Protocol Manual V2.4

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1 Preface

This document is intended primarily for software engineers and system administrators. Readers must have a basic knowledge of the computer. Due to continuous optimization and improvement of product features, it is possible that the protocol documents you read are not exactly the same as product currently used.

2 Terms and Abbreviations

Name	Description
GPS Platform	Asset Management GPS platform software, hereafter called GPS platform
Device	intelligent electronic lock, acts as client
IMEI	International Mobile Equipment Identity, each 2G/3G/4G module has its unique IMEI
Unit ID	last 10 digit numbers of the IMEI number. IMEI: 860298043396604 Unit ID : 8043396604
GPRS	General Packet Radio Service
APN	Access Point Name
TCP	Transmission Control Protocol
SMS	Short Message service

3 Product Working logic

3.1 Sleep state

The device will switch from the awake state to the sleep state. When sleeping, the GPS and 2G/3G modules will be turned off. The device will sleep for 30 minutes by default (this time can be configured) and wake up periodically. During this period, it can be externally Wake up the source.

3.2 Awakening state

In order to monitor the wake-up source in real time and communicate with the GPS platform, the device can be awakened by the wake-up source to change from the sleep state to the awake state. At this time, if the vibration, RFID card reading ,Back Cover opened and lock rope insertion and unplugging external wake-up source are detected again, the device will update the wake-up work. The time is 10 minutes (this time is configurable), otherwise the device will work for up to 10 minutes (which is configurable) to go to sleep.

3.3 Wake up source

The device will wake up from the external interrupt wake-up source and the RTC wake-up source(internal interrupt), and the external interrupt wake-up source, hereinafter referred to as “external wake-up source”:

No.	Wake up source	After wake up	Remark
1	Vibration	When the device detects the vibration amplitude is greater than the preset vibration sensitivity coefficient, it wakes up and continues to work for 10 minutes (this time is configurable). If the valid external wake-up source is not captured during the period, it sleeps; otherwise, it starts timing when the external wake-up source is detected last time. Work 10 minutes to go to sleep.	external wake up source
2	RFID Key Reading	The device is woken up when detecting the RFID card reading, and continues to work for 10 minutes (this time is configurable). If the valid external wake-up source is not captured during the period, it sleeps; otherwise, the time is started when the external wake-up source is detected last time. Work 10 minutes to go to sleep.	external wake up source
3	Back Cover Opened	The device is woken up when detecting Back Cover Opened, and continues to work for 10 minutes (this time is configurable). If the valid external wake-up source is not captured during the period, it sleeps; otherwise, the time is started when the external wake-up source is detected last time. Work 10 minutes to go to sleep.	external wake up source
4	Lock rope inserted and unplugging	The device is woken up when detecting the lock rope is inserted or unplugging, and continues to work for 10 minutes (this Time configurable),If the valid external wake-up source is not captured during the period, it sleeps; otherwise, it starts timing when the external wake-up source is detected last time. Work 10 minutes to go to sleep.	external wake up source
5	Sleep and timing wake up	The device starts timing when it enters the sleep time. If no external wake-up source is generated during this period, it wakes up after 30 minutes, uploads a positioning data and delays 30 seconds to enter the sleep. Otherwise, it goes to the external wake-up source to trigger the wake-up work for 10 minutes(this time is configurable).	RTC wake up source
6	SMS	When the device receives any SMS, it wakes up and continues to work for 10 minutes (this time is configurable). If the valid external wake-up source is not captured during the period, it sleeps; otherwise, it starts timing when the external wake-up source is detected last time. Work 10 minutes to go to sleep.	external wake up source

3.4 Blind zone data

If The device enters the mobile network blind zone, the device will save the current position data and alert data (at least 28000) to Flash, and these data will be uploaded to GPS platform in the first-in first-out order after the device is connected to the GPRS network. The device saves lock and unlock report at least 2400, these data will be uploaded in the first-in first-out order after the GPRS network is restored.

4 Protocol Basis

4.1 Communication mode

This communication protocol adopts TCP, GPS platform acts as server; Device acts as client. Usually use TCP protocol as the main communication way.

4.2 Transmission Rules

Protocol adopts Big-endian network byte sequence to transmit word and double word. Position/Alert data ,Lock /Unlock report are transmitting according First in First out (FIFO).

5 Command Syntax(GRPS/SMS)

5.1 Read/Write Command Syntax

(<Command Word>,<Parameter 1>,…<Parameter N>)

Note:

The command uses '(' as the header, '')" as the end of the package. When editing the command, ignore the '<' and '>' symbol.

Example: (P04,1,60,30)

Field Name	length(byte)	Example(ASCII)
Header	1	(
Command Word	3	P04
Comma as separator	1	,
Each parameter takes a comma as a separator <Parameters…>	N	60,30
End	1	)

5.2 Command Reponse Syntax

(<Unit ID>,<Command Word>,<Parameter 1>,…<Parameter N>)

Note:

The command response uses '(' as the header, '')" as the end of the package. Please ignore the '<' and '>' symbol when decode the command response.

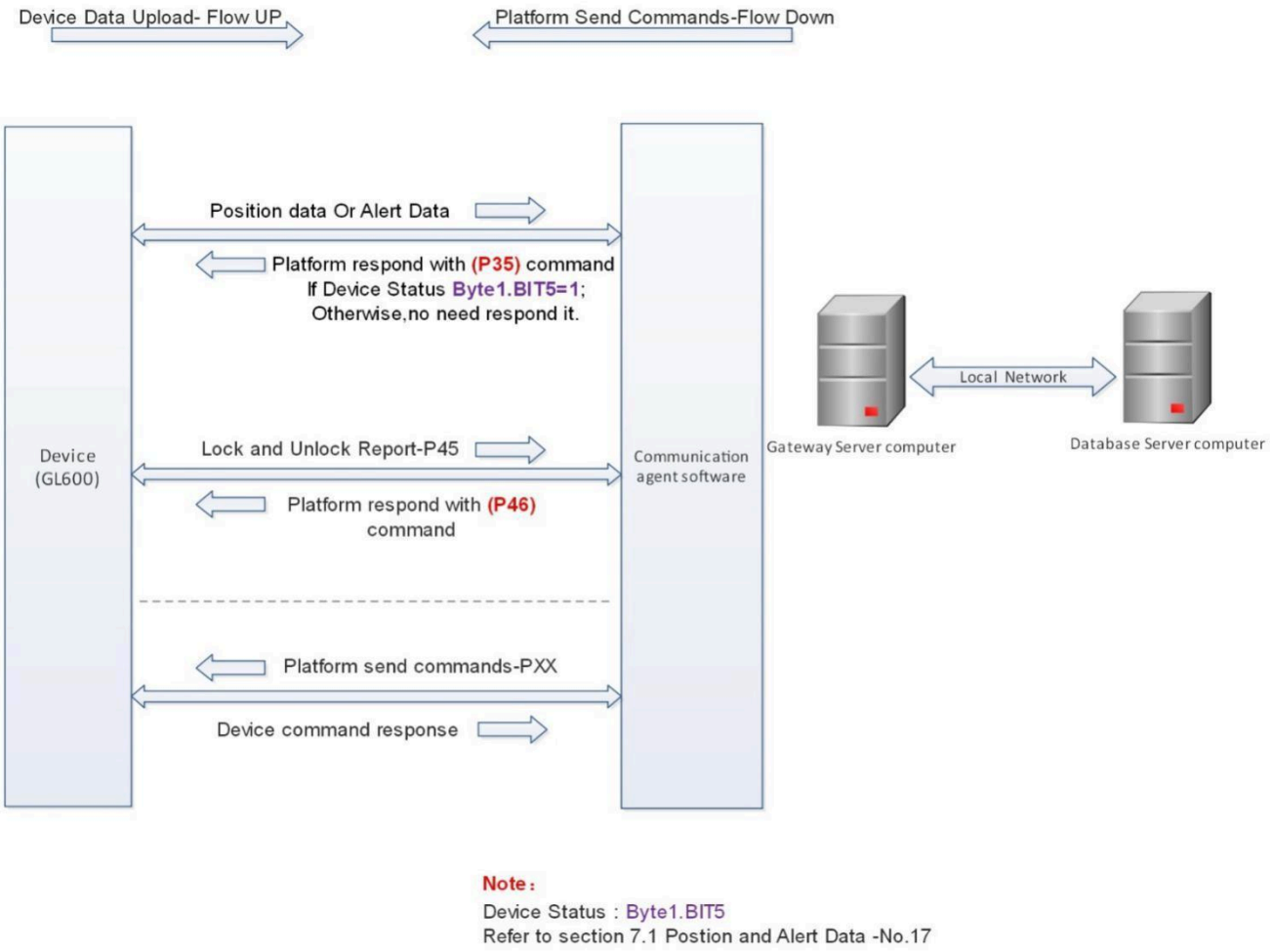
Example: (8043396604,P43,1,0)

Field Name	length(byte)	Example(ASCII)
Header	1	(
<Unit ID> Last 10 digit numbers of IMEI number	10	8043396604
Comma as separator	1	,
Command Word	3	P43
Comma as separator	1	,
<Parameters…> Each parameter takes a comma as a separator	N	1,0
End	1	)

6 Protocol Integration Guide

After the device is configured with the correct host IP address and TCP port, the device will send the position data to the GPS platform automatically when it is in the awake state. The GPS platform refers to the following diagram to respond to the relevant binary position data .All position data and alert data need to be parsed in binary data, with $0x24_{(HEX)}$ as the data header, and then intercept the data according to the data length; All lock and unlock reports and commands interactions need to convert the binary data into ASCII format and then parse the data ,with $0x28_{(HEX)}$ as the data header, $0x29_{(HEX)}$ as the end of the packet.

6.1 Message Interaction diagram



Note：
Device Status : Byte1.BIT5
Refer to section 7.1 Postion and Alert Data -No.17

7 Device Send data to GPS Platform

7.1 Position and Alert Data

Position and Alert Raw data Example (HEX):
2480433966040111002718031919195822424550114158888E15A40000F124080000000000F00F110A24991900000DF0C7

For easy reading, separate the fields with underscores:
24_8043396604_01_1_1_0027_180319_191958_22424550_114158888_E_15_A4_0000F124_08_00000000_00F0_0F_110A249
9_19_00_000DF0_C7

No.	Field Name	Data Example(HEX)	Length (Byte)	Description
1	Protocol header	24	1	$0x24_{(HEX)}$,Convert to ASCII format ,it's '$' character
2	Unit ID	8043396604	5	Last 10 digit numbers of IMEI
3	Protocol version	01	1	01 indicates protocol version
4	Device type	1	0.5	1 indicates GL600.
5	Data type	1	0.5	1 indicates Real time data 2 indicates **Alert data** 3 indicates Blind zone data
6	Data length	0027	2	Data content length, total 39 bytes. from No.7 to No.23
7	Date	180319	3	Day Month Year. It's Mar. 18th , 2019
8	Time	191958	3	Hour-Minute-Second, UTC time, 19:19:58
9	Latitude	22424550	4	DDMM.MMMM format, the latitude conversion method as below: 22424550/10000=2242.4550 2242.4550 DDMM.MMMM 22+42.4550/60=22+ 0.707583=22.707583°
10	Longitude	114158888	4.5	DDDMM.MMMM format, the longitude conversion method as below: 114158888/10000=11415.8888 11415.8888 DDDMM.MMMM 114+15.8888/60=114+ 0.264813=114.264813°
11	Latitude/Longitude Direction	E	0.5	Convert this' Latitude/Longitude Direction' to Binary system data. 1110 Bit3 to Bit0 from left to right Bit indicator / Description / Example (Binary system) Bit3 / Fixed value 1 / 1 Bit2 / Longitude Direction 1 East Longitude 0 West Longitude / 1 Bit1 / Latitude direction 1 North Latitude 0 South Latitude / 1 Bit0 / GPS Validity 1 GPS valid 0 GPS invalid / 0
12	Speed	15	1	Current GPS speed is 15 knots, Convert to kilometer/hour 15 * 1.852 27.78 KM/H
13	Direction	A4	1	$A4_{(HEX)}$ = $164_{(Dec)}$, multiply by 2=$328_{(Dec)}$, direction is 328° North is 0°,Clockwise counting The unit in degree. range:0~359 degree
14	GPS Odometer	0000F124	4	Unit in kilometer. Current GPS Odometer is 61732 KM.

				The accumulated mileage of the device when it is awake
15	Number of captured satellites	08	1	Captured 8 satellites
16	Vehicle ID Blinding Key number	00000000	4	Reserved. This value is fixed to '00000000'.
17	**Device status**	00F0	2	**Device's status or Alert indicator :** 0x00 0xF0 Byte2 at left side .it's 0x00; Byte1 at right side it's 0xF0 Convert 'Device Status' to Binary system data. BYTE2 BYTE1 00000000 11110000 Bit7 to Bit0 from left to right

Byte. Bit	Description	Example$_{(BIN)}$ **00F0**$_{(HEX)}$ e
Byte2 Description		
Byte2.BIT7	Reserved. This bit is fixed at 0	0
Byte2.BIT6	Motor fault alert 1 indicates triggered alert; 0 indicates normal.	0
Byte2.BIT5	Back Cover status: 1 indicates back cover close; 0 indicates back cover opened	0
Byte2.BIT4	Back cover Opened alert 1 indicates triggered alert ; 0 indicates normal.	0
Byte2.BIT3	Low battery alert 1 indicates triggered alert; 0 indicates normal.	0
Byte2.BIT2	Swiping unauthorized RFID key alert 1 indicates triggered alert; 0 indicates normal.	0
Byte2.BIT1	Wrong password alert The password is continuously entered incorrectly 5 times. 1 indicates triggered alert; 0 indicates normal.	0
Byte2.BIT0	Unlocking alert 1 indicates triggered alert; 0 indicates normal.	0
Byte1 Description **Note:** Device Locked : Byte1.BIT7 and Byte1.BIT6=1 Device Unlocked: Byte1.BIT6=0		
Byte1.BIT7	Motor Lock status: 1 indicates Motor lock; 0 indicates Motor unlock.	1
Byte1.BIT6	Lock Rope status: 1 indicates Lock Rope inserted; 0 indicates Lock Rope unplugging	1
Byte1.BIT5	ACK indicator 1 indicates This data requires the GPS platform to acknowledge it; 0 indicates This data does not require the GPS platform to acknowledge it. **Note:** If Byte1.BIT5=1,GPS Platform need to send (P35) command to acknowledge this data. Otherwise, the device will keep sending the same data.	1
Byte1.BIT4	Vibration alert 1 indicates triggered alert; 0 indicates normal.	1

7.2

				Byte1.BIT3 ~~Lock rope tamper alert~~ 1 indicates triggered alert; 0 indicates normal. 0 Byte1.BIT2 Exit Geo-fence alert 1 indicates triggered alert; 0 indicates normal. 0 Byte1.BIT1 Enter Geo-fence alert 1 indicates triggered alert; 0 indicates normal. 0 Byte1.BIT0 Base station positioning indicator 1 indicates Base station positioning; 0 located by GPS positioning 0
18	Battery Level	0F	1	Remaining Battery Level. 0x0F the current battery is 15%, 0x64 means 100% the accuracy is 5%, if the value is 0xFF,means charging
19	CELL ID and LAC	110A2499	4	$110A_{(HEX)}$ is CELL ID; $2499_{(HEX)}$ is LAC.
20	GSM signal quality	19	1	Indicates the strength of GSM signal, $19_{(HEX)}$, signal value $25_{(DEC)}$. The maximum value for GSM signal strength is 31.
21	Geo-Fence alert Fence ID	00	1	Indicates the geo-fence alert fence ID ;when no geo-fence alert, thi value is fixed to '00'.
22	Reserve	000DF0	3	Reserved for the future
23	Serial number	C7	1	Serial number $199_{(DEC)}$, Add 1 for each data sent; reset to 0x00 afte 0xFF

Lock and Unlock Report-P45

Report Description

Note: When parsing data, you need to convert hexadecimal data to ASCII format first.
This is Lock and Unlock Report, not a command. It's transmitted to GPS platform side automatically when Customers Swipe the RFID keys Or Lock/Unlock the Device. The GPS platform needs to send a (P46) command to acknowledge this report, otherwise the device will continue to send this report. In case of multiple event sources at the same time, the device will send one by one.

Syntax

Response	(<Unit ID>,P45,<Date>,<Time>,<Latitude>,<N/S Latitude indicator>,<Longitude>,<E/W Longitude indicator>,<GPS fix indicator>,<Speed>,<Direction>,<Even Source>,<Unlock successful/failed>,<RFID key number>,<Password True/False>,<Input Wrong Password Times>,<Report Serial number>)

Parameter Description

Parameters	Description
<Date>	Repot Date. format :DDMMYY 170219 means Feb. 17th 2019
<Time>	Report Time .format: HHMMSS 162349 means 16:23:49 UTC time
<Latitude>	Latitude . format: DD.DDDDDD . The unit in degree
<N/S Latitude indicator>	N indicates Northern latitude; S indicates South latitude
<Longitude>	Longitude. format: DDD.DDDDDD. The unit in degree
<E/W Longitude indicator>	E indicates East longitude ; W indicates West longitude
<GPS Validity>	A indicates GPS fix ; V indicates GPS signal invalid
<Speed>	GPS speed. Unit in KM/H (Kilometers per hour)
<Direction>	North is 0 degree, Clockwise counting .the unit in degree. range:0~359 degree

<Even Source>	1 indicates Swipe Authorized RFID key; 2 indicates Swipe Unauthorized RFID key; 3 indicates Swipe the vehicle ID blinding RFID key; 4 indicates Unlock by Password; 5 indicates The device is automatically locked
<Unlock successful/failed>	1 means the RFID key or password is verified, unlocked successfully, 0 means RFID key or password is not verified, refused to unlock **Note:** If <Even Source> is 2,3,5 ,this value is fixed to 0 .
<RFID key number>	The ID card number when swiping the card. **Note:** If the <Event Source> is 4 or 5, the value is 0000000000.
<Password True/False>	If the <Event Source> is 4, this value indicates whether the password is correct. If password is correct, it is 1, and for other types, it is fixed to 0.
<Input Wrong Password Times>	If the <Event Source> is 4, this value indicates the number of consecutive password input errors. For other types, it is fixed to 0.
<Report Serial number>	The serial number of the lock and unlock report, indicating the number of times the device sent the records.

Example

Swipe Authorized RFID key

Response	(8043396604,P45,180219,184809,22.924088,N,114.540793,E,V,12.00,60,1,1,0006182080,0,0,35)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P45	Command Word
	180219	Feb. 18th 2019
	184809	18:48:09. UTC time
	22.924088	Latitude
	N	Northern latitude
	114.540793	Longitude
	E	East longitude
	V	GPS invalid
	12.00	12 KM/H
	60	60° Direction
	1	Swipe Authorized RFID key
	1	RFID key is verified, unlocked successfully
	0006182080	RFID key number
	0	Password True/False. Fixed to '0'
	0	Input Wrong Password Times .Fixed to '0'
	35	The serial number of the lock and unlock report

Unlock by Password

Response	(8043396604,P45,180219,184809,22.924088,N,114.540793,E,A,12.00,60,4,1,0000000000,1,0,36)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P45	Command Word
	180219	Feb. 18th 2019
	184809	18:48:09 . UTC time
	22.924088	Latitude
	N	Northern latitude

	114.540793	Longitude
	E	East longitude
	A	GPS fix
	12.00	12 KM/H
	60	60° Direction
	4	Unlock by Password
	1	Password is verified, unlocked successfully
	0000000000	RFID key number. fixed to '0000000000'
	1	Password is correct
	0	Input Wrong Password Times
	36	The serial number of the lock and unlock report
Sending Report Channel		
☑GPRS		

7.3 Command Response

For the response content of all commands sent through the GPS platform, please refer to the Section:9 GPS platform sends commands to device Response content.

8 Device Send short message to Authorized Phone numbers

8.1 Position data short message Format

Note: Refer to P02 -Query Current Position
Example:
8043396604 ,09-28 12:11:02,Speed:0km/h,Battery:85%,GPS:3,Lock Close, http://maps.google.com/?q=22.549737,114.076685

NO.	Field Name	Example	Description
1	Unit ID	8043396604	
2	Separator	,	
3	Date time	09-28 12:11:02	Sep. 28th 12:11:02

			UTC time. Adjust this time by P10 command.
4	Separator	,	
5	GPS Speed	Speed:0km/h	
6	Separator	,	
7	Battery Level	Battery:85%	if charging power, will display: Charging
8	Separator	,	
9	Number of Capture satellites	GPS:3	Number of captured satellites
10	Separator	,	
11	Lock status	Lock Closed	Lock Status
12	Separator	“,”	
13	New line	0x0D 0x0A	Invisible character(New Line)
14	Google Map link	http://maps.google.com/?q=22.549737,114.076685	22.549737 indicate Latitude, positive value north latitude, negative value south latitude; 114.076685 indicate longitude, positive value East Longitude, negative value West longitude.

8.2 Alert data short message Format

Lock rope tamper Alert Format
ALM, Lock Rope Tamper, 8043396604 ,09-28 12:03:43,Battery:95%,GPS:3, Lock Closed,http://maps.google.com/?q=22.549737,114.076685

Swiping unauthorized RFID key Alert Format
ALM, Swiping unauthorized RFID key,8043396604 ,09-28 12:11:02,Battery:95%,GPS:3, Lock Closed,http://maps.google.com/?q=22.549332,114.076561

Unlocking Alert Format
ALM,Lock Open,8043396604 ,09-28 12:11:02,Battery:95%,GPS:3, Lock Open,http://maps.google.com/?q=22.549730,114.076615

Wrong Password Alert Format
ALM, Wrong Password,8043396604 ,09-28 12:11:02,Battery:95%,GPS:3, Lock Closed,http://maps.google.com/?q=22.549656,114.076564

Vibration Alert Format
ALM,Vibration,8043396604 ,09-28 04:31:32,Battery:66%,GPS:3, Lock Closed,http://maps.google.com/?q=22.549754,114.076250

Enter Geo-fence Alert Format
ALM,Enter Geo-fence,Fence Name:Home,8043396604 ,09-28 00:02:39,Battery:60%,GPS:3, Lock closed,http://maps.google.com/?q=22.549737,114.076685

Exit Geo-fence Alert Format
ALM, Exit Geo-fence,Fence Name:Company,8043396604 ,09-28 03:21:45,Battery:58%,GPS:3, Lock closed,http://maps.google.com/?q=22.549737,114.076685

Low Battery Alert Format
ALM,Low Battery, 8043396604 ,09-28 03:27:48,Battery:15%,GPS:3, Lock closed,http://maps.google.com/?q=22.549736,114.076588

Back cover Opened Alert Format
ALM,Back Cover Opened,8043396604 ,09-28 03:27:48,Battery:58%,GPS:3, Lock closed,http://maps.google.com/?q=22.549736,114.076677

Motor Fault Alert Format
ALM,Moter Fault,8043396604 ,09-28 03:27:48,Battery:58%,GPS:3, Lock closed,http://maps.google.com/?q=22.549736,114.076677

No.	Field Name	Example	Description
1	Header	ALM	
2	Alert type	Lock Rope Tamper	
3	separator	,	
4	Unit ID	8043396604	
5	separator	,	
6	Date time	08-28 12:03:43	Aug 28th 12:03:43 UTC time. Adjust this time by P10 command.
7	separator	,	
8	Battery	Battery:85%	
9	separator	,	
10	GPS signal	GPS:3	Number of captured satellites
11	Separator	,	
12	Lock open/close status	Lock closed	Lock Status
13	separator	,	
14	carriage return-linefeed	0x0D 0x0A	Invisible character(New Line)
15	Google Map link	http://maps.google.com/?q=22.549737,114.076685	22.549737 mean latitude. Positive value is North latitude, negative value is South latitude. 114.076685 mean longitude. Positive value is East longitude, Negative value is West longitude

8.3 Command Response short message Format

For the response content of all commands sent through authorized Phone Numbers, please refer to the Section:9 GPS platform sends commands to device Response content.
Note: Short message and GPRS command response content format are the same.

9 GPS Platform Send Commands to Device

Command Word List(ASCII)

Command Word	Description
P00	Set/query Working Mode
P01	Query Device Firmware Version
P02	Query Current Position.
P04	Set /Query Position data reporting time interval after device wake up and Device Timing wake up interval
P06	Set/query SIM1 and SIM2 Communication Parameters
P09	Set/query GPS and GSM indicators Control
P10	Set /query the time difference of short message Position data
P11	Set /query Authorized Phone Numbers that used to receive alert message /short message position data or sending SMS commands.
P12	Enable or Disable the device to send SMS alerts to the specified Authorized Phone Numbers.
P13	Restore factory setting of device. All parameters will be recovered to factory setting exclude Host IP address, port, APN, Authorized Phone numbers.
P14	Query device's IMEI number
P15	Reboot the device remotely. the device will restart after 30 sec when received this command.
P22	Do time synchronization When the device continues to report invalid GPS signals and GPS time in the Position data
P24	Set /query geo-fence name and enable/disable one of the geo-fence
P29	Set or query the Fence Nodes of The Polygon Geo-fence
P30	Delete fence Node information and geo-fence name for a fence ID
P31	Inform the device that GPS platform/Serial port side has finished setting this Geo-fence, it can detect geo-fence alert now.
P32	Force the device to go to sleep.
P35	Acknowledge the alert or position data at GPS platform.
P36	Set /query Vibration sensitivity coefficient threshold of Vibration alert.
P37	Set /query Vibration Sensitivity Coefficient of Motion state detection. The smaller the acceleration value, the easier it is to detect the Motion state.
P38	Set /query Interval of Unlocking alert.
P39	Set /query working time after waking up
P40	Set/query alert switch. The device supports 10 types of alerts. They are Lock rope tamper, swiping unauthorized RFID key, unlocking, wrong password, vibration, enter geo-fence, exit geo-fence, low battery, Back cover Opened and Motor Fault alerts
P41	Authorized RFID key Management
P43	Unlock device by password.
P44	Change the unlock password.
P46	Acknowledge the Lock and Unlock Report data at GPS platform.
P50	Enable or Disable the power switch on device mainboard.
P97	Change the data acknowledgement mechanism. By default, all alert data and lock/unlock report - (P45) require the GPS platform to acknowledge them, otherwise the data will continue to be sent. With this command, you can configure these data without platform confirmation, or configure the maximum number of reports when the platform does not respond correctly.
P99	Upgrade the Device's Firmware over the air.
P100	Query device real-time status and GSM module version (2G/3G/4G)

P00- Set working mode

Command Description			
This command is used to set /query the working mode of the device. SMS mode need STM8 chip version after **190418_V1.0**			
Syntax			
Read Command	(P00,<Action>)		
Response	(<Unit ID>,P00,<Working mode>)		
Write Command	(P00,<Action>,< Working mode >)		
Response	(<Unit ID>,P00,<Working mode>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Working mode>	0 SMS mode 1 Power saving mode 2 Real-time tracking mode	0~2	1
Example			
Query Working mode			
Read Command	(P00,0)		
Response	(8043396604,P00,1)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P00	Command Word	
	1	Working mode: Power saving mode	
Set Working mode to Real-time tracking mode			
Write Command	(P00,1,2)		
Response	(8043396604,P00,2)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P00	Command Word	
	2	Working mode: Real-time tracking mode	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P01-Query firmware version

Command Description			
Query Device Firmware Version			
Syntax			
Read Command	(P01)		
Response	(<Unit ID>,P01,<Firmware version>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Firmware version>	Device Firmware version		
Example			
Query Device Firmware Version			

Read Command	(P01)	
Response	(8043396604,P01,GL600__2019-03-13_13:41:57_V1.0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P01	Command Word
	GL600__2019-03-13_13:41:57_V1.0	Firmware version
Sending Command Channel		
☑GPRS ☑SMS ☑USB		

P02-Query Current Position

Command Description			
Query Current Position. The device will respond the Position data(short message) to the Authorized Phone Number 1 if send this command via GPRS/Cellular Network; will respond the Position data(short message) to the Sending Authorized Phone Number if send this command via one of the Authorized Phone Number. The short message Position data format, Refer to Section 8.1 Position data short message format			
Syntax			
Read Command	(P02)		
Response	<Unit ID>,<Date time>,<GPS Speed>,<Battery Level>,<Number of Capture satellites>,<Lock Status>,<Google Map link>		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Unit ID>	Device ID last 10 digit numbers of IMEI		
<Date time>	Report Date time. Format: MM-DD HH:MM:SS Adjust the Time difference of the short message by P10 command.		
<GPS Speed>	GPS speed . in KM/H		
<Battery Level>	Battery Level .	1%~100%	
<Number of Capture satellites>	Number of captured satellites.		
<Lock Status>	Lock Status. Locked or Unlocked		
<Google Map link>	Google Map link. Copy this link to Browser to check Detailed location.		
Example			
Query Current Position			
Read Command	(P02)		
Response	8043396604,11-30 12:00:00,Speed:10km/h,Battery:50%,GPS:7,Lock Closed, http://maps.google.com/?q=22.549737,114.076685		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	11-30 12:00:00	November 30th 12:00:00	
	Speed:10km/h	GPS speed is 10km/h	
	Battery:50%	Battery Level is 50%	
	GPS:7	Number of captured satellites .7	
	Lock Closed	Lock Status. Currently, It's Locked.	
	http://maps.google.com/?q=22.549737,114.076685	Google Map link	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P04-Set/Query Position Data Reporting Time interval and Timing wake up interval

Command Description	
This command is used to set /query Position data reporting time interval after device wake up and Device Timing wake up interval	
Syntax	
Read Command	(P04,<Action>)
Response	(<Unit ID>,P04, <Reporting time interval>,<Timing wake up interval>)
Write Command	(P04,<Action>,<Reporting time interval>,<Timing wake up interval>)

Response	(<Unit ID>,P04,<Reporting time interval>,<Timing wake up interval>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Reporting time interval>	Position data reporting time interval after wake up. unit in seconds	5~600	30
<Timing wake up interval>	Timing wake up interval.unit in minutes	30~1440	30

Example

Query Position data reporting time interval after wake up and Timing wake up interval

Read Command	(P04,0)	
Response	(8043396604,P04,30,30)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P04	Command Word
	30	Reporting time interval is 30 sec
	30	Timing wake up interval is 30 minutes.

Set Position data reporting time interval to 60 sec , and Timing wake up interval to 120 minutes.

Write Command	(P04,1,60,120)	
Response	(8043396604,P04,60,120)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P04	Command Word
	60	Reporting time interval is 60 sec
	120	Timing wake up interval is 120 minutes.

Sending Command Channel

☑GPRS ☑SMS ☑USB

P06-Set/Query SIM1 and SIM2 Communication Parameters

P06-Set/Query SIM1's IP Port and GPRS/Cellular network Parameters

Command Description

This command is used to set /query SIM Card 1's host IP address(Domain Name)/Port/APN and APN account.
Note:
The device can be installed with two Micro SIM cards and supports the dual SIM single standby mode. The device will automatically select a SIM card to register the network.

Syntax

Read Command	(P06,<Action>)
Response	(<Unit ID>,P06,<Host IP address/Domain Name>,<TCP port>,<APN>,<APN user>,<APN pass>,<SIM card Number>)
Write Command	(P06,<Action>,<Host IP address/Domain Name>,<TCP port>,<APN>,<APN user>,<APN pass>,<SIM card Number>)
Response	(<Unit ID>,P06,<Host IP address/Domain Name>,<TCP port>,<APN>,<APN user>,<APN pass>,<SIM card Number>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Host IP address/Domain Name>	Hosting IP address: 13.228.118.160 Domain Name: gps.jlinkiot.com		13.228.118.160

<TCP port>	TCP Port number of the remote host server.	0~65530	12000
<APN>	Access Point Name. e.g. China Mobile APN is cmnet	Up to 50 characters	cmnet
<APN user>	The APN username to access GPRS network.	Up to 50 characters	
<APN pass>	The APN password to access GPRS network.	Up to 50 characters	
<SIM card Number>	SIM card Number. 0 SIM1 1 SIM2	0~1	0

Example

query SIM Card 1's host IP address(Domain Name)/Port/APN and APN account

Read Command	(P06,0)	
Response	(8043396604,P06,13.228.118.160,11006,cmnet,,,0) or (8043396604,P06, gps.jlinkiot.com,11006,cmnet,,,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P06	Command Word
	13.228.118.160	Host IP address
	tracker.mobicomtracking.com	Domain Name
	11006	TCP port
	cmnet	APN Note: here ,no APN account. Keep the APN user and pass blank
	0	SIM card 1

Set SIM Card 1's host IP address: 211.136.214.222 ,TCP port: 1156 , APN: internet ,APN user: gprs
APN pass: web

Write Command	(P06,1,211.136.214.222,1156,internet,gprs,web)	
Response	(8043396604,P06,211.136.214.222,1156,internet,gprs,web,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P06	Command Word
	211.136.214.222	Host IP address
	1156	TCP port
	internet	APN
	gprs	APN username
	web	APN password
	0	SIM card 1

Set SIM Card 1's host Domain Name : tracker.mobicomtracking.com ,TCP port: 1156 , APN: internet ,APN user and pass are blank.

Write Command	(P06,1,tracker.mobicomtracking.com,1156,internet,,)	
Response	(8043396604,P06,tracker.mobicomtracking.com,1156,internet,,,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P06	Command Word
	tracker.mobicomtracking.com	Domain Name
	1156	TCP port
	internet	APN .
		APN username is blank
		APN password is blank
	0	SIM card 1

Sending Command Channel

☑GPRS ☑SMS ☑USB

P06-Set/Query SIM2's IP Port and GPRS/Cellular network Parameters

Command Description			
This command is used to set /query SIM Card 2's host IP address(Domain Name)/Port/APN and APN account. Note: The device can be installed with two Micro SIM cards and supports the dual SIM single standby mode. The device will automatically select a SIM card to register the network.			
Syntax			
Read Command	(P06, <Action>)		
Response	(<Unit ID>,P06,<Host IP address/Domain Name>,<TCP port>,<APN>,<APN user>,<APN pass>,<SIM card Number>)		
Write Command	(P06,<Action>,<Host IP address/Domain Name>,<TCP port>,<APN>,<APN user>,<APN pass>,<SIM card Number>)		
Response	(<Unit ID>,P06,<Host IP address/Domain Name>,<TCP port>,<APN>,<APN user>,<APN pass>,<SIM card Number>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Action>	2 Query the previous setting 3 Write the Parameters	2~3	
<Host IP address/Domain Name>	Hosting IP address: 13.228.118.160 Domain Name: tracker.mobicomtracking.com		13.228.118.160
<TCP port>	TCP Port number of the remote host server.	0~65530	12000
<APN>	Access Point Name. e.g. China Mobile APN is cmnet	Up to 50 characters	cmnet
<APN user>	The APN username to access GPRS network.	Up to 50 characters	
<APN pass>	The APN password to access GPRS network.	Up to 50 characters	
<SIM card Number>	SIM card Number. 0 SIM1 1 SIM2	0~1	1

Example

query SIM Card 2's host IP address(Domain Name)/Port/APN and APN account		
Read Command	(P06,2)	
Response	(8043396604,P06,13.228.118.160,11006,cmnet,,,1) or (8043396604,P06,tracker.mobicomtracking.com,11006,cmnet,,,1)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P06	Command Word
	13.228.118.160	Host IP address
	tracker.mobicomtracking.com	Domain Name
	11006	TCP port
	cmnet	APN . Note: here ,no APN account. Keep the APN user and pass blank
	1	SIM card 2
Set SIM Card 2's host IP address: 211.136.214.222 ,TCP port: 1156 , APN: internet ,APN user: gprs APN pass: web		
Write Command	(P06,3,211.136.214.222,1156,internet,gprs,web)	
Response	(8043396604,P06,211.136.214.222,1156,internet,gprs,web,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P06	Command Word
	211.136.214.222	Host IP address
	1156	TCP port
	internet	APN .
	gprs	APN username
	web	APN password

	1	SIM card 2

Set SIM Card 2's host Domain Name : tracker.mobicomtracking.com ,TCP port: 1156 , APN: internet ,APN user and pass are blank.		
Write Command	(P06,3,tracker.mobicomtracking.com,1156,internet,,)	
Response	(8043396604,P06,tracker.mobicomtracking.com,1156,internet,,,1)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P06	Command Word
	tracker.mobicomtracking.com	Domain Name
	1156	TCP port
	internet	APN .
		APN username is blank
		APN password is blank
	1	SIM card 2
Sending Command Channel		
☑GPRS ☑SMS ☑USB		

P09-Turn On/Off GPS and GSM indicator

Command Description

This command is used to turn on or turn off GPS and GSM indicators.
After turn off the GPS and GSM indicators, they will remain off regardless of whether the device is working properly or not.
After turn on them, they will continue to work according to the original indicator definition state mode.

Syntax

Read Command	(P09,<Action>)
Response	(<Unit ID>,P09,<Turn On/Off indicator>)
Write Command	(P09,<Action>,<Turn On/Off indicator>)
Response	(<Unit ID>,P09,<Turn On/Off indicator>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Turn On/Off indicator>	0 indicates Turn off GPS and GSM indicators; 1 indicates Turn on GPS and GSM indicators	0~1	1

Example

Query GPS and GSM indicators Control Status

Read Command	(P09,0)	
Response	(8043396604,P09,1)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P09	Command Word
	1	Turn on GPS and GSM indicators

Turn off GPS and GSM indicators

Write Command	(P09,1,0)	
Response	(8043396604,P09,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P09	Command Word
	0	Turn off GPS and GSM indicators

Sending Command Channel

☑GPRS ☑SMS ☑USB

P10-Set/Query the time difference of GPRS position data and SMS alert

Command Description

This command is used to set /query the time difference of GPRS position data and SMS alert.

Syntax

Read Command	(P10,<Action>)
Response	(<Unit ID>,P10,<GPRS/SMS time difference>)
Write Command	(P10,<Action>,<time difference>)
Response	(<Unit ID>,P10, <GPRS/SMS time difference>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting (GPRS) 1 Write the Parameters (GPRS) 2 Query the previous setting (SMS) 3 Write the Parameters (SMS)	0~3	
<GPRS time difference> Or <SMS time difference>	the time difference of short message Position data. Unit in minutes. E.g. UTC +08:00 8*60=480 UTC -05:30 5*60+30=-330	-720~780	0

Example

Query the time difference of GPRS Position data

Read Command	(P10,0)	
Response	(8043396604,P10,480)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P10	Command Word
	480	GPRS time difference. UTC+08:00

Set the time difference of GPRS Position data to UTC -03:00. time difference is -180

Write Command	(P10,1,-180)	
Response	(8043396604,P10,-180)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P10	Command Word
	-180	GPRS time difference. UTC-03:00

Query the time difference of SMS alert

Read Command	(P10,2)	
Response	(8043396604,P10,480)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P10	Command Word
	480	SMS time difference. UTC+08:00

Set the time difference of SMS alert to UTC -03:00. time difference is -180

Write Command	(P10,3,-180)	
Response	(8043396604,P10,-180)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P10	Command Word
	-180	SMS time difference. UTC-03:00

Sending Command Channel

☑GPRS ☑SMS ☑USB

P11-Set/Query Authorized Phone Numbers

Command Description

This command is used to set /query Authorized Phone Numbers that used to receive alert message /short message position data or sending SMS commands. The device does not respond when the mobile number is not registered.

Syntax

Read Command	(P11,<Action>,<Authorized Phone number index>)
Response	(<Unit ID>,P11,<Authorized Phone number index>,<Authorized Phone number>)
Write Command	(P11,<Action>,<Authorized Phone number index>,<Authorized Phone number >)
Response	(<Unit ID>,P11,<Authorized Phone number index>,<Authorized Phone number >)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Authorized Phone number index>	Up to 5 Authorized Phone numbers.	1~5	0
<Authorized Phone number>	phone number, can not exceed 15 digit numbers, add country code at front, e.g. China is 86 or +86.		

Example

Query The first Authorized Phone number

Read Command	(P11,0,1)	
Response	(8043396604,P11,1,8615017931001)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P11	Command Word
	1	Index, Authorized Phone number1
	8615017931001	Authorized Phone number

Set the Authorized Phone number 2 to 8615017931001

Write Command	(P11,1,2,8615017931001)	
Response	(8043396604,P11,2,8615017931001)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P11	Command Word
	2	Index, Authorized Phone number2
	8615017931001	Authorized Phone number

Sending Command Channel

☑GPRS ☑SMS ☑USB

P12-Enable or Disable the device to send SMS alerts to the specified Authorized Phone number

Command Description			
This command is used to enable or disable the device to send SMS alerts to the specified Authorized Phone Number. by default, The device only sends SMS alert information to Authorized Phone Number1 and Authorized Phone Number 2.			
Syntax			
Read Command	(P12,<Action>)		
Response	(<Unit ID>,P12,<Enable/Disable Phone Number1>,<Enable/Disable Phone Number2>,<Enable/Disable Phone Number3>,<Enable/Disable Phone Number 4>,<Enable/Disable Phone Number5>)		
Write Command	(P12,<Action>,<Enable/Disable Phone Number1>,<Enable/Disable Phone Number2>,<Enable/Disable Phone Number3>,<Enable/Disable Phone Number 4>,<Enable/Disable Phone Number5>)		
Response	(<Unit ID>,P12,<Enable/Disable Phone Number1>,<Enable/Disable Phone Number2>,<Enable/Disable Phone Number3>,<Enable/Disable Phone Number 4>,<Enable/Disable Phone Number5>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Enable/Disable Phone Number1>	0 indicates Disable the device to send SMS alerts to the specified Authorized Phone number1; 1 indicates Enable the device to send SMS alerts to the specified Authorized Phone number 1.	0~1	1
<Enable/Disable Phone Number2>	0 indicates Disable the device to send SMS alerts to the specified Authorized Phone number 2; 1 indicates Enable the device to send SMS alerts to the specified Authorized Phone number 2.	0~1	1
<Enable/Disable Phone Number3>	0 indicates Disable the device to send SMS alerts to the specified Authorized Phone number 3; 1 indicates Enable the device to send SMS alerts to the specified Authorized Phone number 3.	0~1	0
<Enable/Disable Phone Number4>	0 indicates Disable the device to send SMS alerts to the specified Authorized Phone number 4; 1 indicates Enable the device to send SMS alerts to the specified Authorized Phone number 4.	0~1	0
<Enable/Disable Phone Number5>	0 indicates Disable the device to send SMS alerts to the specified Authorized Phone number 5; 1 indicates Enable the device to send SMS alerts to the specified Authorized Phone number 5.	0~1	0
Example			
Query the configuration of the Authorized Phone number receiving SMS alert			
Read Command	(P12,0)		
Response	(8043396604,P12,1,1,0,0,0)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P12	Command Word	
	1	Authorized Phone number1 Enable to accept SMS alert	
	1	Authorized Phone number2 Enable to accept SMS alert	
	0	Authorized Phone number3 Disable to accept SMS alert	
	0	Authorized Phone number4 Disable to accept SMS alert	
	0	Authorized Phone number5 Disable to accept	

		SMS alert
Set the specified Authorized Phone number 1,2,3 to accept the SMS alert		
Write Command	(8043396604,P12,1,1,1,1,0,0)	
Response	(8043396604,P12,1,1,1,0,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P12	Command Word
	1	Authorized Phone number1 Enable to accept SMS alert
	1	Authorized Phone number2 Enable to accept SMS alert
	1	Authorized Phone number3 Enable to accept SMS alert
	0	Authorized Phone number4 Disable to accept SMS alert
	0	Authorized Phone number5 Disable to accept SMS alert
Sending Command Channel		
☑GPRS ☑SMS ☑USB		

P13-Restore Factory setting

Command Description			
Restore factory setting of device. All parameters will be recovered to factory setting exclude Host IP address, port, APN, Authorized Phone numbers.			
Syntax			
Read Command	(P13)		
Response	(<Unit ID>,P13)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
-	-	-	-
Example			
Restore factory setting of device			
Read Command	(P13)		
Response	(8043396604,P13)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P13	Command Word	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P14-Read device's IMEI number

Command Description			
Query device's IMEI number			
Syntax			
Read Command	(P14)		
Response	(8043396604,P14,860298043396604)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
-	-	-	-
Example			
Query device's IMEI number			
Read Command	(P14)		
Response	(8043396604,P14,860298043396604)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P14	Command Word	
	860298043396604	IMEI	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P15-Reboot the device remotely

Command Description			
Reboot the device remotely. the device will restart after 30 sec when received this command.			
Syntax			
Read Command	(P15)		
Response	(8043396604,P15)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
-	-	-	-
Example			
Reboot the device remotely			
Read Command	(P15)		
Response	(8043396604,P15)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P15	Command Word	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P22-Time Synchronization

Command Description

This command is used to do time synchronization When the device continues to report invalid GPS signals and GPS time in the Position data. If the device is currently acquiring GPS signals normally, this command will not take effect.

Syntax

Write Command	(P22,<Date Time>)
Response	(<Unit ID>,P22,<Successful/failed>)

Parameter Description

Parameters	Description	Value Range	Default
<Date Time>	Year/Month/Day/Hour/Minute/Second, and it is UTC time. Format as below: YYYYMMDDHHMMSS		
<successful/failed>	1 indicates successful; 0 indicates failed	0~1	

Example

Set the device's Position data's Date time to 2019/03/18 16:43:28 (UTC)

Write Command	(P22,20190318164328)	
Response	(8043396604,P22,1)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P22	Command Word
	1	Set successfully; if this value is 0 ,means Set unsuccessfully.

Sending Command Channel

☑GPRS ☑SMS ☑USB

P24-Set/Query Geo-fence name and enable/disable one of fence ID

Command Description

This command is used to set or query geo-fence name and enable/disable one of the geo-fence.

Syntax

Read Command	(P24,<Action>,<Fence ID index>,<Enable/Disable>,<Geo-fence Name>)
Response	(<Unit ID>,P24, <Fence ID index>,<Enable/Disable>,<Geo-fence Name>)
Write Command	(P24,<Action>,<Fence ID index>)
Response	(<Unit ID>,P24,<Fence ID index>,<Enable/Disable>,<Geo-fence Name>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Fence ID index>	Geo-fence ID index. The device supports at most 10 Fences.	1~10	
<Enable/Disable>	Enable/Disable specified Fence ID 1 means Enable ; 0 means Disable	0~1	
<Geo-fence Name>	The fence name of the specified fence ID. Up to 30 characters, only numbers and letters are supported	Up to 30 characters	

Example

Query fence ID 10's Geo-fence name and Geo-fence Enable/Disable Status

Read Command	(P24,0,10)	
Response	(8043396604,P24,10,1,companyaddress001)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P24	Command Word
	10	Fence ID
	1	Enable
	companyaddress001	Fence Name

Set fence ID 1's geo-fence name to 'long gang road144' and Enable its function

Write Command	(P24,1,1,1,long gang road144)	
Response	(8043396604,P24,1,1,long gang road144)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P24	Command Word
	1	Fence ID
	1	Enable
	long gang road144	Fence Name

Disable fence ID 05's Geo-fence function

Write Command	(P24,1,5,0,)	
Response	(8043396604,P24,5,0,home)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P24	Command Word
	5	Fence ID
	0	Disable
	home	Fence Name

Sending Command Channel

☑GPRS ☑SMS ☑USB

P29-Set/Query the Fence Nodes of The Polygon Geo-fence

Command Description

This command is used to set or query the Fence Nodes of The Polygon Geo-fence, at most 10 Polygon Fences.

Syntax

Read Command	(P29,<Action>,<Fence ID index>,<Fence Node Page index >)
Response	(<Unit ID>,P29,<Fence ID index>,<Total Nodes>,<Fence Node Page index >,<Total Nodes in this Page ID>,< Fence Node…>)
Write Command	(P29,<Action>,<Fence ID index>,<Fence Node Page index >,<Total Nodes in this Page ID>,< Fence Node…>)
Response	(<Unit ID>,P29,<Fence ID index>,<Total Nodes>,<Fence Node Page index >,<Total Nodes in this Page ID>,< Fence Node…>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Fence ID index>	Geo-fence ID index. The device supports at most 10 Fences.	1~10	
<Total Nodes>	Total Nodes in this Fence ID. Up to 50 Nodes	0~50	
<Fence Node Page index >	Fence Node Page index. One Page saves 10 Fence Nodes. 1 Fence Node includes the longitude and latitude info.	1~5	
<Total Nodes in this Page ID>	Total Nodes in this Page ID. Up to 10 Nodes in one Page	0~10	
< Fence Node…>	Node information, nodes must appear in pairs, that is, one longitude and one latitude appear in pairs, one longitude and one latitude constitute a complete point, and the node information appears in the form of DDDMM.MMMM,DDMM.MMMM. Up to 5 pages can be set to 50 points. East Longitude or Northern latitude: Positive value. e.g. 11414.9742,2242.0727 West Longitude or South latitude: Negative value e.g. -4815.2106,-2019.3663		

Example

Query fence ID 5 all Page 's Fence Node info.
Note: To get the whole fence nodes. User need to query fence node from page 1 to 5.

Read Command	(P29,0,5,1) (P29,0,5,2) (P29,0,5,3) (P29,0,5,4) (P29,0,5,5)
Response	**Note:** There is no newline in the actual received command content. The newline in the example is due to document layout. (8043396604,P29,5,32,1,10,11414.9742,2242.0727,11415.0952,2242.2437,11415.1647,2242.2959, 11415.3398,2242.3506,11415.4814,2242.3814,11415.9784,2242.3886,11416.1020,2242.3957, 11416.2668,2242.4028,11416.3517,2242.3838,11416.4702,2242.3054) (8043396604,P29,1,32,2,10,11416.4882,2242.2627,11416.5475,2242.1676,11416.5552,2242.1130, 11416.5423,2241.8945,11416.5371,2241.8303,11416.5785,2241.7404,11416.5166,2241.7235, 11416.4213,2241.6664,11416.2925,2241.6047,11416.1303,2241.4431) (8043396604,P29,1,32,3,10,11416.0428,2241.3861,11416.0016,2241.3481,11415.9243,2241.3434, 11415.7441,2241.3837,11415.5716,2241.4407,11415.4300,2241.5025,11415.3449,2241.5833, 11415.1879,2241.6926,11414.9896,2241.7187,11414.8274,2241.7567) (8043396604,P29,1,32,4,2,11414.7579,2241.8327,11414.7862,2241.9563) (8043396604,P29,1,32,5,2,0,0,0,0)

Response Description	Content	Description
	8043396604	Unit ID
	P29	Command Word
	5	Fence ID

	32	Total 32 Fence Nodes in fence ID 5
	1	Fence Node Page ID= 1 Page Index 1 to 5
	10	Total 10 Fence Nodes in Fence Node Page 1
	11414.9742,2242.0727	first Node. Longitude and Latitude. 11414.9742 DDDMM.MMMM Change the longitude to degree: 114+14.9742/60=114+0.24957=114.249570 It's a positive value. Means East Longitude. If -11414.9742 means West Longitude 2242.0727 DDMM.MMMM Change the latitude to degree: 22+42.0727/60=22+ 0.7012116=22.701211 It's a positive value. Means Northern latitude. If -2242.0727 means South latitude
	11415.0952,2242.2437	The Second Node. Longitude and Latitude
	…	From the third Node to 9th Node
	11416.4702,2242.3054	The 10th Node. Longitude and Latitude

Set fence Nodes for Fence ID 2. Total 17 Nodes
If less than 10 Nodes. Just send one command;
If less than 20 Nodes, need send two commands.
Note: Write longitude and latitude -4815.2106,-2019.3663,
Response longitude and latitude -4815.2105,-2019.3662
The last value is different between Write and Response message. This is because the longitude error caused by the conversion of latitude and longitude units is within the allowable range.

Write Command	**Note:** When the instruction is actually sent, there should be no line breaks in the content of the instruction. The newline in the example is because of the need for document layout (P29,1,2,1,10,-4815.2106,-2019.3663,-4810.1020,-2016.2750,-4806.6413,-2014.4198,-4802.8510, -2013.4920,-4758.0719,-2012.7188,-4754.7760,-2012.8735,-4750.4914,-2016.1204,-4749.6674, -2019.0572,-4749.6674,-2021.0660,-4750.3266,-2024.0012) (P29,1,2,2,7,-4750.3266,-2026.6266,-4750.6561,-2029.5601,-4752.6337,-2030.4862,-4759.5551, -2029.5601,-4809.6076,-2028.4794,-4814.8810,-2026.3178,-4817.8473,-2021.9930)	
Response	**Note:** There is no newline in the actual received command content. The newline in the example is due to document layout. (8043396604,P29,2,10,1,10,-4815.2105,-2019.3662,-4810.1019,-2016.2749,-4806.6412,-2014.4197, -4802.8509,-2013.4919,-4758.0718,-2012.7187,-4754.7759,-2012.8734,-4750.4913,-2016.1203, -4749.6673,-2019.0571,-4749.6673,-2021.0659,-4750.3265,-2024.0011) (8043396604,P29,2,17,2,7,-4750.3265,-2026.6265,-4750.6560,-2029.5600,-4752.6336,-2030.4861, -4759.5550,-2029.5600,-4809.6075,-2028.4793,-4814.8809,-2026.3177,-4817.8472,-2021.9929)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P24	Command Word
	2	Fence ID
	17	Total 17 Nodes in Fence ID 2
	2	Page ID 2
	7	Total 7 Nodes in Page ID 2
	-4750.3265,-2026.6265	first Node in page ID 2 Longitude and Latitude. -4750.3265 DDDMM.MMMM Change the longitude to degree: -(47+50.3265/60)=-(47+0.838775)=-47.838775 It's a negative value. Means West Longitude If 4750.3265 means East Longitude. -2026.6265 DDMM.MMMM Change the latitude to degree: -(20+26.6265/60)=-(20+0.443775)=-20.443775 It's a negative value.. Means South latitude If 2026.6265 means Northern latitude.
	…	From the second Node to 6th Node
	-4817.8472,-2021.9929	The 7th Node. Longitude and Latitude

Sending Command Channel

☑GPRS ☑SMS ☑USB

P30-Delete Fence Node info and Geo-fence name for a Fence ID

Command Description			
This command is used to delete fence Node information and geo-fence name for a fence ID			
Syntax			
Write Command	(P30,<Fence ID index>)		
Response	(<Unit ID>,P30,<Successful/failed>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Fence ID index>	Geo-fence ID index. The device supports at most 10 Fences.	1~10	
<successful/failed>	1 indicates Delete successfully; 0 indicates failed	0~1	
Example			
Delete fence Node information and geo-fence name for Fence ID 5			
Write Command	(P30,5)		
Response	(8043396604,P30,1)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P30	Command Word	
	1	1 indicates Erase successfully; 0 indicates failed	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P31-Finished Fence Node information Setting

Command Description			
This command is used to inform the device that GPS platform/Serial port side has finished setting this Geo-fence,it can detect geo-fence alert now.			
Syntax			
Write Command	(P31)		
Response	(<Unit ID>,P31)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
-	-		
Example			
Inform the device that GPS platform/Serial port side has finished setting this Geo-fence			
Write Command	(P31)		
Response	(8043396604,P31)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P31	Command Word	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P32-Force the device to go to sleep

Command Description

This command is used to force the device to go to sleep.
Note: After the device receives this command for 30 seconds, it goes to sleep.
If the current device is in the process of unlocking or locking, wait for the operation to end, then go to sleep again.

Syntax

Write Command	(P32)
Response	(<Unit ID>,P32)

Parameter Description

Parameters	Description	Value Range	Default
-	-		

Example

Force the device to go to sleep

Write Command	(P32)	
Response	(8043396604,P32)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P32	Command Word

Sending Command Channel

☑GPRS ☑SMS ☑USB

P35-Acknowledge Command to receive Alert and Position data

Command Description

This command is used to acknowledge the alert or position data at GPS platform.
Note: The device will keep on sending the same alert or position data if didn't receive the acknowledge command from GPS platform .
Whether the position data need to be acknowledge need to decode the ACK bit in Position data.

Syntax

Write Command	(P35)
Response	(<Unit ID>,P35)

Parameter Description

Parameters	Description	Value Range	Default
-	-		

Example

GPS platform send below command to acknowledge the alert or position data from device side.

Write Command	(P35)	
Response	(8043396604,P35)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P35	Command Word

Sending Command Channel

☑GPRS ☑SMS ☑USB

P36-Set/Query Vibration Sensitivity Coefficient threshold of Vibration alert and repeated interval

Command Description			
This command is used to set /query Vibration sensitivity coefficient threshold of Vibration alert. And minimum time interval for repeated vibration alarms. The greater the acceleration value, the harder it is to detect the vibration alarm.			
Syntax			
Read Command	(P36,<Action>)		
Response	(<Unit ID>,P36,<Acceleration threshold/interval for repeated>)		
Write Command	(P36,<Action>,< Acceleration threshold/interval for repeated>)		
Response	(<Unit ID>,P36, <Acceleration threshold/interval for repeated>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Action>	0 Query the previous setting 1 Write the Parameters 2 Query the interval for repeated vibration alarms 3 Write the interval for repeated vibration alarms	0~3	
<Acceleration threshold>	Vibration alert acceleration threshold. The greater the acceleration value, the harder it is to detect the vibration alarm. Unit in mg. suggest 500 to 900mg. default 500 mg.	500~8000	500
<interval for repeated>	Minimum time interval for repeated vibration alarms. The unit is seconds. Default 600 seconds.	1~65535	600
Example			
Query Vibration sensitivity coefficient threshold of Vibration alert.			
Read Command	(P36,0)		
Response	(8043396604,P36,500)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P36	Command Word	
	500	Vibration alert acceleration threshold.500mg	
Set Vibration sensitivity coefficient threshold of Vibration alert to 700mg			
Write Command	(P36,1,700)		
Response	(8043396604,P36,700)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P36	Command Word	
	700	Vibration alert acceleration threshold.700mg	
Query the interval for repeated vibration alarms			
Read Command	(P36,2)		
Response	(8043396604,P36,600)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P36	Command Word	
	600	Minimum time interval for repeated vibration alarms.600 seconds.	
Query the interval for repeated vibration alarms			
Write Command	(P36,3,60)		

Response	(8043396604,P36,60)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P36	Command Word
	60	Minimum time interval for repeated vibration alarms.60 seconds.
Sending Command Channel		
☑GPRS ☑SMS ☑USB		

P37-Set/Query Vibration Sensitivity Coefficient of Motion state detection

Command Description			
This command is used to set /query Vibration Sensitivity Coefficient of Motion state detection. The smaller the acceleration value, the easier it is to detect the Motion state. **Note:** if the motion acceleration value is 0 ,means disable motion detection function. And Vibration or Moving can't be wake up the device in future. Restore this function by setting other motion acceleration values.			
Syntax			
Read Command	(P37,<Action>)		
Response	(<Unit ID>,P37,<Acceleration threshold>)		
Write Command	(P37,<Action>,< Acceleration threshold>)		
Response	(<Unit ID>,P37,< Acceleration threshold>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Motion Acceleration Value>	Vibration Sensitivity Coefficient of Motion state detection. The smaller the acceleration value, the easier it is to detect the vibration. Unit in mg. suggest 63 to 500. default 126 mg. 0 indicates Disable motion detection function.	0 or 63~500	126
Example			
Query Vibration Sensitivity Coefficient of Motion state detection			
Read Command	(P37,0)		
Response	(8043396604,P37,126)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P37	Command Word	
	126	Motion Acceleration Value.126mg	
Set Vibration Sensitivity Coefficient of Motion state detection to 63 mg			
Write Command	(P37,1,63)		
Response	(8043396604,P37,63)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P37	Command Word	
	63	Motion Acceleration Value.63mg	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P38-Set/Query Interval of Unlocking alert

Command Description	
This command is used to set /query Interval of Unlocking alert. When the device is unlocked, an unlock alert is generated immediately. When the device is always unlocked, you can set the alert to be reported again at this interval.	
Syntax	
Read Command	(P38,<Action>)
Response	(<Unit ID>,P38,<Unlock alert interval>)
Write Command	(P38,<Action>,< Unlock alert interval>)
Response	(<Unit ID>,P38, <Unlock alert interval>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Unlock alert interval>	Unlock alert interval. Unit in minutes.	3~180	120

Example

Query Interval of Unlocking alert		
Read Command	(P38,0)	
Response	(8043396604,P38,120)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P38	Command Word
	120	Unlock alert interval.120 minutes
Set Interval of Unlocking alert to 3 minutes		
Write Command	(P38,1,3)	
Response	(8043396604,P38,3)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P38	Command Word
	3	Unlock alert interval.3 minutes

Sending Command Channel

☑GPRS ☑SMS ☑USB

P39-Set/Query Working time after waking up

Command Description

This command is used to set /query working time after waking up.

Note:

The device can be woken up by vibrating/swipe the RFID key/unlock (lock)/timed condition. For example, after the device vibration wakes up, it will work according to the preset working time. During the wake-up period, if the lock is unlocked, the time is accumulated again from the unlocking time; if it is continuously in the vibration state, the device continues to work until the device detects no wake-up condition, Then go to sleep.

Syntax

Read Command	(P39,<Action>)
Response	(<Unit ID>,P39,<Working time>)
Write Command	(P39,<Action>,<Working time>)
Response	(<Unit ID>,P39,<Working time>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
< Working time>	Working time after waking up. Unit in minutes.	3~10	10

Example

Query Working time after waking up

Read Command	(P39,0)	
Response	(8043396604,P39,10)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P39	Command Word
	10	Working time after waking up.10 minutes

Set Working time after waking up to 5 minutes

Write Command	(P39,1,5)	
Response	(8043396604,P39,5)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P39	Command Word
	5	Working time after waking up .5 minutes

Sending Command Channel

☑GPRS ☑SMS ☑USB

P40-Set/Query Alert Switch

Command Description

This command is used to set /query alert switch.
The device supports 10 types of alerts. They are Lock rope tamper, swiping unauthorized RFID key, unlocking, wrong password, vibration, enter geo-fence, exit geo-fence, low battery, Back cover Opened and Motor Fault alerts.

Syntax

Read Command	(P40,<Action>)
Response	(<Unit ID>,P40,<Lock rope tamper alert>,<Swiping unauthorized RFID key alert>,<Unlocking alert>,<Wrong password alert>,<Vibration alert>,<Enter geo-fence alert>,<Exit geo-fence alert >,<Low battery alert>,< Back cover Opened alert>,<Motor Fault alert>)
Write Command	(P40,<Action>,<Lock rope tamper alert>,<Lock rope tamper alert>,<Swiping unauthorized RFID key alert>,<Unlocking alert>,<Wrong password alert>,<Vibration alert>,<Enter geo-fence alert>,<Exit geo-fence alert>,<Low battery alert>,< Back cover Opened alert>,<Motor Fault alert>)
Response	(<Unit ID>,P40,<Lock rope tamper alert>,<Swiping unauthorized RFID key alert>,<Unlocking alert>,<Wrong password alert>,<Vibration alert>,<Enter geo-fence alert>,<Exit geo-fence alert >,<Low battery alert>,< Back cover Opened alert>,<Motor Fault alert>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Lock rope tamper alert>	Lock rope tamper alert switch 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	1
<Swiping unauthorized RFID key alert>	Swiping unauthorized RFID key alert switch 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	1
<Unlocking alert>	Unlocking alert switch 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	1
<Wrong password alert>	Wrong password alert switch: send the Unlock command with wrong password more than 5 times. 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	1
<Vibration alert>	Vibration alert switch 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	0
<Enter geo-fence alert>	Enter Geo-fence alert switch 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	1
<Exit geo-fence alert>	Exit Geo-fence alert switch 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	1
<Low battery alert>	Low Battery alert switch 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	1
<Back cover Opened alert>	Back Cover Opened alert switch 0 indicates Disable alert transmitting via GPRS and SMS 1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS	0~3	1
<Motor Fault alert>	Motor Fault alert switch 0 indicates Disable alert transmitting via GPRS and SMS	0~3	1

	1 indicates Enable alert transmitting via GPRS 2 indicates Enable alert transmitting via SMS 3 indicates Enable alert transmitting via GPRS and SMS		

Example

Query Alert switch setting

Read Command	(P40,0)	
Response	(8043396604,P40,1,0,1,1,0,1,1,1,1,1)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P40	Command Word
	1	Enable Lock rope tamper alert transmitting via GPRS channel
	0	Disable Swiping unauthorized RFID key alert transmitting
	1	Enable Unlocking alert transmitting via GPRS channel
	1	Enable Wrong password alert transmitting via GPRS channel
	0	Disable Vibration alert transmitting
	1	Enable Enter geo-fence alert transmitting via GPRS channel
	1	Enable Exit geo-fence alert transmitting via GPRS channel
	1	Enable Low battery alert transmitting via GPRS channel
	1	Enable Back cover Opened alert transmitting via GPRS channel
	1	Enable Motor Fault alert transmitting via GPRS channel.

Set Alert switch For Each alert types

Write Command	(P40,1,3,0,3,1,0,1,1,1,1,1)	
Response	(8043396604,P40,3,0,3,1,0,1,1,1,1,1)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P40	Command Word
	3	Enable Lock rope tamper alert transmitting via GPRS and SMS channel
	0	Disable Swiping unauthorized RFID key alert transmitting
	3	Enable Unlocking alert transmitting via GPRS and SMS channel
	1	Enable Wrong password alert transmitting via GPRS channel
	0	Disable Vibration alert transmitting
	1	Enable Enter geo-fence alert transmitting via GPRS channel
	1	Enable Exit geo-fence alert transmitting via GPRS channel
	1	Enable Low battery alert transmitting via GPRS channel
	1	Enable Back cover Opened alert transmitting via GPRS channel
	1	Enable Motor Fault alert transmitting via GPRS channel.

Sending Command Channel

☑GPRS ☑SMS ☑USB

P41- Authorized RFID key Management

P41- Query Authorized RFID key

Command Description			
This command is used to query Authorized RFID key. A total of 50 RFID keys are supported and they are stored in three separate groups. Up to 20 RFID keys per group			
Syntax			
Read Command	(P41,<Action>,<Authorized RFID key group Index>)		
Response	(<Unit ID>,P41,<Authorized RFID key group Index>,<Total RFID keys in this group>,<Unlock RFID keys…>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Action>	0 Query the previous setting	0	
<Authorized RFID key group Index>	A total of 50 RFID keys are supported and they are stored in three separate groups. Up to 20 RFID keys per group	1~3	
<Total RFID keys in this group>	Up to 20 RFID keys per group	0~20	
<Unlock RFID keys…>	The range of RFID key card number is: 0000000001~4294967295, no more than 10 Numbers, otherwise the input is considered invalid.	0000000001~ 4294967295	

Example

Query All Authorized RFID keys in group 2.

Read Command	(P41,0,2)	
Response	(8043396604,P41,2,3,0013953759,0013953758,0013953757)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P41	Command Word
	2	group 2
	3	Total RFID keys in this group
	0013953759,0013953758,0013953757	Unlock RFID keys

Query All Authorized RFID keys in group 1 ,2 and 3

Read Command	(P41,0,1) (P41,0,2) (P41,0,3)	
Response	**Note:** There is no newline in the actual received command content. The newline in the example is due to document layout. First Group (8043396604,P41,1,20,0000000021,0000000022,0000000023,0000000024,0000000025,0000000026, 0000000027,0000000028,0000000029,0000000030,0000000031,0000000032,0000000033,0000000034, 0000000035,0000000036,0000000037,0000000038,0000000039,0000000040) Second Group (8043396604,P41,2,20,0000000041,0000000042,0000000043,0000000044,0000000045,0000000046, 0000000047,0000000048,0000000049,0000000050,0000000051,0000000052,0000000053,0000000054, 0000000055,0000000056,0000000057,0000000058,0000000059,0000000060) Third Group (8043396604,P41,3,10,0000000061,0000000062,0000000063,0000000064,0000000065,0000000066,0000000067, 0000000068,0000000069,0000000070)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P41	Command Word
	1	group 1
	20	Total 20 RFID keys in this group
	0000000021,0000000022,0000000023…	Unlock RFID keys

Sending Command Channel
☑GPRS ☑SMS ☑USB

P41- Register(Add) Authorized RFID Key

Command Description			
This command is used to register Authorized RFID key. A total of 50 RFID keys are supported.			
Syntax			
Write Command	(P41,<Action>,<Add>,<Total of New added RFID keys>,< Unlock RFID keys…>)		
Response	(<Unit ID>,P41,<Add>,<Total RFID keys in Flash>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Action>	1 indicates Write the Parameters	1	
<Add>	Register Unlock RFID key. 1 indicates Add	1	
<Total of New added RFID keys>	The number of new RFID keys added this time. Add up to 20 RFID keys at a time	1~20	
<Unlock RFID keys…>	The range of RFID key card number is: 0000000001~4294967295, no more than 10 Numbers, otherwise the input is considered invalid.	0000000001~ 4294967295	
<Total RFID keys in Flash>	Total RFID keys remaining in Flash after added.	0~50	

Example

Add RFID keys: 0013953759,0013953758,0013953757 as Unlock RFID key.

Write Command	(P41,1,1,3,0013953759,0013953758,0013953757)	
Response	(8043396604,P41,2,3,0013953759,0013953758,0013953757)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P41	Command Word
	1	Add operation
	3	Total 3 RFID keys remaining in Flash after added

Add 50 RFID keys as Authorized RFID keys

Write Command	**Note:** When the instruction is actually sent, there should be no line breaks in the content of the instruction. The newline in the example is because of the need for document layout Add 20 RFID keys (P41,1,1,20,0000000021,0000000022,0000000023,0000000024,0000000025,0000000026,0000000027, 0000000028,0000000029,0000000030,0000000031,0000000032,0000000033,0000000034,0000000035, 0000000036,0000000037,0000000038,0000000039,0000000040) Add another 20 RFID keys (P41,1,1,20,0000000041,0000000042,0000000043,0000000044,0000000045,0000000046,0000000047, 0000000048,0000000049,0000000050,0000000051,0000000052,0000000053,0000000054,0000000055, 0000000056,0000000057,0000000058,0000000059,0000000060) Add last 10 RFID keys. Total supports 50 Unlock RFID keys (P41,1,1,10,0000000061,0000000062,0000000063,0000000064,0000000065,0000000066,0000000067, 0000000068,0000000069,0000000070)	

Response	(8043396604,P41,1,20) // Add 20 RFID keys
	(8043396604,P41,1,40) // Add another 20 RFID keys
	(8043396604,P41,1,50) // Add last 10 RFID keys. Total supports 50 Unlock RFID keys	

Response Description	**Content**	**Description**
	8043396604	Unit ID
	P41	Command Word
	1	Add operation
	40	Total 40 RFID keys remaining in Flash after

		added

Sending Command Channel

☑GPRS ☑SMS ☑USB

P41- Delete Specified Authorized RFID key

Command Description

This command is used to delete the specified Authorized RFID key.

Syntax

Write Command	(P41,<Action>,<Delete>,<Total number of RFID keys deleted>,< Unlock RFID keys…>)
Response	(<Unit ID>,P41,<Delete>,<Total RFID keys in Flash>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	1 indicates Write the Parameters	1	
<Delete>	delete the specified Authorized RFID key. 2 indicates Delete	2	
<Total number of RFID keys deleted>	The total number of RFID keys deleted in this operation. Delete up to 20 RFID keys at a time	1~20	
<Unlock RFID keys…>	The range of RFID key card number is: 0000000001~4294967295, no more than 10 Numbers, otherwise the input is considered invalid.	0000000001~ 4294967295	
<Total RFID keys in Flash>	Total RFID keys remaining in Flash after deleted.	0~50	

Example

Delete RFID keys: 0013953759,0013953758,0013953757

Write Command	(P41,1,2,3,0013953759,0013953758,0013953757)	
Response	(8043396604,P41,2,47)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P41	Command Word
	2	Delete operation
	47	Total 47 RFID keys remaining in Flash after deleted

Delete 10 Authorized RFID keys

Write Command	**Note:** When the instruction is actually sent, there should be no line breaks in the content of the instruction. The newline in the example is because of the need for document layout Delete 10 Authorized RFID keys **(P41,1,2,10,0000000021,0000000062,0000000063,0000000064,0000000065,0000000066,0000000067, 0000000068,0000000069,0000000070)**	
Response	(8043396604,P41,2,23)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P41	Command Word
	2	Delete operation
	23	Total 23 RFID keys remaining in Flash after deleted

Sending Command Channel

☑GPRS ☑SMS ☑USB

P41- Delete All Authorized RFID keys in Device

Command Description

This command is used to delete the Authorized RFID keys stored in device at once.

Syntax

Write Command	(P41,<Action>,<Delete All>)
Response	(<Unit ID>,P41,<Delete>,<Total RFID keys in Flash>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	1 indicates Write the Parameters	1	
<Delete All>	delete all Authorized RFID keys. 3 indicates Delete All	3	
<Total RFID keys in Flash>	Total RFID keys remaining in Flash after deleted	0	

Example

Delete All Authorized RFID keys

Write Command	(P41,1,3)	
Response	(8043396604,P41,3,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P41	Command Word
	3	Delete All
	0	Total 0 RFID keys remaining in Flash after deleted

Sending Command Channel

☑GPRS ☑SMS ☑USB

P43-Unlock the device by Password

Command Description			
This command is used to unlock device by password. Default password is 888888			
Syntax			
Write Command	(P43,<Password>)		
Response	(<Unit ID>,P43,<Successful/failed>,<Wrong password times>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<Password>	The password to unlock this device.The password is fixed to a 6 arbitrary combination of characters.	6 characters	888888
<successful/failed>	1 indicates unlock successfully; 0 indicates failed	0~1	
<Wrong password times>	The number of times the unlock command was sent with the wrong password. More than 5 times, the device will trigger wrong password alert. This value is reset to 0 when the correct password is successfully entered.		
Example			
Unlock device by password			
Write Command	(P43,888888)		
Response	(8043396604,P43,1,0)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P43	Command Word	
	1	1 indicates unlock successfully; 0 indicates failed	
	0	The number of times the unlock command was sent with the wrong password is 0. This value is reset to 0 when the correct password is successfully entered.	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P44-Change the Unlock Password

Command Description			
This command is used to change the unlock password. Default password is 888888			
Syntax			
Write Command	(P44,<New Password>,<Old Password>)		
Response	(<Unit ID>,P44,<Successful/failed>)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<New Password>	The new password to unlock this device. The password is fixed to a 6 arbitrary combination of characters.	6 characters	
<Old Password>	The new password to unlock this device. The password is fixed to a 6 arbitrary combination of characters.	6 characters	888888
<successful/failed>	1 indicates change password successfully; 0 indicates failed	0~1	
Example			
Change the unlock password			
Write Command	(P44,12#aAM,888888)		
Response	(8043396604,P44,1)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P44	Command Word	
	1	1 indicates change password successfully; 0 indicates failed	
Sending Command Channel			
☑GPRS ☑SMS ☑USB			

P46-Acknowledge Command to receive Lock or Unlock Report

Command Description

This command is used to acknowledge the Lock and Unlock Report data at GPS platform.
Note: The device will keep on sending the same Lock and Unlock Report data if didn't receive this acknowledge command from GPS platform .

Syntax

Write Command	(P46)
Response	(<Unit ID>,P46)

Parameter Description

Parameters	Description	Value Range	Default
-	-		

Example

GPS platform send below command to acknowledge the Lock and Unlock Report data from device side

Write Command	(P46)	
Response	(8043396604,P46)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P46	Command Word

Sending Command Channel

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P50-Enable/Disable the Power Switch on Device Mainboard

Command Description

This command is used to enable or disable the power switch on device mainboard.
After Disable power switch function, The device can't be shut down by this power switch.

Syntax

Read Command	(P50,<Action>)
Response	(<Unit ID>,P50,<Enable/Disable Power Switch >)
Write Command	(P50,<Action>,<Enable/Disable Power Switch>)
Response	(<Unit ID>,P50,<Enable/Disable Power Switch >)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Enable/Disable Power Switch >	0 indicates Disable Power Switch function, The device can't be power off by this power switch.; 1 indicates Enable Power Switch function	0~1	1

Example

Query Power Switch Status

Read Command	(P50,0)	
Response	(8043396604,P50,1)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P50	Command Word
	1	Enable Power Switch function

Disable Power Switch on device Mainboard

Write Command	(P50,1,0)	
Response	(8043396604,P50,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P50	Command Word
	0	Disable Power Switch function

Sending Command Channel

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P97-Set/Query Data Acknowledgement Mechanism

Command Description

This command is used to change the data acknowledgement mechanism. By default, all alert data and lock/unlock report -(P45) require the GPS platform to acknowledge them, otherwise the data will continue to be sent. With this command, you can configure these data without platform confirmation, or configure the maximum number of reports when the platform does not respond correctly.

Syntax

Read Command	(P97,<Action>)
Response	(<Unit ID>,P97,<Data type>,<Enable/Disable>,<Repeat times>)
Write Command	(P97,<Action>,<Data type>,<Enable/Disable>,<Repeat times>)
Response	(<Unit ID>,P97,<Data type>,<Enable/Disable>,<Repeat times>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<Data type>	0 indicates Real time Position data 1 indicates Blind zone data 2 indicates Alert data Refer to Section 7.1 Position and Alert data No.5 3 indicates Lock and Unlock report-P45	0~3	
<Enable/Disable>	1 Indicates Enable acknowledgement mechanism. i.e. Set this data type require acknowledgement from GPS platform. 0 indicates Disable acknowledgement mechanism. i.e. Set this data type doesn't require acknowledgement from GPS platform. If this value is 0, the <Repeat times> parameter can be ignored	0~1	
<Repeat times>	0 means Repeat this report all the time if device do not receive the correct response command; 1~127 means Repeat Specified times, and then report the next data.	0~127	

Example

Query Blind zone data's data acknowledgement mechanism setting

Read Command	(P97,0,1)	
Response	(8043396604,P97,1,0,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P97	Command Word
	1	Data type: Blind zone data
	0	Disable acknowledgement mechanism If this value is 0, the <Repeat times> parameter can be ignored
	0	Repeat times

Query Lock and Unlock data's data acknowledgement mechanism setting

Read Command	(P97,0,3)	
Response	(8043396604,P97,3,1,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P97	Command Word
	3	Data type: Lock and Unlock data
	1	Enable acknowledgement mechanism
	0	Repeat this report all the time if device do not receive the correct response command

Disable Alert data acknowledgement mechanism		
Write Command	(P97,1,2,0,0)	
Response	(8043396604,P97,2,0,0)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P97	Command Word
	2	Data type: Alert data
	0	Disable acknowledgement mechanism. If this value is 0, the <Repeat times> parameter can be ignored
	0	Repeat times
Sending Command Channel		
☑GPRS ☑SMS ☑USB		

P99-Firmware Upgrade over the air

Command Description			
This command is used to upgrade the device firmware the air. Need to contact sales to confirm the correct IP address and port			
Syntax			
Write Command	(P99,<OTA server IP>,<OTA server port>)		
Response	(<Unit ID>,P99)		
Parameter Description			
Parameters	**Description**	**Value Range**	**Default**
<OTA server IP>	Host Server IP that deploy OTA server software and specified firmware file		13.228.118.160
<OTA server port>	UDP port.		XXXX
Example			
Query Power Switch Status			
Write Command	(P99,13.228.118.160,1234)		
Response	(8043396604,P99)		
Response Description	**Content**	**Description**	
	8043396604	Unit ID	
	P99	Command Word	
Sending Command Channel			
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P100- Query device real-time status and GSM module version

Command Description

This command is used to query device real-time status and GSM module version(2G/3G/4G)

Syntax

Read Command	(P100)
Response	(<Unit ID>,P100,<status data...>)

Parameter Description

Parameters	Description	Value Range	Default
/	/	/	/

Example

Query device real-time status and GSM module version

Read Command	(P100)	
Response	(8043396604,P100,SIM:1,CG:1,CSQ:22,MV:UC15EQAR03A10E1G,MS:7,IP:13.228.118.160,1234,Loc:1,Sat:11,Lock:1,Mil:10546,His:0,Rc:0,Volt:4082,90%,Chg:0,Tmp:37)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P100	Command Word
	SIM	Working SIM card slot: 1 mean's SIM Card slot 1 is working. The value is1 or 2
	CG	Network registration status 1: registered local network 2: unregistered, in search 3; registration rejected 4: unknown 5: registered roamed
	CSQ	Received signal strength indication
	MV	GSM module version: this is Quectel 3G module UC15EQAR03A10E1G
	MS	Mobile Status(Online mode) 0: The module is powered on for the first time 1: Module power off and restart 2: AT command initialization 3: Network check 4: Dialing 5: Network connection 6: Login 7: Online 8: Offline
	IP	Upload data to this IP/Port IP:13.228.118.160 Port:1234
	Loc	location status: 1 mean's positioned,0 mean's not positioned
	Sat	Number of satellites
	Lock	Lock status: 1 mean's lock,0 mean's unlock
	Mil	Currently mileage(unit is meter)
	His	The number of remaining blind zone replenishment data stored by the current device
	Rc	The number of remaining blind zone P45(lock/unlock data) stored by the current device
	Volt	Current battery voltage (the unit is millivolts) and Percentage of electricity
	Chg	Whether charging status 1 mean's charging,0 mean's no charging
	Tmp	Current MCU temperature(the unit is Celsius)

Sending Command Channel

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P106-Set/Query Can Unlock In The polygon Geo-fence

Command Description

This command can query or set whether unlocked by swipe RFID card in the specified Geo-fence.

The total number of configurable polygon Geo-fence is 10 pcs. Please refer to commands P24,P29,P30,P31.

Syntax

Read Command	(P106,<Action>)
Response	(<Unit ID>,P106,<Geo-fence 1 Enable/Disable>,...<Geo-fence 10 Enable/Disable>)
Write Command	(P106,<Action>,<Geo-fence 1 Enable/Disable>,...<Geo-fence 10 Enable/Disable>)
Response	(<Unit ID>,P106, <Geo-fence 1 Enable/Disable>,...<Geo-fence 10 Enable/Disable>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<POI 1 Enable/Disable>,...<POI 100 Enable/Disable>	0 Disable 1 Enable	0~1	

Example

Query can unlock in the specified Geo-fence

Read Command	(P106,0)	
Response	(8043396604,P106,**1**,0,0,0,**1**,0,0,0,0,**1**)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P106	Command Word
	1	**swipe RFID only unlock in Geo-fence 1**
	0	swipe RFID can't unlock in Geo-fence 2
	0	swipe RFID can't unlock in Geo-fence 3
	0	swipe RFID can't unlock in Geo-fence 4
	1	**swipe RFID only unlock in Geo-fence 5**
	0	swipe RFID can't unlock in Geo-fence 6
	0	swipe RFID can't unlock in Geo-fence 7
	0	swipe RFID can't unlock in Geo-fence 8
	0	swipe RFID can't unlock in Geo-fence 9
	1	**swipe RFID only unlock in Geo-fence 10**

Set can unlock in the specified Geo-fence

Write Command	(P106,1,1,1,1,1,1,1,1,1,1)	
Response	(8043396604,P106,1,1,1,1,1,1,1,1,1,1)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P106	Command Word
	1	swipe RFID only unlock in Geo-fence 1
	1	swipe RFID only unlock in Geo-fence 2
	1	swipe RFID only unlock in Geo-fence 3
	1	swipe RFID only unlock in Geo-fence 4
	1	swipe RFID only unlock in Geo-fence 5
	1	swipe RFID only unlock in Geo-fence 6
	1	swipe RFID only unlock in Geo-fence 7
	1	swipe RFID only unlock in Geo-fence 8
	1	swipe RFID only unlock in Geo-fence 9
	1	swipe RFID only unlock in Geo-fence 10

Sending Command Channel

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P108-Set/Query Can Unlock In The POI(Point of Interest)

Command Description

This command can query or set whether unlocked by swipe RFID card in the specified POI.

The total number of configurable POI is 100 pcs.

Syntax

Read Command	(P108,<Action>)
Response	(<Unit ID>,P108, <Total number of POIs>,<unlock status>,<Radius>)
Write Command	(P108,<Action>,<unlock status>,<Radius POI 1 lng lat POI2 lng lat ... POI100 lng lat>)
Response	(<Unit ID>,P108, <Total number of POIs>,<unlock status>,<Radius>)

Parameter Description

Parameters	Description	Value Range	Default
<Action>	0 Query the previous setting 1 Write the Parameters	0~1	
<unlock status>	0 Disable 1 Enable	0~1	
<Radius POI 1 lng lat POI2 lng lat ... POI100 lng lat>	Radius range: 0-FFFF, two bytes, unit is meter Longitude and latitude string: 4 bytes per longitude, 4 bytes per latitude, appearing in pairs, a total of up to 100 pairs Note: From the beginning of the radius to the end longitude latitude pairs, all are in hexadecimal notation, with no sign in the middle.		

Example

Query can unlock in the specified POI

Read Command	(P108,0)
Response	(8043396604,P108,91,0,65535)

Response Description

Content	Description
8043396604	Unit ID
P108	Command Word
91	The total number of POIs that have been set
0	swipe RFID can't unlock in POIs, can unlock by GPRS command
65535	Radius is 65535 meters

Set can unlock in the specified POI

Write Command

(P108,1,1,FFFFFB42AA45008984E0FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
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FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
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Command in hex format:

28503130382C312C312CFFFFFB42AA45008984E0FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF
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Response	(8043396604,P108,1,1,65535)	
Response Description	**Content**	**Description**
	8043396604	Unit ID
	P108	Command Word
	1	The total number of POIs that have been set
	1	swipe RFID only unlock in POIs
	65535	Radius is 65535 meters

Sending Command Channel

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