Indicates Battery charging Refer to the following Expanded device status2 **Note:** New added since firmware version: 20221118 and later version
25	IMEI number (reserved)	868822040248195F	8	IMEI number: 868822040248195 The first 15 digits are BCD codes, followed by an F **Note:** Firmware version: 20220304 and later versions are enabled by default.

				For previous firmware versions, this field defaulted to 0F0F0F0F0F0F0F0F
26	CELL ID	0000	2	The CELL ID value of 2G module is fixed to 0x0000 3G/4G module CELL ID high 16 bits, need to be combined with field 19 - CELL ID position Code
27	MCC	01CC	2	Country code, China 0x01CC → 460
28	MNC-Lowbyte	01	1	Operator code Mobile need to be combined with MNC-Hightbyte field 23 0x0001 → 1
29	Data serial number	56	1	Data serial number 0x56 → 86 Each time a piece of data is sent, it will add 1, from 0x00 to 0xFF, and the serial number will be cleared when the device restart. (JT701D, this data serial number is used as the platform P69 command-response serial number)

Extended device status

0x01 → 0000 0001(binary)

0001(binary) =1(decimal) Indicates RTC timing wake up

Byte1.Bit0 - Byte1.Bit3	Wake-up source: 0: Device restart, 1: RTC timing wake up, 2: Vibration, 3: Open the back cover, 4: The lock rope inserted or unplug(cut), 5: Charging, 6: Swipe RFID card, 7: Lora, 8: VIP SMS, 9: Non-VIP SMS 10:Bluetooth
Byte1.Bit4	Reserved
Byte1.Bit5	Reserved
Byte1.Bit6	Reserved
Byte1.Bit7	Reserved

Extended device status2

0x01 → 0000 0001(binary)

1(binary) Indicates Battery charging

Byte1.Bit0 -	1:Battery charging 0:No charging

Byte1.Bit1	Reserved
…	…
Byte1.Bit7	Reserved

P45 Lock & unlock report

Function Description	When the device is locked or unlocked, the lock or unlock report will be generated immediately
Production conditions	RFID Card unlocking, remote password unlocking, SMS command unlocking and other unlocking methods The lock rope is inserted and the device is automatically locked
Data channel	■GPRS
Platform response command	(P69,0,24)

Rawdata example1(HEX):
2838303030363230303131 2C5034352C3137303732302C3032303631342C32322E35363033352C4E2C3131342E30313634302C452C412C33362C3237302C312C312C303030383632373833392C302C302C32342C3529
Convert to ASCII:
(8000620011,P45,170720,020614,22.56035,N,114.01640,E,A,36,270,1,1,0008627839,0,0,24,5)

Event serial number: 24
After the ASCII format,**the number after the 16th comma**,which is the serial number of the lock and unlock report，is used as the platform P69 command-response serial number.
Note1:
Since other fields may be added to the mileage value field in the future, when the platform responds, it is not recommended to use the second comma from the bottom as the event serial number of the unlock/ lock report. New fields in the future may cause errors in the response from the platform.

Platform response command: (P69,0,24)

Rawdata example2 (HEX):
2838303030363230303131 2C5034352C3238303232322C3039313734342C32322E35383136312C4E2C3131332E39313532342C452C412C302C302C342C312C303030303030303030302C312C302C342C33372C3836383832323034303234383139352C3029
Convert to ASCII:
(8000620011,P45,280222,091744,22.58161,N,113.91524,E,A,0,0,4,1,0000000000,1,0,4,37,868822040248195,0)

Event serial number: 4

,868822040248195 The IMEI number of the device. After enabling the P94 command function, this field is reported. The default ,JT701D device doesn't report this field.

0 When the device is unlocked or locked,the fence ID that it is in. If no fence information is configured or not in the fence, the default is 0. After enabling the P94 command function, report this field. The default device does not report this field.

Note2:

Firmware version: 20220304 The P94 command enables P45 unlock&lock report-extended field report.

Platform response command: (P69,0,4)

More examples:

Dynamic password unlocking-not associated with Geo-fence

(8000400055,P45,070121,074116,22.58071,N,113.91734,E,A,0,0,6,**98**,0000000000,1,0,13,0)

Remote static password unlock

(8000400055,P45,060121,081257,22.58047,N,113.91753,E,A,0,0,4,1,0000000000,1,0,5,58)

Swipe authorized RFID card to unlock - associated Geo-fence - refused to unlock outside the fence

(8000400055,P45,040121,104728,22.55801,N,114.00846,E,A,0,244,1,**99**,0008627839,0,0,2,29)

The device is automatically locked

(8000400055,P45,060121,081012,22.58080,N,113.91751,E,A,0,0,5,0,0000000000,0,0,3,58)

Note: When parsing the data in the table below, the separator comma "," is omitted

No.	Name	Value(ASCII)	Description
1	Pocket header	(	Fixed as "("
2	Terminal ID	8000620011	The ID number of the device is fixed to 10 bytes in length.
3	Command word	P45	Command word: P45,lock and unlock report,
4	Date	170720	2020-07-17 UTC time
5	Time	020614	02:06:14 UTC time
6	Latitude	22.56035	It is in the form of DD.DDDDD. The unit is degree
7	North-south latitude indicator	N	Latitude (positive N: north latitude, negative S: south latitude)
8	Longitude	114.01640	It is in the form of DDD.DDDDD. The unit is degree
9	East-west longitude indicator	E	Longitude (positive E: east longitude, negative W: west longitude)
10	Positioning Sign	A	A means GPS positioning, V means no positioning

11	Speed	36	The unit is kilometers/hour, which is 36 kilometers/hour
12	Direction	270	The unit is degrees, which is 270 degrees
13	Event source type	1	Event source type, there are the following event sources: 1: Means to swipe the RFID authorization card; 2: Means swiping an illegal RFID card; 3: Indicates the binding of swiping the vehicle ID card; 4: It means remote static password unlocking; 5: Indicates that the device automatically locked; 6: Indicates remote dynamic password unlocking; 7: Indicates Bluetooth unlock (static or dynamic password); 8:indicates lock rope pull out event--Added since firmware verison:20230324 or later;
14	Unlock verification	1	Indicates whether the unlock verification is passed 1 means pass the verification and allow unlocking; 0 means that the verification is not passed, and the unlocking is refused; If the event source is 2, 3, 5, this value is fixed to 0; If the event source is 4, this value is fixed to 1 or 0 Currently, the associated fence cannot be configured for static password unlocking If the event source is 1 and 6, it means unlock verification, 0 means that the password does not pass the verification, and it refuses to open the lock. 1~10 means fence ID, normal unlocking; 98 means that the associated fence is not opened and the lock is normally unlocked. 99 means open the associated fence, and refuse to unlock outside the fence.
15	RFID Card number	0008627839	Swipe RFID card number 0008627839 If the event source type is 4, 5, 6, 7, then this value is 0000000000
16	Password verification	0	If the event source type is 4, 6, 7, then this value is whether the password is correct, 1 when the password is correct, and 0 if the password is incorrect For other event source types, fixed to 0
17	Number of incorrect password entries	0	If the event source type is 4, 6, 7, then this value is the number of incorrect password input For other event source types, fixed to 0
18	Event serial number	24	The event serial number indicates the number of event records sent by the device. JT701D, the platform needs to use this event serial number as the P69 command-serial number.
19	Mileage value	5	5 Kilometer
20	Device IMEI	868822040248195	The IMEI number of the device. After enabling the P94 command function, this field is reported. The default device does not report

	Number		this field.
21	Fence ID	0	When the device is unlocked or locked,the fence ID that it is in. If no fence information is configured or not in the fence, the default is 0. After enabling the P94 command function, report this field. The default device does not report this field.
22	Pocket End	)	Fixed as ")"

P52,2 Dynamic password report

Function Description	The device actively reports the dynamic password to the platform, and informs the platform of the current dynamic password of the device. The password is a random 6-digit number. The platform can record this password, and unlock the device through the P52 remote dynamic password unlock command.
Production conditions	P52,1 After the dynamic password unlocking function is enabled, the device can unlock the lock by password, swiping the authorized RFID card, and pull out the lock rope. When the lock rope is inserted next time and the lock is automatically locked, the device actively reports this dynamic password report to the platform at 1 minute intervals
Data channel	■GPRS
Platform response command	(P52,2,113271)

Data sample analysis(HEX):
28383030303632303031312C5035322C322C31313332373129
Convert to ASCII:
(8000620011,P52,2,113271)

Current dynamic password: 113271
Platform response command: (P52,2,113271)

Note: When parsing the data in the table below, the separator comma "," is omitted

No.	Name	Value(ASCII)	Description
1	Pocket header	(	Fixed as "("
2	Device ID	8000620011	The ID number of the device is fixed to 10 bytes in length.
3	Command word	P52	Dynamic password command word
4	Command ID	2	Corresponding command ID under P52 command word
5	Dynamic	113271	Random 6 digits

	password		
6	Pocket end	)	Fixed as ")"

P22,2 The device actively requests time synchronization

Function Description	The device actively requests time synchronization from the platform, which is sent at 1 minute intervals each time, for a total of three times. When the platform receives the time synchronization request from the device, it sends the P22 command to grant UTC time to the device.
Production conditions	The device shuts down for a period of time, and the device actively requests the platform to provide time to it after being turned on.
Data channel	■GPRS
Platform response command	(P22,150720164328) 150720164328 When the platform receives the timing request, the current UTC time on the server side

Data sample analysis (HEX):
28383030303632303031312C5032322C3229
Convert to ASCII:
(8000620011,P22,2)

Note: When parsing the data in the table below, the separator comma "," is omitted

No.	Name	Value(ASCII)	Description
1	Pocket header	(	Fixed as "("
2	Terminal ID	8000620011	The ID number of the terminal is fixed to 10 bytes in length.
3	Command Word	P22	P22 command word
4	Command ID	2	Corresponding command ID under P22 command word
5	Pocket end	)	Fixed as ")"

@JT Heartbeat packet data

Function	Used to maintain the Socket TCP communication connection between the device and the

Description	platform, facilitating real-time response to commands
Production conditions	In standby mode or tracking mode, if the data upload interval is greater than 80 seconds after waking up, this data will be reported
Data channel	■GPRS
Platform response command	No need to answer

Data sample analysis(HEX):
283830303036323030313 12C404A5429
Convert to ASCII:
(8000620011,@JT)
Note: When parsing the data in the table below, the separator comma "," is omitted

No.	Name	Value(ASCII)	Description
1	Pocket header	(	Fixed as ”(”
2	Terminal ID	8000620011	The ID number of the terminal is fixed to 10 bytes in length.
3	Heartbeat package	@JT	Heartbeat package
4	Pocket end	)	Fixed as ”)”

Command response data

Reference this article ASCII Command-GRPS/SMS/UART Response commands and Description.

WLNET,5 Peripheral data

Function Description	Used to display the relative position, temperature and humidity, lock status and other information of the temperature and humidity sensor JT126 or the sub-lock JT709 sensor
Production conditions	When the device is bound to the temperature and humidity sensor JT126 or the sub-lock JT709 sensor ID, JT126 and JT709 establish communication with the JT701D device and report this data
Data channel	■GPRS
Platform response command	(P69,0,18)

Data sample analysis(HEX):

283831333036333030312C312C3131302C574C4E45542C352C322C19042111353422348344113550520F0000190421113533E01726000412016810570400400000000310029

Convert to ASCII:
(8130630001,1,110,WLNET,5,2,__!_54"4ƒD_5PR_ Subsequent content is non-visible characters

Detailed data analysis and platform response command:
Reference documents《JT126 Temperature Sensor and JT709 Sub Lock Integration ManualV1.4》

Device report data -SMS

SMS Position data

Function Description	Used to view the current location, speed, GPS, lock status, battery level information of the device
Production conditions	Send (P02) short message command through VIP mobile phone number
Data channel	■SMS

The position data of the short message is sent to the VIP mobile phone number, and its specific format is as follows:

8010101998,09-28 12:11:02,Speed:0km/h,Battery:85%,GPS:3,Lock Close,
http://maps.google.com/?q=22.549737,114.076685

No.	Name	Text Content	Description
1	Device alias or Device ID number	Such as "John" or 8010101998, etc.	The default is the device ID, and the device alias needs to be configured through the command P65
2	Delimiter	“,”	
3	Date time	09-28 12:11:02	Month day hour minute second The default is the current year For example: The year of sending the SMS command is 2021 Then the date is 2021-09-28 12:11:02 The default is UTC time, and the time

			zone needs to be adjusted through the P10 command.
4	Delimiter	“,”	
5	Speed	Speed:0km/h	
6	Delimiter	“,”	
7	Battery level	Battery:85%，	if it is charging, it will display: Charging
8	Delimiter	“,”	
9	GPS signal	GPS:3	Number of GPS satellites If this value is 0, it means GPS is not located
10	Delimiter	“,”	
11	Lock motor switch state	Lock Open	Lock Open Lock Closed
12	Delimiter	“,”	
13	Carriage return	0x0D 0x0A	
14	Longitude and Latitude Field Link	http://maps.google.com/?q=22.549737,114.076685	Google address link: 22.549737 represents the north-south latitude, a positive value represents the north latitude, and a negative value represents the south latitude; The 114.07668 field represents east-west longitude, a positive value represents east longitude, and a negative value represents west longitude

SMS Alarm data

Function Description	This SMS alarm is generated when the device detects the lock rope cut, illegal card swiping, long-time unlocking, wrong password input for 5 consecutive times, entering the electronic fence, and exiting the electronic fence.
Production conditions	**Prerequisite:** The user has passed the P11,P12 command-configure the VIP mobile phone number and VIP number to receive the SMS alarm, and the P40 command has turned on the SMS alarm switch for the corresponding alarm **Creation conditions:** ① Cut the lock rope: When the device is in the locked state, if the lock rope is cut, an alarm data will be generated; ② Swiping unauthorized RFID card: Swiping the card with an unregistered RFID card will generate an alarm data; ③Long-time unlocking: When the device is in a long-time unlocking state, the default is 120 minutes, an alarm data will be generated; ④Enter the static password incorrectly for 5 consecutive times: When the dynamic or static password is unlocked, the password is incorrect for 5 consecutive times, and an alarm data is generated; ⑤Enter the fence: the equipment enters the fenced area from outside the fence, and an alarm for entering the fence is generated; ⑥Leaving the fence: the device leaves the fenced area and generates a fence alarm; ⑦ Low battery: less than 30% (default, can be modified) for more than 10 minutes, it is considered that a low battery alarm is generated; ⑧Motor stuck: when the motor is over-travel or stuck, an alarm data will be generated; ⑨The back cover is open: When the device detects that the back cover is open, an alarm data is triggered. ⑩Vibration alarm: When the device G-sensor detects that the vibration exceeds the preset vibration alarm threshold, this alarm is generated.
Data channel	■SMS

SMS Alarm data example

Alarm name	Short message alarm content and format
Lock rope cut alarm	ALM, Rope Cut, 8010101998,09-28 12:03:43,Battery:95%,GPS:3, Lock Closed,http://maps.google.com/?q=22.549737,114.076685
Swipe illegal card alarm	ALM, RFID Check, 8010101998,09-28 12:11:02,Battery:95%,GPS:3, Lock Closed,http://maps.google.com/?q=22.549332,114.076561
Long-time unlocking alarm	ALM,Lock Open Timeout, 8010101998,09-28 12:11:02,Battery:95%,GPS:3, Lock Open,http://maps.google.com/?q=22.549730,114.076615
Wrong Password alarm 5 consecutive incorrect	ALM, Password Err Quintic, 8010101998,09-28 12:11:02,Battery:95%,GPS:3, Lock Closed,http://maps.google.com/?q=22.549656,114.076564

passwords alarm	
Vibration alarm	ALM,Vibrate, 8010101998,09-28 04:31:32,Battery:66%,GPS:3, Lock Closed,http://maps.google.com/?q=22.549754,114.076250
Enter fence alarm	ALM,Enter fence,InAreaID:area6,8010101998,09-28 00:02:39,Battery:60%,GPS:3, Lock closed,http://maps.google.com/?q=22.549737,114.076685
Exit fence alarm	ALM,Exit fence,OutAreaID:area6,8010101998,09-28 03:21:45,Battery:58%,GPS:3, Lock closed,http://maps.google.com/?q=22.549737,114.076685
Low battery alarm	ALM,Low Battery: 8010101998,09-28 03:27:48,Battery:58%,GPS:3, Lock closed,http://maps.google.com/?q=22.549736,114.076588
Open the back cover alarm	ALM,Open Back Cover: 8010101998,09-28 03:27:48,Battery:58%,GPS:3, Lock closed,http://maps.google.com/?q=22.549736,114.076677
Motor stuck alarm	ALM,Motor Breakdown: 8010101998,09-28 03:27:48,Battery:58%,GPS:3, Lock closed,http://maps.google.com/?q=22.549736,114.076677

SMS Alarm message analysis

No.	Name	Text Content	Description
1	SMS alarm message header	ALM	Indicates it's a SMS Alarm message
2	Delimiter	","	
3	Alarm Name	Lock Rope Cut	Means SMS alarm name If it is entering and exiting the fence, the alarm name is followed by the ID or the name of the fence to enter or exit the fence ,OutAreaID:area6, Indicates that the device is currently leaving the fence named area6 Or ,InAreaID:4, Indicates that the device is currently entering the fence with fence ID 4

4	Delimiter	“,”	
5	Device alias or Device ID number	e.g. ”John”/7570101998	The default is the device ID, and the device alias needs to be configured through the command P65
6	Delimiter	“,”	
7	Date time	09-28 12:11:02	Month day hour minute second The default is the current year For example: The year of sending the SMS command is 2021 Then the date is 2021-09-28 12:11:02 The default is UTC time, and the time zone needs to be adjusted through the P10 command.
8	Delimiter	“,”	
9	Battery level	Battery:95%，	if it is charging, it will display: Charging(255%)
10	Delimiter	“,”	
11	GPS signal	GPS:3	Number of GPS satellites If this value is 0, it means GPS is not located
12	Delimiter	“,”	
13	Lock motor switch state	Lock Open	Lock Open Lock Closed
14	Delimiter	“,”	
15	Longitude and Latitude Field Link	http://maps.google.com/?q=22.549737,114.076685	Google address link: 22.549737 represents the north-south

			latitude, a positive value represents the north latitude, and a negative value represents the south latitude; The 114.07668 field represents east-west longitude, a positive value represents east longitude, and a negative value represents west longitude

Platform response command -GPRS

P69 Platform general response command

Send Command	(P69,**0,123**)
Function Description	Used to acknowledge all position data, alarm data, P45 report and WLENT,5 peripheral data. The P35, P46 command of JT701 is invalid to the response of JT701D device.
Command Parameter	**0,123**
Command Parameters Description	**0** means platform has received data. 1 means data is wrong, resend again. **123** means data serial number, please reference to 《JT701D Protocol -Platform Integration GuideV1.4》
Response command	None
Response command Description	None
Command channel	■GPRS

P22 Platform time synchronization command

Send Command	(P22,**150720164328**)

Function Description	If platform received time synchronization request from device (8000620011,P22,2) platform send this P22 command.
Command Parameter	**150720164328**
Command Parameters Description	**150720164328** Day/Mont/Year/Hour/Minute/Second, it is UTC time, namely: 2020-07-15, 16:43:28
Response command	(8000620011,P22,**1**)
Response command Description	**1** means time synchronization success, 0 means time synchronization failed. **Note:** This time synchronization command can only take effect when the device is not currently acquiring GPS positioning; when the device is currently positioned, GPS satellite time will be used first, and the platform will fail to send this command.
Command channel	■GPRS

P52,2 Platform response to dynamic password report

Send Command	(P52,**2,113271**)
Function Description	Once platform received dynamic password report (8000620011,**P52,2,113271**) from device, it response this P52,2 command
Command Parameter	**2,113271**
Command Parameters Description	**2** means P52 command word, ID2 **113271** means current dynamic password reported by device, a random 6-digit number
Response command	None
Response command Description	If platform response it successfully, the device will not report the dynamic password report; otherwise, it will continue to report the dynamic password report at 1 minute intervals.
Command channel	■GPRS

ASCII Command -GPRS/SMS/UART/USB

Device status

P01 Query firmware version

Send Command	(P01)
Function Description	Query current firmware version and remaining battery level.
Command Parameter	None
Command Parameters Description	None
Response command	(8130630001,P01,**JT701D_20210311_China_Jointech_SIM7600X_LoRa_PCBV2.3_R1.2.7 ,41%**)
Response command Description	**JT701D_20210311_China_Jointech_SIM7600X_LoRa_PCBV2.3_R1.2.7** JT701D current device model JT701D. 20210311 firmware version is 20210311, SIM7600X Cellular module model name LoRa means the hardware built-in LoRa gateway. If it is NoLora, Indicates that the hardware has no Lora gateway PCBV2.3_R1.2.7 hardware version **41%** means remaining battery level
Command channel	■GPRS ■SMS ■UART ■USBHID

P02 Query the current location and status of the device

Send Command	(P02)
Function Description	Query the current location of the device and the device status information, and the short message content will be sent to the VIP mobile phone number.
Command Parameter	None
Command Parameters Description	None
Response	8010101998,09-28 12:11:02,Speed:0km/h,Battery:85%,GPS:3,Lock Close,

command	http://maps.google.com/?q=22.549737,114.076685
Response command Description	Please reference to SMS position data section for detailed response content.
Command channel	□GPRS ■SMS □UART □USBHID

P14 Query IMEI number of GSM module

Send Command	(P14)
Function Description	Query the IMEI number of the 2G/3G/4G communication module
Command Parameter	None
Command Parameters Description	None
Response command	(8130630001,P14,**869999040159249**)
Response command Description	**869999040159249** IMEI Number
Command channels	■GPRS ■SMS ■UART ■USBHID

P68 Query the IMSI and ICCID of the SIM card

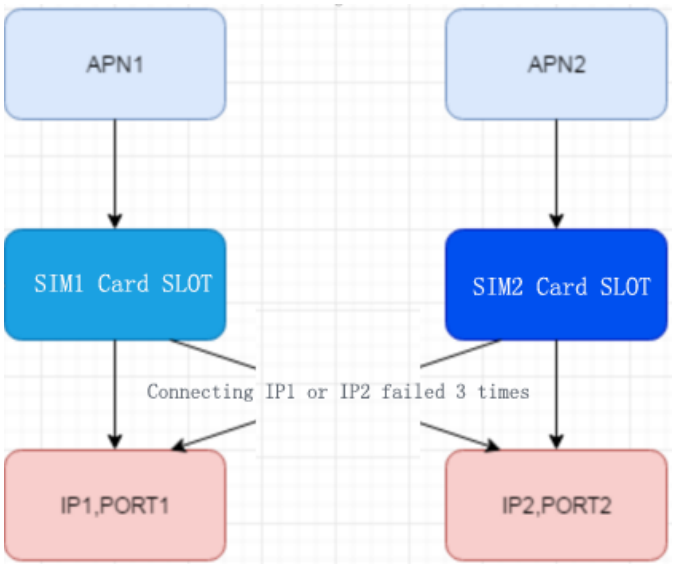
Send Command	(P68,**1,0**) (P68,**2,0**)
Function Description	Query the IMSI and ICCID of the SIM card
Command Parameter	**1,0**
Command Parameters Description	**1** means query IMSI, 2 means query ICCID **0** query
Response command	(8130630001,P68,1,**460046236100038**) (8130630001,P68,2,**89860442191970250038**)
Response command	**460046236100038** means SIM card IMSI **89860442191970250038** means SIM card ICCID

Description	
Command channel	■GPRS ■SMS ■UART ■USBHID

System configuration

P06 Main IP1 and secondary IP2, and SIM card working theory

1) Main IP1 and secondary IP2 are no longer bound to the SIM card slot
2) Dual SIM switching theory: The device will record the APN corresponding to the SIM card slot. When it is online for the first time, first connect the main IP1 and port, and after three attempts failed, connect IP2 and the port.
3) APN1 APN2 is bound to SIM cards slots.
4) user installs dual SIM cards. at present, JT701D only support the working mode dual SIM card single SIM card standby. If one SIM card is working, another SIM card does not work.
   The device detect the current SIM card and its APN and APN parameters can be connected to the host IP (domain name) and port according to below diagram.



P06,0/P06,1 Query and Set main IP1/port/SIM1 card slot corresponds to APN

Send Command	(P06,**1,47.112.122.222,10001,internet,gprs,gprs**) (P06,**1,jt701.jointcontrols.com,10001,CMNET,,**) (P06,**0**)
Function Description	Query and configure main IP1(domain)/TCP port and APN, APN account related to SIM1 card slot

Command Parameter	**1,47.112.122.222,10001,internet,gprs,gprs**
Command Parameters Description	**1** Operation mode, 1 set main IP1 ; 0 query main IP1 **47.112.122.222** main IP address or domain. **10001** TCP port, maximum is 65530 **Internet** GPRS network connecting name APN. (maximum 50 digitals) **Gprs** APN user, If none APN user name, blank value is allowed.(Maximum 50 digitals) **gprs** APN password. If none APN password, blank value is allowed (maximum 50 digitals)
Response command	(8130630001,P06**,47.112.122.222,10001,internet,gprs,gprs,0**)
Response command Description	**47.112.122.222,10001,internet,gprs,gprs** the same to Command parameters description **0** means main IP1
Command channel	■GPRS ■SMS ■UART ■USBHID

P06,2/P06,3 Query and Set secondary IP2/port/SIM2 card slot corresponds to APN

Send Command	(P06**,3,jt701.jointcontrols.com,10001,CMNET,,**) (P06,**3,47.112.122.222,10001,internet,gprs,gprs**) (P06,**2**)
Function Description	Query and configure secondary IP2 , TCP port, and APN, APN account corresponds to SIM2 card slot.
Command Parameter	**3,jt701.jointcontrols.com,10001,CMNET,,**
Command Parameters Description	**3** Operation mode, 3 set secondary IP2 ; 2 query secondary IP2 **jt701.jointcontrols.com** host IP address or domain. **10001** TCP port, maximum 65530 **CMNET** GPRS network connection, name APN.(maximum 50 digitals) APN user name, none APN , blank value is allowed (maximum 50 digitals) APN password. If none APN password, blank value is allowed (maximum 50 digitals)
Response command	(8130630001,P06**,jt701.jointcontrols.com,10001,CMNET,,,1**)
Response command Description	**jt701.jointcontrols.com,10001,CMNET,,,1** is the same to command parameters description **1** means secondary IP2
Command channel	■GPRS ■SMS ■UART ■USBHID

P04 Query and Set data upload interval and RTC timing upload interval

Send Command	// Configure the device to report data at 60-second intervals after waking up, and to report data at 30-minute intervals when in sleep mode. (P04,**1,60,30**) (P04,**0**)
Function Description	Query and set the data upload time interval after the device wakes up, and the RTC timing wake-up interval; If device wakes up, it will report position data at the data upload interval, and if it is in sleep working mode, it will report location data at the RTC timing wake-up interval.
Command Parameter	**1,60,30**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **60** Data upload time interval, unit: second, Value range [5~600] **30** RTC timing wake-up interval, unit: minute Value range [30~1440] **Note:** Since the firmware version 20210311, this RTC timing wake-up interval, the value range is modified to [5~1440]
Response command	(8130630001,P04,**60,30**)
Response command Description	**60,30** the same to command parameters description
Command channel	■GPRS ■SMS ■UART ■USBHID

P92 Query and Set the position data reporting interval when the device is unlocked or locked

Send Command	//Set the position data reporting interval to 30 seconds when the device is unlocked; and 60 seconds when the device is locked
	(P92,**1,1,30,60**)
	
	//Disable this function
	(P92,**1,0**)

Function Description	Query and set the time interval for location data reporting when the device is unlocked or locked. by default,this function is disabled; After this function is turned on, the P04 command configuration will be invalid; after this function is turned off, the P04 command configuration will continue to take effect.

	Note: This command was added in firmware version 20220304 and later.
Command Parameter	**1,1,30,60**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **1** 1 means enable this function, 0 means disable this function **30** Position data reporting interval in unlocked state, unit in seconds. Value range [5~600] **60** Position data reporting interval in the locked state, unit in seconds .Value range [5~600]
Response command	(8130630001,P92,**1,30,60**)
Response command Description	**1,30,60** the same to command parameters description
Command channel	■GPRS ■SMS ■UART ■USBHID

P99 Query and Set Cornering Report

Send Command	// **Enable** cornering report, the device calculates the latitude and longitude turning angle of the front and rear sampling points, and reports a piece of position data when it exceeds 20° (P99,**1,1,3,20**) // **Disable** cornering report function (P99,**1,0**) (P99,**0**)
Function Description	Query/set cornering reporting position data. After this function is turned on, when users view the historical tracks of the device on the WEB based software of the platform, the track line will be drawn more smoothly at the turn of the route on the map, which is closer to the actual driving route. **Note:** After this function is turned on, the GNSS module of the device will continue to run and cannot enter the intelligent power saving mode, and the power consumption of the whole machine will increase. This command was added in firmware version 20220618 and later
Command Parameter	**1,1,3,20**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **1** Enable this function ; 0 Disable this function. In default it is disabled. **3** indicates the position data sampling interval. Unit: second .Value range [1~600] **20** indicates the turning angle. Value range [0~360]
Response	(8130630001,P99,**1,3,20**)

command	
Response command Description	**1** means turn on cornering reporting **3** means the sampling interval is 3 seconds **20** means the cornering reporting angle is 20°
Command channel	■GPRS ■SMS ■UART ■USBHID

P39 Query and Set Working time after the device wakes up

Send Command	// Configure the device to work for 5 minutes after it wakes up (P39,**1,5**) (P39,**0**)
Function Description	Query and set the working time after the device wakes up When the device detects a wake-up source such as vibration, opening the cover, charging, inserting the lock rope, etc., it will continue to work for 10 minutes by default; **Note:** This command has been enabled since firmware version 20210720 and later. The previous JT701D firmware version was fixed at 10 minutes.
Command Parameter	**1,5**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **5** Working time after waking up, unit: minute .Value range [3~10]
Response command	(8130630001,P39,**1,5**)
Response command Description	**5** Working time after waking up ,5 minutes
Command channel	■GPRS ■SMS ■UART ■USBHID

P54 Query and Set tracking mode

Send Command	(P54,**1,1**) (P54,**0**)
Function Description	Query and configure tracking mode If the tracking mode is activated, the device will continue to report position data without going to sleep. After the battery power is below 5%, the device enters a deep sleep status. Once the device wakes up from charging, it continues to maintain the tracking mode until the user sends a P54 command to cancel the tracking mode.

Command Parameter	**1,1**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **1** 1 means enable tracking mode, 0 Stop tracking mode
Response command	(8130630001,P54,**1,0**)
Response command Description	**1,0** **1** This value indicates the operation mode, it returns 1 for setting, 0 for query, and can be ignored **0** 0 Indicates that the tracking mode is stopped. 1 means the tracking mode is enabled.
Command channel	■GPRS ■SMS ■UART ■USBHID

P03 Query and Set deep sleep mode

Send Command	(P03,**1,1,5**) (P03,**0**)
Function Description	Query and configure the percentage of battery level which the device enters deep sleep mode. The default is 5%. When the battery power of the device is lower than 5%, it will enter the deep sleep mode. In this mode, the GPS and GSM communication modules are turned off, and can't reports position data. Swipe the RFID authorization card to unlock, open the back cover of the device, and charge the device to wake up the device. **Note:** In the deep sleep state, vibration cannot wake up the device.
Command Parameter	**1,1,5**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **1** 1 means enable this function, 0 means disable this function **5** The battery power is 5%. Value range [5~90]
Response command	(8130630001,P03,**1,5**)
Response command Description	**1,5** **1** Indicates that this feature is activated. **5** Means 5%. If the battery power is less than 5%, the device enters deep sleep mode
Command channel	■GPRS ■SMS ■UART ■USBHID

P37 Query and Set motion detection by G-sensor

Send Command	(P37,**1,126**) (P37,**0**)

Function Description	Query and configure device vibration detection sensitivity The device uses the G-senor acceleration sensor to determine whether it is currently in movement or static state; by adjusting the G-sensor parameters, device is with different sensitivity to detect the motion state in different environments. The smaller the acceleration value, the more sensitive in detection.
Command Parameter	**1,126**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **126** Motion detection threshold, the value range is 0 or [63~500], the unit is mg, the default value is 126. If set value is 0, the G-sensor motion detection function is turned off; After turning off the G-sensor motion detection function, if you need to re-enable the G-sensor function, you only need to reset the valid G-sensor value.
Response command	(8130630001,P37,**126,15**)
Response command Description	**126,15** **126** Indicates that the current motion detection value of G-sensor is 126 mg **15** Customized function parameters. This function can be ignored in standard firmware. Mainly consider command response compatibility
Command channel	■GPRS ■SMS ■UART ■USBHID

P62 Query and Set the initial mileage and mileage statistics speed threshold

Send Command	// Set the initial mileage to 999999
	(P62,**2,1,999999**)
	
	// Query the mileage value of the current device
	(P62,**2,0**)
	
	// Set the speed threshold of mileage statistics to 10 km/h
	(P62,**1,1,10**)
	
	// Query mileage statistics speed threshold
	(P62,**1,0**)

Function Description	Query and configure the initial mileage and mileage statistics speed threshold
Command Parameter	**2,1,999999**
Command Parameters Description	**2** 2 means command ID =2 ,The second command of P62, used to query and configure the initial mileage 1 means command ID =1, the first command of P62, used to query and configure the

	mileage statistics speed threshold **1** Operation mode, 1 set ; 0 query **999999** If the command ID is 1, set the mileage statistics speed threshold in kilometers/hour. If the device is below this speed, the mileage will not be accumulated. It is mainly to filter the mileage statistics error caused by GPS static drift. The default is 10km/h If the command ID is 2, set the initial mileage to 999999 kilometers. Value range [0, 4294967295]
Response command	(8130630001,P62,2,**999999**)
Response command Description	**999999** Set the initial mileage of the device to 999999 kilometers
Command channel	■GPRS ■SMS ■UART ■USBHID

P22 Time synchronization

Send Command	(P22,**150720164328**)
Function Description	User can use this command to synchronize the device's GPS time to the current UTC time. When testing the device indoors for the first time, because it cannot be positioned and cannot be timed by GPS satellites, the time can be synchronized through this command so that the latest real-time position data can be seen on the platform WEB application. If the device is online for the first time, the device will actively send a time synchronization request (8000620011,P22,2). If the platform receives this request, it will send this P22 command to respond to it. **Note:** This command can only take effect once the GPS is not positioning, otherwise the time synchronization will be failed. After the device is positioned by GPS, it will automatically use GPS satellite time.
Command Parameter	**150720164328**
Command Parameters Description	**150720164328** Day/month/year/hour/minute/second the time is UTC time, which is 2020-07-15 16:43:28
Response command	(8130630001,P22,**1**)
Response command Description	**1** means the time synchronization is successful, if it is 0, it means that the time synchronization has failed
Command channel	■GPRS ■SMS ■UART ■USBHID

P13 Factory reset

Send Command	(P13)
Function Description	The device will restore all parameters except the IP address, port, VIP number, APN and APN account ,unlock password to the factory default settings
Command Parameter	None
Command Parameters Description	None
Response command	(8130630001,P13)
Response command Description	None
Command channel	■GPRS ■SMS ■UART ■USBHID

P50 Enable and disable the power switch

Send Command	// Enable power switch
	(P50,**1,1**)
	
	// disable power switch
	(P50,**1,0**)
	
	// Query the status of the power switch
	(P50,**0**)

Function Description	Enable and disable the power switch of the device mainboard. The default is the enabled state, that is, the power switch key can controls turning on and off the device. If it is disabled, when the device is currently powered on, it will not be able to shut down the device by turning on the power key.
Command Parameter	**1,1**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **1** 1 means the power switch is enabled; 0 means that the power switch is disabled. Enabled by default
Response command	(8130630001,P50,**1**)
Response command Description	**1** Indicates that the power switch key is enabled

Command channel	■GPRS ■SMS ■UART ■USBHID

P63 Query and Set GPS static drift optimization function

Send Command	// **Enable** GPS static drift optimization function (P63,**1,1**) // **Disable** GPS static drift optimization function (P63,**1,0**) (P63,**0**)
Function Description	Query and set GPS static drift optimization function When the device is stationary, the number of GPS satellites received by the device's GPS module is different at different times, so the output latitude and longitude will also change. For this reason, the position of the device still changes when the device is stationary. This phenomenon is called GPS static drift. After enable this optimization function, the device will only update the current real-time latitude and longitude information when the device detects vibration or movement, otherwise it will continue to maintain the last valid latitude and longitude information. This feature is turned off by default.
Command Parameter	**1,1**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **1** Enable this function ; 0 Disable this function. In default it is disabled.
Response command	(8130630001,P63,**1**)
Response command Description	**1** GPS static drift optimization function is enabled.
Command channel	■GPRS ■SMS ■UART ■USBHID

P94 Query and Set P45 unlock&lock report-extended field report

Send Command	// Enable P45 unlock&lock report-extended field report-report IMEI and fence ID field
	(P94,**1,3**)
	
	// Disable P45 unlock&lock report-extended field report function
	(P94,**1,0**)

	(P94,**0**)
Function Description	Query/set P45 unlock&lock report-extended field report This feature is disabled by default. When the IMEI data reporting is enabled, the device reports the P45 lock/unlock report. After the mileage field, the device IMEI field and fence ID are added. **Note:** This function is disabled by default; This command was added in firmware version 20220304 and later; firmware version 20220815 and later versions added Bit2 base station positioning information
Command Parameter	**1,3**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **3** Extended field value, decimal value, converted to binary as follows, 3 → 0x11 BIT0 = 1 BIT1 = 1, that is to control the reporting of the IMEI number field and the fence ID at the same time; **0 means disable this function**

Bit No.	Field
Bit0	IMEI
Bit1	Fence ID
Bit2	MCC:MNC:LAC:CELLID
Bit3-Bit15	Reserved

Response command	(8130630001,P94,**3**)
Response command Description	**3** Indicates P45 unlock&lock report-extended field report P45 unlock&lock report Rawdata Example(ASCII): (8130630001,P45,260915,102329,2233.3218,N,11325.3659,E,A,0,15,1,1,0026589876,0,0,1,234,863977039060871,7,460:0:19526:584115)
Command channel	■GPRS ■SMS ■UART ■USBHID

P97 Query and Set GNSS module power saving mode

Send Command	// **Enable** GNSS module power saving mode (P97,**1,1**) // **Disable** GNSS module power saving mode (P97,**1,0**) (P97,**0**)
Function Description	Query/set the power saving mode of the GNSS module. **GNSS module-power saving mode:** the reporting interval of the device after waking up > 60 seconds (P04 command - reporting interval parameter after waking up the device), after the GNSS module is positioned, the device will turn off the GNSS module for 60 seconds and then

	turn it on to achieve the purpose of saving power consumption ; **Turn off the GNSS module-power saving mode:** During the wake-up period of the device, the GNSS module continues to work until the device sleeps, and the GNSS module is turned off. **Note:** After this function is turned on, the GNSS module of the device will continue to run and cannot enter the intelligent power saving mode, and the power consumption of the whole machine will increase. This command was added in firmware version 20220628 and later
Command Parameter	**1,1**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **1** Enable this function ; 0 Disable this function. In default it is enabled.
Response command	(8130630001,P97,**1**)
Response command Description	**1** GNSS module-power saving mode function is enabled.
Command channel	■GPRS ■SMS ■UART ■USBHID

P105 Query and Set the working network of the cellular module

Send Command	// Configure 4G communication module, only work on 2G network
	(P105,**1,2**)
	
	// Configure 4G communication module, automatically switch 4G/3G/2G network
	(P105,**1,0**)
	
	(P105,**0**)

Function Description	Query/set the working network of the 4G communication module. **Note:** If the device is a 2G module, this command is not supported This command was added in firmware version 20220815 and later
Command Parameter	**1,2**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **2** Working network parameters. Value range [0,2~4]

Working network parameters	Description
0	automatically switch 4G/3G/2G network

		2	4G module only searches 2G network
		3	4G module only searches 3G network
		4	4G module only searches 4G network
Response command	(8130630001,P105,**2**)		
Response command Description	**2** Indicates that the 4G module only works on the 2G network; if the cellular module does not support the network switching, it will return 255		
Command channel	■GPRS ■SMS ■UART ■USBHID		

P67 Query and Set the password verification function of configuration parameters

Send Command	// Set or modify the verification password :ASD123456 to configure the device
	(P67,1,ASD123456)
	
	// Cancel this verification password function
	(P67,2,ASD123456)
	
	// Verify the password ,this command will only take effect for 60 sec
	(P67,3,ASD123456)
	
	// Query the verification password via platform TCP channel. can only support TCP channel.
	(P67,4)

Function Description	This function limits the Micro-USB /Serial port configure cable/ Bluetooth /SMS channel's device parameters configuration. Note: For the 20220815 firmware version, if the password verification function of configuration parameters is enabled, the password verification command(P67,3,ASD123456) must be sent first, and then the unlock command(P43,888888) will be sent to unlock normally. In the 20230324 firmware version and later, we canceled the control of this function on the SMS channel. That is to say, if this function is turned on, the SMS will not be affected, and there is no need to verify the password again.
Command Parameter	1,ASD123456
Command	1 Operation mode,

Parameters Description	1 Set or modify ; 2 Cancel this function. But the password must be verified once before cancellation is allowed; 3 Verify(Check) the password. Need to check this password every 60 sec; 4 Query the password via Platform TCP channel; ASD123456 Verify password.Total 25 characters. Must be letters or numbers.
Response command	(8130630001,P67,**1,ASD123456**)
Response command Description	**1** Set **ASD123456** Verify password of configuration
Command channel	■GPRS ■SMS ■UART ■USBHID

SMS configuration

P11 Query and Set VIP phone number

Send Command	// Set VIP1 phone number to + 8615017935422
	(P11**,1,1,+8615017935422**)
	
	// Set VIP5 phone number to + 8613717935411
	(P11**,1,5,+8613717935411**)
	
	// Query VIP1 phone number setting
	(P11**,0,1**)
	
	(P11,**0,5**)

Function Description	Query and configure VIP phone numbers, This number is used to receive the sent SMS command reply message, as well as the SMS alarm message
Command Parameter	**1,1,+8615017935422**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **1** VIP phone No. index. Value range [1~5] Max support 5 VIP number **+8615017935422** +86 is country code, 15017935422 is phone number **Note:** For firmware version 20220304 and later, the VIP phone number is limited to 20 characters. Previous firmware versions were 15 characters.
Response command	(8130630001,P11**,1,+8615017935422**)
Response	**1** VIP1 index

command Description	**+8615017935422** VIP1 phone number
Command channel	■GPRS ■SMS ■UART ■USBHID

P12 Query and Set VIP phone number to receive SMS alarm

Send Command	// Set VIP1 and VIP2 to receive SMS alarm, other VIP numbers are not able to receive.
	(P12,**1,1,1,0,0,0**)
	
	// Set all VIP numbers to receive SMS alarm.
	(P12,**1,1,1,1,1,1**)
	
	(P12,**0**)

Function Description	Query and Set VIP phone number to receive SMS alarm.
Command Parameter	**1,1,1,0,0,0**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **1** VIP1, 1 enable to receive SMS alarm on VIP1 number; 0 disable **1** VIP2, 1 enable; 0 disable **0** VIP3, 1 enable; 0 disable. example value means disabled **0** VIP4, 1 enable; 0 disable **0** VIP5, 1 enable; 0 disable
Response command	(8130630001,P12,**1,1,0,0,0**)
Response command Description	**1,1,0,0,0** same with above command parameter description
Command channel	■GPRS ■SMS ■UART ■USBHID

P23 Query and Set SMS/phone call wake-up function

Send Command	(P23,**1,1**) (P23,**0**)
Function Description	Query and Set SMS and phone wake-up function After this function is enabled, when the device is in the standby sleep state, the user can send any message command or call the SIM card number in the device to wake-up for working 10 minutes. Note the standby power consumption of the device will increase if enabled.
Command	**1,1**

Parameter	
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **1** Enable this function; 0 Disable this function. By default,disabled this function.
Response command	(8130630001,P23,**1**)
Response command Description	**1** means this function is enabled.
Command channel	■GPRS ■SMS ■UART ■USBHID

P70 Enable and Disable non-VIP numbers to wake up the device

Send Command	(P70,**1,1**) (P70,**0**)
Function Description	Enable and Disable non-VIP number wake-up device function; default is disabled. After turning on this function, JT701D will allow the device to wake up the device through any mobile phone number-sending SMS commands or phone calls. After turning off this function, JT701D only allows the device to wake up the device via the VIP mobile phone number-sending SMS commands or phone calls. **Note:** If JT701 model, after enabling this function, all incoming SMS numbers received by the device are automatically registered as VIP numbers. Meanwhile, the JT701D model does not automatically register these numbers as VIP numbers.
Command Parameter	**1,1**
Command Parameters Description	**1** Operation mode, 1 set ; 0 query **1** Enable this function; 0 Disable this function. In default this function is disabled
Response command	(8130630001,P70,**1**)
Response command Description	**1** enabled this funciton.
Command channel	■GPRS ■SMS ■UART ■USBHID

P10 Query and Set SMS alarm time difference

Send Command	(P10,**1,480**) (P10,**1,-240**)

	(P10,**0**)
Function Description	Query and Set the time difference in the SMS alarm content of the device. The default device SMS alarm time difference is 0 (UTC time). The user can use this comand to adjust the time in the SMS alarm content to the user's local time.
Command Parameter	**1,480**
Command Parameters Description	**1** Operation mode, 1 set；0 query **480** Time difference value. The unit is in minutes. Value range [-720~780]， default value=0 E.g.：Beijing Time Zone UTC +08:00 Time difference value is 8 hours: 8*60 = 480min， Canada Time Zone UTC -04:00 Time difference value: -4*60 = -240 min
Response command	(8130630001,P10,**480**)
Response command Description	**480** time different value is 480/60=8hours, means timezone is UTC +08:00
Command channel	■GPRS ■SMS ■UART ■USBHID

P65 Query and Set device alias

Send Command	(P65,**1,HZBC12345**) (P65,**0**)
Function Description	Query and Set device alias By default, in the SMS position data or alarm data reported, the device identifier is the device ID. After the device alias is configured, this Alias name will replace the device ID.
Command Parameter	**1,HZBC12345**
Command Parameters Description	**1** Operation mod, 1 set；0 query **HZBC12345** **Device alias**。Supports English, numbers and characters.
Response command	(8130630001,P65,**HZBC12345**)
Response command Description	**HZBC12345** Device alias is HZBC12345
Command channel	■GPRS ■SMS ■UART ■USBHID

Authorized card management

P41 Query, add, delete certain, delete all RFID authorization cards

Send Command	//Add 20 RFID authorization cards
	(P41,1,1,20,0002124750,0002153582,0015451297,0006734739,0006688921,0007742247,0008104563,0008104852,0008153513,0006033341,0000000031,0000000032,0000000033,0000000034,0000000035,0000000036,0000000037,0000000038,0000000039,0000000040)
	
	//Delete certain RFID authorization card
	(P41,1,2,3,0002124750,0002153582,0015451297)
	
	//Query first group RFID authorization cards
	(P41,0,1)
	
	//Delete all the authorization cards
	(P41,1,3)

Function Description	Query, add, delete certain RFID card numbers, delete all RFID authorization cards Currently JT701D max supports up to 500 RFID cards; **Note:** JT701 standard firmware only supports 50 RFID cards by default.
Command Parameter	1,1,20,0002124750,0002153582,0015451297,0006734739,0006688921,0007742247,0008104563,0008104852,0008153513,0006033341,0000000031,0000000032,0000000033,0000000034,0000000035,0000000036,0000000037,0000000038,0000000039,0000000040
Command Parameters Description	1 Operation mode, 1 set ; 0 query 1 operation Type If operation mode is 1 then 1 add RFID authorization cards 2 Delete certain RFID authorization card 3 Delete all authorization cards If operation mode is 0 then 1 Query first group RFID authorization cards 2 Query second group authorization cards 3 Query third group authorization cards … 25 MAX support 25 groups. Each group display max 20 RFID cards. Total card quantity is 500. 20 RFID card quantity If operation mode is 1 and operation type is 1 , then parameter 20 means add 20 pieces RFID authorization cards. Value range [1~20] If operation mode is 1 and operation type is 2, then parameter 20 means delete 20 pcs RFID cards, Value range [1~20] If operation mode is 1 , and operation type is 3 , ignore this parameter If operation model is 0 , ignore this parameter 0002124750,0002153582,0015451297,0006734739,0006688921,0007742247,0008104563,0008104852,0008153513,0006033341,0000000031,0000000032,0000000033,0000000034,00

	00000035,0000000036,0000000037,0000000038,0000000039,0000000040 Means 20 RFID card number, Separated by comma , RFID card number value range [0000000001 ~ 4294967295]
Response command	Example command- Related response command (8130630001,P41,1,20,0002124750,0002153582,0015451297,0006734739,0006688921,0007742247,0008104563,0008104852,0008153513,0006033341,0000000031,0000000032,0000000033,0000000034,0000000035,0000000036,0000000037,0000000038,0000000039,0000000040) (8130630001,P41,2,17) (8130630001,P41,1,17,0006734739,0006688921,0007742247,0008104563,0008104852,0008153513,0006033341,0000000031,0000000032,0000000033,0000000034,0000000035,0000000036,0000000037,0000000038,0000000039,0000000040) (8130630001,P41,3,0)
Response command Description	Example command- Explain of Related response command (8130630001,P41,1,20,0002124750,0002153582,0015451297,0006734739,0006688921,0007742247,0008104563,0008104852,0008153513,0006033341,0000000031,0000000032,0000000033,0000000034,0000000035,0000000036,0000000037,0000000038,0000000039,0000000040) 1 operation type is to add RFID authorization cards. 20 means add 20 pcs cards. (8130630001,P41,2,17) 2 means operation type is to delete certain card. 17 means after delete certain card, device still left 17pcs RFID cards (8130630001,P41,1,17,0006734739,0006688921,0007742247,0008104563,0008104852,0008153513,0006033341,0000000031,0000000032,0000000033,0000000034,0000000035,0000000036,0000000037,0000000038,0000000039,0000000040) 1 means first group RFID cards. 17 means first group have 17 cards (8130630001,P41,3,0) 3 means operation type is to delete all RFID cards. 0 after delete all RFID cards, device left 0 card.
Command channel	■GPRS ■SMS ■UART ■USBHID

P42 Enable and disable Register RFID authorization card on site

Send Command	(P42,**1**) (P42,**0**)
Function Description	Enable and disable the on-site registration function of RFID authorization cards, After enabling this function, the user can directly swipe a single RFID card to authorize. If one

	RFID card is recognized, the buzzer will beep once. You can continue to swipe the other RFID cards. Each time max support to authorized 20 cards. If the number of RFID cards registered this time is more than 20, the buzzer will continue to sound for 3 seconds, indicating that the on-site registration of the RFID authorization card function has automatically ended. Or if the device does not detect the RFID card swiping within 60 seconds, the function will automatically end, and the buzzer will continue to sound for 3 seconds.
Command Parameter	**1**
Command Parameters Description	**1** Enable this function；0 Disable this function
Response command	(8130630001,P42,**1**) (8130630001,P42,**2,0008932328,0008933493**) After authorization cards via this function, the device will automatically report the newly registered RFID card to the platform
Response command Description	**1** means this function has enabled. **2,0008932328,0008933493** 2 means registered 2 RFID cards. And the card number is 0008932328 and 0008933493
Command channel	■GPRS ■SMS ■UART ■USBHID

Unlock/lock and remote control

P43 Remote static password unlock

Send Command	(P43,**888888**)
Function Description	Remotely unlock the device by static password In default, password is 888888
Command Parameter	**888888**
Command Parameters Description	**888888** static password.
Response command	(8130630001,P43,**1,0**)
Response command Description	**1,0** **1** wether unlock successfully, 1 success, 0 failed **0** Indicates the number of consecutive incorrect password entries. If password is correct, the value will be cleared to zero
Command channel	■GPRS ■SMS ■UART ■USBHID

P44 Modify static password

Send Command	(P44,**12#aAM,888888**) (P44,**1**)
Function Description	Modify static password
Command Parameter	**12#aAM,888888**
Command Parameters Description	**12#aAM** means new password. It must be combination of random 6 digits, letters and characters.This parameter is 1, means query password,this query command can only be queried through the platform TCP channel **888888** means valid password.
Response command	Example command-Related response command. (8130630001,P44,**1**) (8130630001,P44,**12#aAM**)
Response command Description	Example command- Description of Related response command (8130630001,P44,**1**) **1** 1 means modify static password successfully, 0 means modify failed (8130630001,P44,**12#aAM**) **12#aAM** means valid password is 12#aAM //If the command is queried through a non-TCP channel (8130630001,P44,Not Allow)
Command channel	■GPRS ■SMS ■UART ■USBHID

P52,3 Remote dynamic password unlocking

Send Command	(P52,**3,223457**)
Function Description	Remote dynamic password to unlock the device The premise of this function is that the P52,1 command has enabled the dynamic password unlock function; the platform has recorded the current device dynamic password, otherwise this function is invalid.
Command Parameter	**3,223457**
Command Parameters Description	**3** command ID is 3, means the third command of P52 **223457** means recent dynamic password, usually 6 numbers.
Response	(8130630001,P52,3,**1,0**)

command	
Response command Description	**1** means whether unlock is successfully, 1 success, 0 failed **0** Indicates the number of consecutive incorrect password entries. When the password is entered correctly, the value will be cleared to zero
Command channel	■GPRS ■SMS ■UART ■USBHID

P52,1 Query and Set the dynamic password unlock function

Send Command	// Turn on the dynamic password unlock function, but not associated with Geofence
	(P52,**1**,**1**,**1**,**0**)
	
	// Turn on the dynamic password unlocking function, and associate the Geofence, only in the fence, can use the dynamic password to unlock
	(P52,**1**,**1**,**1**,**1**)
	
	// Query dynamic password unlock function
	(P52,**1**,**0**)

Function Description	Query and Set the dynamic password unlock function **Note:** After the dynamic password unlocking function is enabled, the dynamic password will only be actively updated when the lock rope is pulled out and inserted to lock again. If the lock is unlocked but the lock rope is not pulled out, the lock is automatically locked then, or the lock rope is pulled out, and the lock rope is not inserted back to lock, the dynamic password will not be updated. The dynamic password report P52,2 is sent to the platform every minute, and the platform needs to respond to this P52,2 report, otherwise it will continue to be sent to the platform at 1-minute intervals.
Command Parameter	**1**,**1**,**1**,**1**
Command Parameters Description	**1** command ID, means it's the first command of P52 **1** operation mode, 1 Set ; 0 query **1** 1 means function of using dyminic password for unlock is enabled.; 0 diasbled **1** 1 means only in certain fence can use dyminic password to unlock. ; 0 Means that the dynamic password unlocking has nothing to do with whether you are in the fence, as long as the dynamic password is correct, you can unlock
Response command	(8130630001,P52,1,**1**,**0**)
Response command Description	**1**,**0** **1** 1 Indicates that the dynamic password unlocking function has been turned on; **0** 0 Means that the dynamic password unlocking has nothing to do with whether you are in the fence, as long as the dynamic password is correct, you can unlock
Command channel	■GPRS ■SMS ■UART ■USBHID

P52,0 Query current device dyminic password

Send Command	(P52,0)
Function Description	Query the current dynamic unlocking password This query password command can only be queried through the platform TCP channel.
Command Parameter	None
Command Parameters Description	None

Response command	// If the dynamic password unlocking function has been turned on,response (8130630001,P52,0,000000,**386531**)
	
	// If the dynamic password unlocking function is not enabled, response (8130630001,P52,0,,)
	
	//If the command is queried through a non-TCP channel (8130630001,P52,0,Not Allow)

Response command Description	**386531** Indicates the current dynamic password, random 6 digits
Command channel	■GPRS ■SMS ■UART ■USBHID

P59 Query and Set unlock channel control

Send Command	(P59,**1**,1,1,1,1,1) (P59,**0**)
Function Description	Query and Set unlock channel Through this command, you can control whether the device can be unlocked through SMS, GPRS, RFID authorization card, serial port, and Bluetooth channel. For example: after closing the GPRS channel and unlocking, the platform will send the correct static password P43 or dynamic password P52,3 command, and the lock cannot be unlocked. By default, all channels are allowed to be unlocked.
Command Parameter	**1**,1,1,1,1,1
Command Parameters Description	**1** Operation mode, 1 Set；0 Query 1 SMS Channel, 1 enable unlock function；0 Disable unlock function 1 GPRS Channel, 1 enable unlock function；0 Disable unlock function 1 RFID authorized card, 1 enable unlock function；0 Disable unlock function 1 Serial Port channel , 1 enable unlock function；0 Disable unlock function

	1 Bluetooth channel , 1 enable unlock function ; 0 Disable unlock function
Response command	(8130630001,P59,1,1,1,1,1)
Response command Description	1,1,1,1,1 same explain as above
Command channel	■GPRS ■SMS ■UART ■USBHID

P15 Remote restart

Send Command	(P15)
Function Description	Restart the device remotely Send (P15), around 30 seconds later, the device will restart
Command Parameter	None
Command Parameters Description	None
Response command	(8130630001,P15)
Response command Description	
Command channel	■GPRS ■SMS ■UART ■USBHID

P32 Force the device to enter sleep mode

Send Command	(P32)
Function Description	Force the device to enter sleep mode Send a forced sleep command, around 30 seconds later, the device will enter sleep. This command is mainly used to test whether the device can sleep, and whether it can wake up the device through various wake-up sources during sleep to speed up the test.
Command Parameter	None
Command Parameters Description	None
Response	(8130630001,P32)

command	
Response command Description	
Command channel	■GPRS ■SMS ■UART ■USBHID

P83 Query and Set the automatic lock time of the device

Send Command	//Set the device's automatic lock time to 1 minute.
	(P83,**1,1**)
	
	//Set the device's automatic lock time to 5 minute.
	(P83,**1,5**)
	
	//Query the automatic lock time of the device
	(P83,**0**)

Function Description	Query and set the automatic locking time of the device; when the device is unlocked and the lock rope is not pulled, the default automatic locking time is 1 minute. **Note:** This command was added in firmware version 20220304 and later.
Command Parameter	**1,5**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **5** Automatic locking time when the lock rope is not pulled out from JT701 device, unit: minute Value range [1~10] The default is 1 minute
Response command	(8130630001,P83,**1**)
Response command Description	1 Auto-lock time is 1 minute
Command channel	■GPRS ■SMS ■UART ■USBHID

P91 Deep sleep warehousing mode (Shutdown device remotely)

Send Command	(P91)
Function	Shutdown device remotely(force the device enter into deep sleep warehousing mode).

Description	**Application scenario:** The device has been configured with parameters, insert the SIM card, and turn on the power switch. In order to solve the inconvenience of transportation safety, saving power consumption during transportation, re-opening the cover and turning it on, the user sends the P91 command, and the device will enter this warehousing sleep mode. In this mode, the device cannot be woken up by vibration, it needs to be woken up by swiping the RFID card and charging the device. **Note:** When the device is set to the warehousing mode, it can only be woken up by swiping a card or charging; This command was added in firmware version 20220304 and later.
Command Parameter	None
Command Parameters Description	None
Response command	(8130630001,P91,**1**)
Response command Description	**1** Set successfully, the device enter the storage dormancy
Command channel	■GPRS ■SMS ■UART ■USBHID

Alarm configuration

P40 Query and Set the switch of GPRS/SMS alarm

Send Command	(P40,**1**,1,1,1,1,1,1,1,1,1,1) (P40,**1**,3,0,1,1,1,1,1,1,1,1) (P40,**0**)
Function Description	Query and set the switch of GPRS/SMS alarm The device can be configured whether to send GPRS alarm data, whether to send SMS alarm information. 10 types of alarms are supported by default
Command Parameter	**1**,1,1,1,1,1,1,1,1,1,1
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query 1 1 Corresponding to the lock rope cut alarm, If the parameter is 0, it means to close GPRS and SMS alarm If the parameter is 1, it means that only GPRS alarm is turned on The parameter is 2 means that only SMS alarm is turned on

	The parameter is 3, which means to turn on both GRPS and SMS alarm 1 Corresponding to the swiping illegal RFID card alarm, the same as the parameter description of the lock rope cut alarm 1 Corresponding to the long-time unlocking alarm, the same as the parameter description of the lock rope cut alarm 1 Corresponding 5 consecutive incorrect passwords alarm, same parameter description as lock rope cut alarm 1 Corresponding to vibration alarm (this alarm in JT701D is disabled), same parameter description as lock rope cut alarm 1 Corresponding to enter fence alarm, same parameter description as lock rope cut alarm. 1 Corresponding to exit fence alarm, same parameter description as lock rope cut alarm. 1 Corresponding to low battery alarm, same parameter description as lock rope cut alarm. 1 Corresponding to back cover open alarm, same parameter description as lock rope cut alarm. 1 Corresponding to the lock stuck alarm, same parameter description as lock rope cut alarm
Response command	(8130630001,P40,1,1,1,1,1,1,1,1,1,1,0,0,0,0)
Response command Description	1,1,1,1,1,1,1,1,1,1, respectively correspond to the alarm type in the command parameter 0,0,0,0 Customized alarm type, in order to consider the command response compatibility, it can be ignored
Command Channel	■GPRS ■SMS ■UART ■USBHID

P61 Query and Set low battery alarm threshold

Send Command	(P61,**1,30**) (P61,**0**)
Function Description	Query and set low battery alarm threshold. The default battery level is less than 30%, then this alarm is generated.
Command Parameter	**1,30**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **30** means low battery alarm threshold, value range [0~90]
Response command	(8130630001,P61,**30**)
Response command Description	**30** The threshold of low level power alarm is 30%
Command Channel	■GPRS ■SMS ■UART ■USBHID

P36 Query and Set Vibration alarm threshold

Send Command	//Set the vibration alarm threshold to 1000mg
	(P36,**1,1000**)
	
	//Turn off vibration alarm detection
	(P36,**1,0**)
	
	//Query the vibration alarm threshold value
	(P36,**0**)

Function Description	query and set vibration alarm threshold This alarm is generated when the vibration threshold of the detection equipment exceeds the preset alarm threshold. In order to avoid multiple vibration alarms, only one vibration alarm is generated within 10 minutes. The vibration alarm threshold must be greater than the P37 command configuration **Note:** This command was added in firmware version 20211222 and later
Command Parameter	**1,1000**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **1000** the value range is 0 or [126~8000], the unit is mg. 0 means Turn off the vibration alarm detection. Default value is 0
Response command	(8130630001,P36,**1000**)
Response command Description	**1000** The alarm threshold for vibration alarm
Command Channel	■GPRS ■SMS ■UART ■USBHID

P38 Query and Set long-time unlocking alarm

Send Command	(P38,**1,120**) (P38,**0**)
Function Description	query and set long-time unlocking alarm When the device is unlocked, the lock rope is pulled out for a preset time, this alarm will be generated, the default is 120 minutes
Command Parameter	**1,120**
Command Parameters	**1** Operation mode, 1 Set ; 0 Query **120** Long-time unlocking alarm threshold, the unit is minute, the value range is [3~180]

Description	
Response command	(8130630001,P38,**120**)
Response command Description	**120** The alarm threshold for long-time unlocking is 120 minutes
Command Channel	■GPRS ■SMS ■UART ■USBHID

Geofence configuration

P24 Query and Set Geofence function and geofence name

Send Command	(P24,**1**,**10**,**1**,**area10**) (P24,**0**,**1**)
Function Description	Query and set Geofence function and corresponding geofence name
Command Parameter	**1**,**10**,**1**,**area10**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **10** means geofence ID, value range[1~10] **1** 1 means the function of corresponding geofence is valid; 0 means that the function of the fence ID is invalid. If the device enters or exits the fence, no fence alarm will be generated **area10** The name of the fence, which is a combination of letters and numbers, with a maximum length of 16 characters
Response command	(8130630001,P24,**10**,**1**,**area10**)
Response command Description	**10**,**1**,**area10** same description as Command parameters
Command Channel	■GPRS ■SMS ■UART ■USBHID

P29 Query and configure the enter and exit fence node information

Send Command	//Configure fence ID 1 fence node information - this fence consists of 9 location nodes(P29,**1**,**1**,**1**,**9**,11400.623,2233.6325,11400.7988,2233.7466,11400.9575,2233.7686,11401.0304,2233.6775,11401.0434,2233.5696,11401.0221,2233.4972,11400.7991,2233.4543,11

	400.6833,2233.457,11400.6618,2233.4688) /Configure fence ID 3 fence node information-the fence consists of 8 location nodes (P29,**1**,**3**,**1**,**8**,-7531.1858,832.923,-7529.5627,832.3909,-7529.3562,831.6025,-7529.9445,830.1557,-7530.5315,828.4319,-7532.2582,829.0359,-7533.0169,829.6902,-7531.3584,832.681) //Query the fence node information of fence ID 1 (P29,**0**,**1**)
Function Description	Query and configure the enter and exit fence node information The device supports up to 10 fences by default, and one fence supports up to 50 location node information. When the platform GPRS configures the electronic fence, it is recommended to use a 10-node fence to improve the success rate of the platform to configure the fence. For 50 latitude and longitude nodes, 5 commands are required to configure the fence node information. It is recommended to configure the fence information through the JT701D serial port configuration software provided by Jointech.
Command Parameter	**1**,**1**,**1**,**9**,11400.623,2233.6325,11400.7988,2233.7466,11400.9575,2233.7686,11401.0304,2233.6775,11401.0434,2233.5696,11401.0221,2233.4972,11400.7991,2233.4543,11400.6833,2233.457,11400.6618,2233.4688
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **1** Indicates that the fence ID is 1, and the value range is [1~10] **1** First page. Node page index. The maximum is 5 pages. Value range: [1~5] **9** This page has 9 location nodes. The total position node in the page index. The location node consists of longitude and latitude values. If the longitude value is negative, it means west longitude, and if it is positive, it means east longitude; if the latitude value is negative, it means south latitude, and if it's positive, it means north latitude. Maximum 10 nodes supported on a page. 11400.623,2233.6325 first node 11400.6230 East longitude DDDMM.MMMM format **Note:** 07531.1858 The first 0 can be omitted, which is equivalent to 7531.1858 11400.6230 The last 0 can be omitted, which is equivalent to 11400.623 2233.6325 represents the north latitude DDMM.MMMM format 11400.7988,2233.7466 2nd node 11400.9575,2233.7686 3rd node 11401.0304,2233.6775 4th node 11401.0434,2233.5696 5th node 11401.0221,2233.4972 6th node 11400.7991,2233.4543 7th node 11400.6833,2233.457 8th node 11400.6618,2233.4688 9th node
Response command	(8130630001,P29,**1**,**9**,**1**,**9**,11400.6230,2233.6325,11400.7988,2233.7466,11400.9575,2233.7686,11401.0304,2233.6775,11401.0434,2233.5696,11401.0221,2233.4972,11400.7991,2233.4543,11400.6833,2233.4570,11400.6618,2233.4688)

Response command Description	1,9,1,9 1 Geofence ID 1 9 Fence ID 1,a total of 9 nodes 1 First page 9 The current page, a total of 9 nodes. 11400.6230,2233.6325,11400.7988,2233.7466,11400.9575,2233.7686,11401.0304,2233.6775,11401.0434,2233.5696,11401.0221,2233.4972,11400.7991,2233.4543,11400.6833,2233.4570,11400.6618,2233.4688 Same as the description of Command parameters, after the latitude/longitude/minute and floating point data are converted, there may be a slight error between the last decimal point and the command parameters node information, which does not affect the actual results.
Command Channel	■GPRS ■SMS ■UART ■USBHID

P30 Delete the fence node of the fence ID

Send Command	(P30,3)
Function Description	Delete the fence nodes of the fence ID
Command Parameter	3
Command Parameters Description	3 means the fence ID is 3, value range[1~10]
Response command	(8130630001,P30,1)
Response command Description	1 means the deletion was successful; 0 means the deletion failed
Command Channel	■GPRS ■SMS ■UART ■USBHID

P31 Notify the device that the Geofence is configured

Send Command	(P31)
Function Description	Notify the device that the fence node of the fence ID is configured
Command Parameter	None
Command	None

Parameters Description	
Response command	(8130630001,P31)
Response command Description	
Command Channel	■GPRS ■SMS ■UART ■USBHID

P58 Query and Set authorized RFID card unlocking associated Geofence

Send Command	(P58,**1,1**) (P58,**0**)
Function Description	Query and configure the geofence associated with authorized RFID card After configuring the fence associated with the RFID card, The device can only be unlocked with authorized RFID within the configured fence, otherwise the buzzer will keep on beeping for 3 seconds, indicating that the illegal RFID card cannot be unlocked. This feature is turned off by default.
Command Parameter	**1,1**
Command Parameters Description	**1** Operation mode, 1 Set ; 0 Query **1** Associate the authorized RFID to unlock within geofence; 0 means to close this function. This feature is turned off by default
Response command	(8130630001,P58,**1**)
Response command Description	**1** Associate the authorized RFID to unlock within geofence
Command Channel	■GPRS ■SMS ■UART ■USBHID

P52,1 Query and Set dynamic password unlocking associated geofence

Refer to this article P52,1 Query and set the dynamic password unlock function

Read the device's FLASH via serial port(customized firmware)

P19 Obtain positioning data and Unlock & lock report

Send Command	
Function Description	Obtain position data and unlock & lock report from serial port. Customized function, detail is not presented in this document.
Command Parameter	
Command Parameters Description	
Response command	
Response command Description	
Command Channel	■GPRS ■SMS ■UART ■USBHID

DEBUG Remote debugging commands

P98,10,0 Query the number of data cached in the device FLASH

Send Command	(P98,10,**0**)
Function Description	Query the number of cached data items in the FLASH of the JT701D device, the cached data includes position data, alarm data, and P45 unlock & lock report **Note:** In JT701, This command queries the number of cached data items of position data and alarm data. If you need to query the number of data items in the P45 unlock & lock report, you need to send (P98,11,**0**) At present, the FLASH cache data of JT701D device is mainly used for the blind area supplementary report function, and will not store data continuously. After all the data is reported in the blind zone, the data stored in FLASH will be cleared automatically.
Command Parameter	**0**
Command Parameters	**0** Query

Description	
Response command	(8130630001,P98,10,0,**37**,0)
Response command Description	**37** Indicates that 37 pieces of data have been cached in the current FLASH and have not been sent to the platform; when all the cached data has been sent, this value is 0
Command Channel	■GPRS ■SMS ■UART ■USBHID

P98,10,1,0,0 Delete all cached data in device FLASH

Send Command	(P98,10,**1,0,0**)
Function Description	Delete all cached data in FLASH of JT701D device The actual JT701D can operate for a maximum of 15 seconds. If it has not been deleted, you need to send this command again to continue deleting **Note:** This command of JT701 device only deletes the buffered data of position data and alarm data. If you need to delete the P45 unlock & lock report data, you need to send (P98,11,**1,0,0**)
Command Parameter	**1,0,0**
Command Parameters Description	**1** Delete cached data **0,0** fixed value is enough
Response command	(8130630001,P98,10,0,**0**,0)
Response command Description	**0** Indicates that the current remaining cached data is 0, that is, all cached data has been deleted
Command Channel	■GPRS ■SMS ■UART ■USBHID

P98,6 View the AT command flow of the communication module and GPS-NMEA data

Send Command	// View the AT command flow of the communication module
	(P98,**6,6**)
	
	// View the GPS-NMEA data
	(P98,**6,1**)
	
	// Stop view

	(P98,**6,0**)
Function Description	View 2G/4G JT701D communication module AT commands flow or GPS-NMEA data Used to troubleshoot abnormal situations such as device failure to connect to the GPRS network, GPS failure to locate, and location errors This command is recommended to be sent and queried through the serial port configuration cable
Command Parameter	**6,6**
Command Parameters Description	**6** Indicates the instruction ID, the sixth instruction of P98 **6** 6 means to query AT command flow 1 means to query GPS-NMEA data 0 means to stop querying AT command and GPS-NMEA data
Response command	(8130630001,P98,6,**6**)
Response command Description	**6** Same as Command parameters description
Command Channel	■GPRS ■SMS ■UART ■USBHID

Peripheral configuration

Query, delete and bind JT709 slave lock or JT126 temperature & humidity sensor to the master lock

Pls reference to document《JT126 Temperature Sensor and JT709 Sub Lock Integration ManualV1.4.pdf》

OTA Command

OTA-9 Firmware upgrade over the FTP server

Send Command	(8130630001,1,001,OTA,9,1,222.252.17.214,10021,test1,Ab123456,JT701_19.bin,101764,9585478)
Function Description	Firmware upgrade over the FTP server **Note:** Clients need to deploy a ftp server,and get the FTP OTA file and its ,total bytes and checksum-code of this OTA file from Jointech sales.

	This command was added in firmware version 20211019 and later.
Command Parameter	1,222.252.17.214,10021,test1,Ab123456,JT701_19.bin,101764,9585478
Command Parameters Description	1 Operation mode. 1 Set ; 0 Query; 2 Cancel upgrading; 222.252.17.214 means FTP server IP address 10021 means FTP server TCP port test1 means FTP server login username: Ab123456 means FTP server login password JT701_19.bin means FTP OTA filename 101764 means total bytes of this FTP OTA file 9585478 means total checksum of each byte in this FTP OTA file. It's decimal value.
Response command	(8130630001,1,001,OTA,9,222.252.17.214,10021,test1,Ab123456,JT701_19.bin,101764,9585478,0)
Response command Description	222.252.17.214,10021,test1,Ab123456,JT701_19.bin,101764,9585478 Same as Command parameters description 0 indicates operation successful 1 means device is in upgrading processing 2. The device is being upgraded. After the upgrade is completed (success/failure), the FTP upgrade is finished 3. FTP failed to start, no upgrade under low power 4. Busy, other upgrades are being performed
Command Channel	■GPRS ■SMS ■UART ■USBHID

Customized command

P09 Configure indicator LED's display

Send Command	
Function Description	Customized firmware function detail is not presented in this document.
Command Parameter	
Command Parameters Description	

Response command	
Response command Description	
Command Channel	■GPRS ■SMS ■UART ■USBHID

Attached table: List of ASCII commands

Command word /Link	Function Description
P01	Query current firmware version and remainning battery level.
P02	Query the current location of the device and the device status information, and the short message content will be sent to the VIP mobile phone number.
P03	Query and configure the percentage of battery level which the device enters deep sleep mode.
P04	Query and set the data upload time interval after the device wakes up, and the RTC timing wake-up interval
P06,0/P06,1	Query and configure main IP1(domain)/TCP port and APN, APN account related to SIM1 card slot
P06,2/P06,3	Query and configure secondary IP2 , TCP port, and APN, APN account corresponds to SIM2 card slot.
P10	Query and Set the time difference in the SMS alarm content of the device
P11	Query and configure VIP phone numbers, This number is used to receive the sent SMS command reply message, as well as the SMS alarm message
P12	Query and Set VIP phone number to receive SMS alarm
P13	The device will restore all parameters except the IP address, port, VIP number, APN and APN account, password to the factory default settings
P14	Query the IMEI number of the 2G/3G/4G communication module
P15	Restart the device remotely
P19	Obtain positioning data and unlock & lock report from serial port. Customized function, detail is not presented in this document.
P22	User can use this command to synchronize the device's GPS time to the current UTC time
P23	Query and Set SMS and phone wake-up function
P24	Query and set Geofence function and corresponding geofence name
P29	Query and configure the entry and exit fence node information
P30	Delete the fence nodes of the fence ID
P31	Notify the device that the fence node of the fence ID is configured
P32	Force the device to enter sleep mode
P36	Query and set vibration alarm threshold
P37	Query and configure device vibration detection sensitivity

P38	query and set long-time unlocking alarm
P39	Query and Set Working time after the device wakes up
P40	Query and set the switch of GPRS/SMS alarm.The device can be configured whether to send GPRS alarm data, whether to send SMS alarm information.
P41	Query, add, delete certain RFID card numbers, delete all RFID authorization cards
P42	Enable and disable the on-site registration function of RFID authorization cards
P43	Remotely unlock the device by static password
P44	Modify static password
P45	When the device is locked or unlocked, the lock or unlock report will be generated immediately
P50	Enable and disable the power switch of the device mainboard
P52,0	Query the current dynamic unlocking password
P52,1	Query and Set the dynamic password unlock function
P52,2	Platform response to dynamic password report
P52,3	Remote dynamic password to unlock the device
P54	Query and configure tracking mode
P58	Query and configure the geofence associated with authorized RFID card
P59	Query and Set unlock channel
P61	Query and set low battery alarm threshold
P62	Query and configure the initial mileage and mileage statistics speed threshold
P63	Query and set GPS static drift optimization function
P65	Query and Set device alias
P67	Query and Set the password verification function of configuration parameters
P68	Query the IMSI and ICCID of the SIM card
P69	Platform general response command
P70	Enable and Disable non-VIP number wake-up device function
P83	Query and set the automatic locking time of the device
P91	Shutdown device remotely(force the device enter into deep sleep warehousing mode)
P92	Query and set the time interval for position data reporting when the device is unlocked or locked
P94	Query and set P45 unlock&lock report-extended field report
P97	Query and set GNSS module power saving mode
P99	Query and set Cornering Report
P98,10	Query the number of cached data items in the FLASH of the JT701D device, the cached data includes position data, alarm data, and P45 unlock & lock report
P98,6	View 2G/4G JT701D communication module AT commands flow or GPS-NMEA data
P105	Query and set the working network of the cellular module
WLNET,9	Platform response command to peripheral
OTA-9	Firmware upgrade over the FTP server