FIFOTRACK COMMAND LIST

Model: Q3

Version: V1.10

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Document History

Version	Revision Date	Author	Detail
V1.10	Dec 24, 2024	Vito Hu	Add *S52* command
V1.9	Mar 19, 2024	Vito Hu	Add *F25* command
V1.8	Feb 20, 2024	Vito Hu	Modify *B23* command
V1.7	Oct 26, 2023	Vito Hu	Add *B78* command Add *pre-alm-delay* in *B35*, *B36*, *B76* command Add alarm code 53/54/55/56 in “Appendix A”
V1.6	Jul 10, 2023	Vito Hu	Add *S19* command Add *mode 3* in *B71* command
V1.5	May 15, 2023	Vito Hu	Add *pre-alarm-t* in B76 command Add *S17*, *S21* command
V1.4	Feb 15, 2023	Vito Hu	Modify *B00* command Add *S20* command Modify Appendix A
V1.3	Nov 30, 2022	Vito Hu	Modify *B29* command, add *rom-level* field Add *B35* command, “Setting Tilt Detection” Modify *B36* title to “Setting Fall Down Detection” Modify *B70* command, add *long-key-voice* field Modify *B76* command Modify Appendix A
V1.2	Sep 30, 2022	Vito Hu	Modify *B32* command Delete *vol-change-disable* field in *B70* Add *num-sel* field in *B72*
V1.1	Sep 9, 2022	Vito Hu	Initial Version

Contents

1 GPRS Command Format

GPRS uplink (i.e.: Data is sent from terminal to platform) command format:

$$<pack-len>,<ID>,<work-no>,<cmd-code>,<cmd-para>*<checksum>\r\n

GPRS downlink (i.e.: Data is sent form platform to terminal) command format:

##<pack-len>,<ID>,<work-no>,<cmd-code>,<cmd-para>*<checksum>\r\n

Remarks:

- Comma (,) is used to separate data field, and it is necessary. There is no space before or after comma.
- pack-len: Package Length, decimal string format, the field of *pack-len* is {,*<ID>,<work-no>,<cmd-code>,<cmd-para>*}, be careful, comma(,) in front of *ID* included.
- ID: Terminal ID, default IMEI.
- work-no: working number, hexadecimal string format, cyclic accumulation from 1 to 0xFFFF.
- cmd-code: Command code, or specification of data type.
- cmd-para: parameter or description of *cmd-code*, which is described in the following chapter.
- checksum: checksum of package, 2 bytes hexadecimal string format, XOR of {*<pack-len>,<ID>,<work-no>,<cmd-code>,<cmd-para>*}.
- \r\n: End of package, i.e. <CR><LF>.
- Without specification, multi-byte binary data in *cmd-para* uses big endian format, i.e. Most Significant Byte first.

2 SMS Command Format

Sending SMS (from mobile to tracker) command format:

<password>,<cmd-code>,<cmd-para>

Reply SMS (from tracker to mobile) data format:

<cmd-code>,<proc-result>

01 password: SMS password, 6 digits, default “000000”. *B10* command can be used to change password

02 cmd-code: command code, the same as *cmd-code* filed in GPRS command.

03 cmd-para: command parameter, the same as *cmd-para* filed in GPRS command.

04 proc-result: command process result

OK – Succeed.

05 SMS command with invalid password, or with incorrect format, no reply will be sent.

3 Serial port (COM) Command Format

Setting command format:

#<cmd-code>,<cmd-para><CR><LF>

Reply data format:

#<cmd-code>,<proc-result><CR><LF>

cmd-code, cmd-para: the same as corresponding filed of GPRS/SMS command.

proc-result: SMS command procession result

OK – Succeed.

UNSUPPORT – Command not supported.

FAILED –Procession failed.

4 Command Writing Specification

- Comma (,) is used to separate multi-filed, there is no space before and after comma.
- For command with multi parameters, filed(s) can be empty, the corresponding parameter is set to default.
- The following chapters describe *cmd-code* and *cmd-para*.
- The “Retrieve” row in the following chapters describes the corresponding query command.

5 Command List

B00 – Open/Close TCP Connection	
Source	GPRS/COM/SMS
Description	B00,<type>,<IP-domain>,<port> 01 type: 0 (Default)~Close TCP Connection; 1~Open TCP Connection 02 IP-domain: server IP or domain. 03 port: server port.
Reply	B00,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B00,0 01 Close TCP Connection, tracker will neither generate nor send GPRS package B00,0,47.88.35.165,10502 01 Close TCP Connection, tracker will neither generate nor send GPRS package B00,1,47.88.35.165,10502 01 Open TCP connection, and all generated data will be sent to remote server 47.88.35.165:10502
Retrieve	C04,B00

B01 – Setting GPRS APN Parameters	
Source	GPRS/COM/SMS
Description	B01,<apn_name>,<apn_usr>,<apn_pwd> 01 apn_name: APN name. 02 apn_usr: APN user name. 03 apn_pwd: APN password. 04 Leave *apn_usr* and *apn_pwd* fields empty, if neither APN username nor APN password exists. 05 Contact to local ISP for APN detail.
Reply	B01,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.

Example	B01,cmnet 01 Set APN name to “cmnet”, APN login username and password empty.
Retrieve	C04,B01

B02 – Setting GPRS Link Protocol

Source	GPRS/COM/SMS
Description	B02,<link_type> 01 link_type: Link protocol, value “TCP” or “UDP”. 02 default “TCP” protocol.
Reply	B02,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B02,TCP 01 Set link protocol to TCP.
Retrieve	C04,B02

B03 – Setting Tracking Time Interval

Source	GPRS/COM/SMS
Description	B03,<moving_tmr>,<stop_tmr> 01 moving_tmr: timing interval when moving, unit s, default 0s. 02 stop_tmr: timing interval when stop, unit s, default 0s. 03 When *stop_tmr* field empty, it is set to the same value as *moving_tmr* 04 When *moving_tmr==0* or *stop_tmr==0*, timing uploading disabled for corresponding status
Reply	B03,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B03,60 01 Set both *moving_tmr* and *stop_tmr* to 60s, tracker uploads position data every 60s. B03,60,0 01 Set *moving_tmr* to 60s, and *stop_tmr* to 0, tracker uploads data every 60s when moving, and stops uploading for stop status.
Retrieve	C04,B03

B10 – Setting SMS Password	
Source	GPRS/COM/SMS
Description	B10,<sms_pwd> 01 sms_pwd: SMS password, 6 digits, default “000000”.
Reply	B10,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B10,472627 01 Set SMS password to “472627”. B10,47262A 01 Invalid command, because SMS password needs to be a 6 digits string.
Retrieve	C04,B10

B11 – Setting SOS Number	
Source	GPRS/COM/SMS
Description	B11,<sos_num1>,<sos_num2>,<sos_num3> 01 sos_num1, 2, 3: SOS numbers to be set; 3 numbers can be set at most. 02 Refer to *B23* for the function of SOS number(s).
Reply	B11,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B11,15698210011,,15698210200 01 Set *sos_num1* to 15698210011, *sos_num2* to empty, *sos_num3* to 15698210200.
Retrieve	C04,B11

B14 – Setting SMS Time Zone	
Source	GPRS/COM/SMS
Description	B14,<tzone> 01 tzone: time zone, range [-12, 12]. 02 Default value of *tzone* is 0. 03 When SMS time zone is set, all tracking/alarm SMS use *tzone* for date & time. 04 *B14* setting doesn’t affect date & time in GPRS package, which always uses UTC-0 time zone.

Reply	B14,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B14,-8
Retrieve	C04,B14

B17 – Clear Blind Data

Source	GPRS/COM/SMS
Description	B17,<data_type> 01 data_type: blind data type. 1 – GPRS Blind. 2 – SMS blind. 3 – Both GPRS and SMS blind.
Reply	B17,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B17,3 01 Clear both GPRS and SMS blind data.
Retrieve	UNSUPPORT

B19 – Setting Circle geo-fence

Source	GPRS/COM/SMS
Description	B19,<index>,<flag>,<radius>,<lat>,<lon> 01 index: fence index, value 1~4, i.e.: 4 geo-fence can be set at most. 02 flag: alarm flag flag=1: Trigger alarm when exit fence. flag=2: Trigger alarm when enter fence. flag=3: Trigger alarm both enter and exit fence. 03 radius: radius of circle geo-fence, unit meter. 04 lat: latitude of center point, decimal string format. 05 lon: longitude of center point, decimal string format. 06 When *flag*, *radius*, *lat*, *lon* are empty, delete goe-fence specified by *index*; When *index*=0 or empty, delete all.
Reply	B19,<err_code> 01 err_code: procession error code. OK – Succeed.

	UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,B19,<index> 01 index: fence index, value 1~4, the same as *index* field in setting command.

B23 – Setting Alarm Action

Source	GPRS/COM/SMS
Description	B23,<alm-code>,<GPRS><sos1-sms><sos1-two-way><sos1-monitor>,<sos2-sms><sos2-two-way><sos2-monitor>,<sos3-sms><sos3-two-way><sos3-monitor> 01 alm-code: Alarm type, refer to *Appendix –A*. 02 GPRS: 1~Enable GPRS uploading; 0~Disable 03 <sosx-sms><sosx-two-way><sosx-monitor>: Action to SOS number. *x* range 1/2/3, which corresponds to #1/#2/#3 SOS number. SOS number can be set using *B11* command. Three groups of action supported, separated using comma (,). Each group has three options: *sosx-sms*: 1~ Enable sending SMS to #x SOS number; 0~Disable *sosx-two-way*: 1~ Enable dialing #x SOS number under two-way mode; 0~Disable *sosx-monitor*: 1~Enable dialing #x SOS number under monitor mode; 0~Disable 04 When both *sosx-two-way* and *sosx-monitor* are set, *sosx-monitor* is valid, while *sosx-two-way* ignored. 05 If the field of #2 or #3 SOS number action is empty, use the same settings as #1 number. Refer to "Example"
Reply	B23,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B23,2,1101 01 Set action for "SOS" alarm a Sending GPRS alarm data to server b Action to #1 SOS number: Sending alarm SMS; Monitoring dialing c Action to #2 SOS number: Sending alarm SMS; Monitoring dialing. (#2 field empty, use the same setting as #1 number) d Action to #3 SOS number: Sending alarm SMS; Monitoring dialing. (#3 field empty, use the same setting as #1 number) 02 The command equals to "B23,2,1101,101,101" B23,25,1101,100 01 Set action for "Tilt" alarm a Sending GPRS alarm data to server b Action to #1 SOS number: Sending alarm SMS; Monitoring dialing

	c Action to #2 SOS number: Sending alarm SMS; d Action to #3 SOS number: Sending alarm SMS; Monitoring dialing. (#3 field empty, use the same setting as #1 number) 02 The command equals to "B23,25,1101,100,101" B23,31,1101,100,110 01 Set action for "Fall Down" alarm a Sending GPRS alarm data to server b Action to #1 SOS number: Sending alarm SMS; Monitoring dialing c Action to #2 SOS number: Sending alarm SMS; d Action to #3 SOS number: Sending alarm SMS; Two-way dialing.
Retrieve	C04,B23,<alm-code> 01 alm-code: Alarm type, refer to *Appendix–A*. The same as *alm-code* field in setting command.

B26 – Setting Alarm SMS Head String

Source	GPRS/COM/SMS
Description	B26,<alm-code>,<sms_string> 01 alm-code: Alarm type, refer to *Appendix –A*. 02 sms_string: SMS head string, 16 bytes length at most. 03 When send "B26" only, with *alm-code* and *sms_string* fields empty, set all head string to default 04 Refer to *Appendix-A* for default string.
Reply	B26,<err_code> 01 err_code: error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED –Processing failed.
Example	B26,2,HELP 01 Set SMS head string of SOS to "HELP".
Retrieve	C04,B26,<alm-code> 01 alm-code: Alarm type, refer to *Appendix –A*. The same as *alm-code* field in setting command.

B29 – Setting Sensitivity of Motion Sensor

Source	GPRS/COM/SMS
Description	B29,<mov-stop-level>,<rom-level> 01 mov-stop-level: sensitivity of motion sensor, value [0, 100], default 10; the smaller value, the higher sensitivity 02 rom-level: sensitivity for reset-on-motion function, range [0,100], default 5; the

	smaller value, the higher sensitivity 03 *mov-stop-level* is used for the judgment of Moving/Stop, "No Movement" detection 04 rom-level is used for reset-on-motion in "Tilt"/"Fall Down" function
Reply	B29,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B29,20
Retrieve	C04,B29

B31 – Setting SOS Number Attribute

Source	GPRS/COM/SMS
Description	B31,<sos-num-idx>,<two-way-call>,<monitor>,<pos-sms> 01 Set SOS number attribute, refer to *B11* command for SOS number setting. 02 sos-num-idx: SOS index, value 1, 2, 3, which corresponds to SOS number set by *B11* command. 03 two-way-call: attribute of two-way conversation. 04 monitor: attribute of monitor-mode conversation. 05 pos-sms: attribute of position SMS. 06 Description of attributes: two-way-call: Pressing SOS button to pick up incoming phone-call in two-way conversation mode. monitor: tracker automatically picks up incoming phone-call in monitor mode. pos-sms: Tracker sends position SMS after incoming phone-call ends. Refer to *C01* command for SMS format. 07 When both *two-way-call* and *monitor* are set, *monitor* is valid, i.e.: tracker picks up phone-call in monitor mode. 08 When the command string has only *sos-num-idx* field, default attribute is set to corresponding SOS number. 09 Default attribute of SOS number: *two-way-call* and *pos-sms*.
Reply	B31,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B31,1,1,1,1 01 Set attribute of the first SOS number: tracker automatically picks up incoming phone-call under monitor mode, reply a position SMS.
Retrieve	C04,B31,<sos-num> 01 sos-num: SOS index, value 1, 2, 3. The same as *sos-num* field in setting command.

B32 – Setting Conversation Volume	
Source	GPRS/COM/SMS
Description	B32,<vol-spk>,<vol-mic>,<vol-fix> 01 The command is used to set self-defined volume for phone-call conversation 02 vol-spk: Self-defined speaker volume, unit %, range 0~100, default 0 03 vol-mic: Self-defined microphone gain, unit %, range 0~100, default 0 04 vol-fix: 0(default)~pressing CAL button can change conversation between default and self-defined; 1~Using the SPK/MIC volume set by *B32* command for conversation 05 Default volume: Speaker~40%, Microphone~63% 06 Due to hardware limitations, 17% change rate corresponds to one step for speaker, and 13% for microphone
Reply	B32,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B32,34,50,1 01 Set speaker volume to 34%, and microphone gain to 50%; Using the volume setting for all conversation, pressing CAL button cannot change volume
Retrieve	C04,B32

B35 – Setting Tilt Detection	
Source	GPRS/COM/SMS
Description	B35,<enable>,<angle>,<pre-alm-t>,<alarm-t>,<option>,<reset-angle>,<pre-alm-delay> 01 enable: 0~Disable tilt detection (default); 1~Enable 02 angle: Angle of change to trigger "Tilt" alarm, unit degree, range [0°,90°], default 30° 03 pre-alm-t: pre-alarm duration, unit second, default 30s, range [0,1000]. 04 alarm-t: Alarm trigger delay, unit second, default 30s. After tilt detected, tracker do nothing but pre-alarm, and sends GPRS/SMS alarm package when *alarm-t* expired 05 option: Optional function for "Tilt" alarm *option==1*: reset-on-motion, tracker stops pre-alarm and alarm trigger delay when shaking *option==2*: reset-on-angle, tracker stops pre-alarm and alarm trigger delay when angle change less than *reset-angle* *option==3* (default): tracker stops pre-alarm and alarm trigger delay when shaking or angle change less than *reset-angle* 06 reset-angle: Angle of change to stop pre-alarm and alarm trigger delay, valid when *option==2* or *option==3*, unit degree, default 15°, range [0,*angle*] 07 pre-alm-delay: pre-alarm delay, unit second, default 0. 08 pre-alarm definition: When tilt detected, tracker keeps silent for *pre-alm-delay*

	seconds, and then starts voice displaying, to remind user, for *pre-alm-t* seconds 09 "Tilt" alarm code 25. Refer to Appendix-A for more detail
Reply	B35,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B35,1,30,30,20,3 01 Enable tilt detection, when angle change large than 30°, tracker starts pre-alarm (voice displaying) for 30s, and delay 20s to send out "Tilt" alarm (GPRS/SMS/Call) 02 Enable reset-on-motion and reset-on-angle, during the pre-alarm period, angle changes less than *reset-angle*, shaking/walking/pressing SOS button will cancel pre-alarm and alarm trigger delay
Retrieve	C04,B35

B36 – Setting Fall Down Detection

Source	GPRS/COM/SMS
Description	B36,<enable>,<pre-alm-t>,<alarm-t>,<rst-on-motion>,<accl-level>,<pre-alm-delay> 01 enable: 0~Disable fall down detection (default); 1~Enable 02 pre-alm-t: pre-alarm duration, unit second, default 30s, range [0,1000]. 03 alarm-t: Alarm trigger delay, unit second. After fall down detected, tracker does nothing but pre-alarm, and sends GPRS/SMS alarm package when *alarm-t* expired 04 rst-on-motion: reset-on-motion. Shake to cancel pre-alarm and alarm trigger delay; After cancelled, voice displaying will be stopped, and NO GPRS/SMS alarm package sent; When *rst-on-motion*==1, NO pre-alarm voice display, nor fall down alarm triggered under continuous moving or walking status 05 accl-level: Acceleration level for fall down detection, default 55, range [20,60]. Higher value, more sensitive. 06 pre-alm-delay: pre-alarm delay, unit second, default 0. 07 pre-alarm definition: When "Fall Down" detected, tracker keeps silent for *pre-alm-delay* seconds, and then starts voice displaying, to remind user, for *pre-alm-t* seconds 08 "Fall Down" alarm code 31. Refer to Appendix-A for more detail
Reply	B36,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B36,1,30,20,1 01 Enable fall down detection, after fall down detected, tracker starts voice displaying to remind user. It will send out GPRS/SMS alarm package after 20s, but will continue voice displaying till 30s time is up.

	During the pre-alarm period, shaking/walking/pressing SOS button will cancel pre-alarm and alarm trigger delay
Retrieve	C04,B36

B70 – Setting the Functions to Button

Source	GPRS/COM/SMS
Description	B70,<hangup>,<pwroff-disable>,<long-key-voice> 01 hangup: 1~Press SOS button to hang up phone-call conversation; 0 (default)~Disable hang-up function of SOS button 02 pwroff-disable: 1~PWR button cannot be used to shut down device; 0 (default)~Long press PWR button can shut down device 03 long-key-voice: 1 (default)~Display voice when long press SOS or CAL button; 0~No voice displaying for long press SOS and CAL button
Reply	B70,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,B70

B71 – Setting GPS/WIFI Order

Source	GPRS/COM/SMS
Description	B71,<mode> 01 Device supports two methods for positioning, GPS and WIFI, and *B71* command is used to set the order of use 02 mode: positioning mode, default *mode==0*, description as below *mode==0*: Mandatory use GPS for all time, device uses GPS to get positioning information, and uploads to server whether GPS fixed or not. *mode==1*: Device uses GPS first, and switch to WIFI for positioning when GPS failed *mode==2*: Device uses WIFI first, and switch to GPS for positioning when no WIFI AP got *mode==3*: Device always uses the last GPS information for uploading 03 Device uploads unfixed GPS package to server when neither GPS nor WIFI positioning succeed
Reply	B71,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.

Example	
Retrieve	C04,B71

B72 – Setting Reminder Mode for Incoming Phone-call

Source	GPRS/COM/SMS
Description	B72,<incall-note>,<num-sel> 01 When phone-call incoming, device can remind user by voice ringing or vibration 02 incall-note: Reminder mode *incall-note==0*: No reminder for incoming phone-call *incall-note==1*: ringing *incall-note==2*: vibration *incall-note==3* (default): Both ringing and vibration 03 num-sel: Set incoming phone number type num-sel==0: Only SOS and Favorite contact num-sel==1: All number 04 Conversation mode
Reply	B72,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,B72

SOS number (Set with *B11*)	Monitor or two-way, set with *B31*
Favorite contact(Set with *B75*)	Two-way
Other numbers	Two-way

B73 – Setting SOS Dial Interval

Source	GPRS/COM/SMS
Description	B73,<sos-interval> 01 For some phones, voicemail answers incoming call when no person picks it up. It may cause device NO dialing the next SOS number. *B73* command can be used to avoid this situation. 02 sos-interval: Interval of dialing SOS number, unit second, default 0. When the interval time arrived, device hangs up the current number, and dials the next one. 03 Setting proper *sos-interval* according to actual situation.
Reply	B73,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported.

	FAILED – Procession failed.
Example	
Retrieve	C04,B73

B74 – Setting Auto Answer

Source	GPRS/COM/SMS
Description	B74,<auto-answer> 01 Default, pressing CAL button to answer the incoming phone-call; *B74* command is used to enable auto answer 02 auto-answer: 0 (default)~Disable auto answer, it is needed to press CAL button to answer the incoming phone-call; 1~Enable auto answer, tracker answers the incoming call after ringing once
Reply	B74,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,B74

B75 – Setting Favorite Contact

Source	GPRS/COM/SMS
Description	B75,<contact-no> 01 contact-no: Favorite contact phone number 02 After *contact-no* set, long press CAL button to start dialing
Reply	B75,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,B75

B76 – Setting No Movement Alarm

Source	GPRS/COM/SMS
Description	B76,<nm1-tmr>,<nm1-sh:nm1-sm>,<nm1-eh:nm1-em>,<nm2-tmr>,<nm2-sh:nm2-sm>,<nm2-eh:nm2-em>,<wday>,<pre-alm-t>,<pre-alm-delay> 01 nm1: “No Movement #1”; nm2: “No Movement #2”

<table>
<tr><td></td><td>
02 nm1-tmr: No movement #1 duration time, unit second, default 0
03 nm1-sh:nm1-sm: No movement #1 start hour and start minute, 24-hour format, separated using ‘:’
04 nm1-eh:nm1-em: No movement #1 end hour and end minute, 24-hour format, separated using ‘:’
05 nm2-tmr, nm2-sh:nm2-sm, nm2-eh:nm2-em: The same as no movement #1
06 wday: week day selected, one or more combinations in below table, default 1234567
<table>
<tr><th>wday</th><th>Week day</th></tr>
<tr><td>1</td><td>Monday</td></tr>
<tr><td>2</td><td>Tuesday</td></tr>
<tr><td>3</td><td>Wednesday</td></tr>
<tr><td>4</td><td>Thursday</td></tr>
<tr><td>5</td><td>Friday</td></tr>
<tr><td>6</td><td>Saturday</td></tr>
<tr><td>7</td><td>Sunday</td></tr>
</table>
07 pre-alm-t: pre-alarm duration for no movement alarm, unit second, range [6,+∞), default 0. During pre-alarm, tracker starts voice displaying to remind user, shaking or short-press-sos to cancel pre-alarm. “No Movement” alarm GPRS/SMS data package sent as below description:
pre-alm-t == 0: data package sent immediately after no movement detected
pre-alm-t != 0: Firstly, tracker keeps silent for pre-alm-delay seconds, and then starts pre-alarm (voice displaying) for pre-alm-t seconds; Tracker sends data package after pre-alm-t expired
08 pre-alm-delay: pre-alarm delay, unit second, default 0.
09 When only nm1-tmr field specified, enable no movement detection for all time, and every day
10 When tracker is in charging, no movement detection will be paused temporarily, till charging cable removed
11 “No Movement” alarm code 22. Refer to Appendix-A for more detail
</td></tr>
<tr><td>Reply</td><td>
B76,<err_code>
01 err_code: procession error code.
OK – Succeed.
UNSUPPORT – Command not supported.
FAILED – Procession failed.
</td></tr>
<tr><td>Example</td><td>
B76,3600,10:30,12:40,7200,22:20,7:40,12345
01 Enable no movement detection for Monday ~ Friday
02 when the cumulative time of no movement is larger than 3600s during 10:30~12:40, or larger than 7200s during 22:20~7:40, tracker sends out “No Movement” alarm

B76,3600,10:30,12:40,7200,22:20,7:40,12345,30
01 Enable no movement detection for Monday ~ Friday
02 when the cumulative time of no movement is larger than 3600s during 10:30~12:40, or larger than 7200s during 22:20~7:40, tracker starts 30s voice displaying, sends out “No Movement” alarm when expired
</td></tr>
</table>

	B76,3600,10:30,12:40,7200,22:20,7:40 01 Enable no movement detection for Monday ~ Sunday 02 when the cumulative time of no movement is larger than 3600s during 10:30~12:40, or larger than 7200s during 22:20~7:40, tracker sends out “No Movement” alarm B76,7200 01 Enable no movement detection for all time, and every day, when the cumulative time of no movement is larger than 7200s, tracker sends out “No Movement” alarm
Retrieve	C04,B76

B78 – Setting Power Related Alarm

Source	GPRS/COM/SMS
Description	B78,<en-pwr-on-alm>,<en-pwr-off-alm>,<en-chg-on-alm>,<en-chg-off-alm> 01 en-pwr-on-alm: 0 (Default)~Disable device’s power on alarm 1~Enabel power on alarm 02 en-pwr-off-alm: 0 (Default)~Disable device’s power off alarm 1~Enabel power off alarm 03 en-chg-on-alm: 0 (Default)~Disable device’s charging on alarm 1~Enabel charging on alarm 04 en-chg-off-alm: 0 (Default)~Disable device’s charging off alarm 1~Enabel charging off alarm 05 Power ON definition: Long-press PWR key to ON device 06 Power OFF definition: Long-press PWR key to OFF device/Battery exhausted OFF 07 Charging ON/OFF definition: Place device ON charger/Remove device from charger 08 Power ON/OFF alarm code 53/54; Charging ON/OFF alarm code 55/56. Refer to “*Appendix A*”. 09 Default, device uploads GPRS package if power related alarm detected. Uploading mode is set by *S19* command. 10 Using *B23* command to add/delete more actions for power related alarm
Reply	B78,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B78,1 01 Enable power ON alarm 02 Disable power OFF/Charging ON/Charging OFF alarm

	B78,1,0,1 01 Enable power ON/Charging ON alarm 02 Disable pwer OFF/Charging OFF alarm
Retrieve	C04,B78

B90 – Restart Tracker or Module

Source	GPRS/COM/SMS
Description	B90,<select> 01 select: option *select==1*: Restart device.
Reply	B90,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B90,1 01 Restart device.
Retrieve	UNSUPPORT

B91 – Setting Parameters to Default

Source	GPRS/COM/SMS
Description	B91 01 After command is set, all system parameters (except SMS password) are set to default.
Reply	B91,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B91
Retrieve	UNSUPPORT

B94 – Turn on/off LED Display

Source	GPRS/COM/SMS
Description	B94,<led-on> 01 led-on: 1–turn on LED, 0–turn off LED. 02 Default, *led-on*=1.

Reply	B94,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B94 01 Set LED to default: turn on.
Retrieve	C04,B94

B99 – OTA using FTP Server

Source	GPRS/COM/SMS
Description	B99,<file_name>,<option>,<ftp_address>,<ftp_port>,<ftp_loginid>,<ftp_loginpwd>,<apn>,<apn_name>,<apn_pwd> 01 file_name: file name for OTA, should be "xxx.bin" format 02 option: option for OTA, when the field empty, using default setting

option	Description
0(default)	Normal OTA, tracker check whether *file_name* match current version or not
1	Mandatory OTA, tracker doesn't check *file_name*

03 ftp_address: FTP server address, default 47.88.17.17
04 ftp_port: FTP server port, default 21
05 ftp_loginid, ftp_loginpwd: FTP login user-name and password, when fields empty, using default account on 47.88.17.17
06 apn, apn_name, apn_pwd: APN setting for FTP connection, default, tracker using the same setting as *B01* command
07 After *B99* command received, tracker matches *file_name* to current firmware version, and starts OTA according to result
08 During OTA operation, tracker will disconnect from tracking server, stop timing uploading.
09 The timeout for FTP OTA is 15mins, when exceed, tracker will restart automatically, and connect to tracking server
10 External power connection is needed during OTA operation, it is used for tracking reboot after OTA finished

Reply	B99,<err_str> 01 err_str: Error code, string format "Invalid BIN file, <ver>" – *file_name* doesn't match current firmware version, while *ver* is the current firmware version "No ext-pwr, Please Plug-in Charging Cable" – External power disconnect "The Same Version" – file_name has the same version to current firmware version "B99,OK" – OTA start
Example	B99,Q3-V1.02.bin

	01 Start OTA, tracker will connect to 47.88.17.17:21, using default FTP account for file download B99,Q3-V1.02.bin,1,120.24.95.123,9208,klone,klone@@2017 01 Start OTA, tracker will connect to *120.24.95.123:9208*, and upgrade to "*Q3-V1.02.bin*" 02 The login name and password of FTP server is "*klone*" and "*klone@@2017*"
Retrieve	

C01 – Retrieve Position Information

Source	COM/SMS/GPRS
Description	C01 01 After command is set, tracker sends a position message. 02 When alarm detected, tracker sends alarm SMS with C01 format automatically, to all SOS number(s). 03 When command is sent via GPRS, tracker replies normal position data.
Reply	When command is sent via GPRS, the replied data is normal position package. When command is sent via SMS/COM <sms_string_head>,yyyy-MM-dd hh:mm:ss,<gps_fix>, http://maps.google.com/maps?q=<Latitude>,<Longitude>&t=m a sms_string_head: SMS head string, for normal position data, sms_*string_head* is empty; for alarm data, refer to *Appendix-A* for default string. B yyyy-MM-dd hh:mm:ss: current date & time, which is effected by *B14* command setting. E gps_fix: GPS signal status, 'A'-fixed, 'V'-not fixed. G Latitude, Longitude: Latitude and longitude of last position point.
Example	Command: C01 Reply: 2021-06-29 06:12:50,V, http://maps.google.com/maps?q=22.643138,114.018001&t=m
Retrieve	UNSUPPORT

C02 – Retrieve Firmware/Hardware Version, SN, IMEI

Source	GPRS/COM/SMS
Description	C02
Reply	Uploading data format: C02,<IMEI>,<SN>,<fw_ver>,<hw_ver> 01 IMEI: IMEI of tracker. 02 SN: Serial number of tracker. 03 fw_ver: Firmware version.

	04 hw_ver: Hardware version.
Example	C02
Retrieve	UNSUPPORT

C03 – Retrieve Supply Power Status

Source	GPRS/COM/SMS
Description	C03
Reply	Uploading data format: C03,<bat_v>,<bat_percentage>[,charging] 01 bat_v: Voltage of internal battery. 02 bat_percentage: Percentage of internal battery capacity. 03 charging: The field is used to indicate the charging status. When charging cable plug-in, this field is "Charging"; When cable plug-out, the field is empty
Example	C03 Reply: C03,3.80,50%,Charging
Retrieve	UNSUPPORT

C04 – Retrieve Parameter Setting

Source	GPRS/COM/SMS
Description	C04,<cmd-code>,<query_para> 01 cmd-code: Command code to be retrieved. 02 query_para: Query parameter; refer to chapters above for detail.
Reply	C04,<cmd>,<cmd-para> 01 cmd-code: The same as sending command. 02 cmd-para: Retrieved parameter string, the same format as setting command described in the above chapters.
Example	Refer to chapters above.
Retrieve	UNSUPPORT

C06 – Retrieve Basic Information of Tracker

Source	GPRS/COM/SMS
Description	C06 01 Retrieve basic information of tracker in batch 02 The command is commonly used for GPRS linkage lost debug
Reply	C06,<GID>,<ip>:<port>,<TCP/UDP>;APN:<apn>,<apn_user>,<apn_pwd>;BAT:<bat_v>;B03:<base_int>,<stop_int>;<Moving/STOP>;B71:<mode>;Cache:<cache-num>;Fall:<motion-det-st> 01 GID: Tracker ID for GPRS data, default IMEI

	02 ip, port: Server setting in tracker 03 TCP/UDP: Transport protocol setting, string, value “TCP” or “UDP” 04 apn, apn_user, apn_pwd: APN setting in tracker, which can be set using *B01* command 05 bat_v: Voltage of internal battery, unit V 06 base_int, stop_int: GPRS uploading interval, which is the same as *B03* setting 07 Moving/STOP: Current motion status, string, value “Moving” or “STOP” 08 mode: WIFI/GPS positioning mode, refer to *B71* command for detail 09 cache-num: Saved GPRS blind data num, which Is not sent, and will be sent when GPRS connected 10 motion-det-st: Status of “Fall Down”/”Tilt”/”No Movement” detection, value “No Set”/”Enable”/”Disable”. Short press CAL button twice to toggle enable/disable “Fall Down”/”Tilt”/”No Movement” detection “No Set”: None of “Fall Down”/”Tilt”/”No Movement” set “Enable”: At least one of “Fall Down”/”Tilt”/”No Movement” set, and enabled by short press CAL button twice “Disable”: At least one of “Fall Down”/”Tilt”/”No Movement” set, and disabled by short press CAL button twice
Example	Command: C06 Reply: C06,863921032078944,173.212.241.52:10502,TCP;APN:CMNET,,;BAT:3.93V;B03:30,600;Stop;B71:0;Cache:0;Fall:Enable
Retrieve	UNSUPPORT

F25 – Start/Stop Time Tracking (Customized)

Source	GPRS/COM/SMS
Description	F25,time-tracking 01 time-tracking: 0~Stop time tracking; 1~Start time tracking 02 After time tracking start, a flag set in GPRS data package (A03.status), to indicate a time period of tracking; During time tracking, device generates and uploads GPRS data according to B03 setting
Reply	F25,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,F25

S09 – Setting GPRS Heartbeat Interval

Source	GPRS/COM/SMS

Description	S09,<moving-interval>,<stop-interval> 01 Heartbeat package is independent from normal GPRS position one 02 moving-interval: Heartbeat interval for moving status, unit s, default 0s 03 stop interval: Heartbeat interval for stop status, unit s, default 0s 04 When *moving-interval==0* or *stop-interval==0*, heartbeat disabled for corresponding status 05 When *stop-interval* field empty, *stop-interval* is set to the same value as *moving-interval* 03 Heartbeat data will not be saved to blind buffer; When new heartbeat package generated, old and unsent one will be discarded
Reply	S09,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	S09,60 01 Set both *moving-interval* and *stop-interval* to 60s, tracker uploads heartbeat every 60s for all time S09,60,0 01 Set *moving-interval* to 60s, and *stop-interval* to 0s, tracker uploads heartbeat every 60s when moving, and stops uploading for stop status
Retrieve	C04,S09

S17 – Download Audio File from FTP Server

Source	GPRS/COM/SMS
Description	S17,<file_name>,<ftp_address>,<ftp_port>,<ftp_loginid>,<ftp_loginpwd> 01 file_name: Full Audio file name to be download, case sensitivity 02 ftp_address: FTP server address, default 47.88.17.17 03 ftp_port: FTP server port, default 21 04 ftp_loginid, ftp_loginpwd: FTP login user-name and password, when fields empty, using default account on 47.88.17.17
Reply	S17,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	S17, CustRingTone.wav 01 Download “CustRingTone.wav” from 47.88.17.17:21 server
Retrieve	C04,S17,<file_name> 01 Verify whether *file_name* exists, if yes, display it

S19 – Setting Alarm Data Sending Mode	
Source	GPRS/COM/SMS
Description	S19,<gprs-mode>,<sms-mode> 01 gprs-mode: GPRS alarm data sending mode *gprs-mode==0* (default) ~ when alarm detected, tracker sends #1 GPRS data with last GPS information; Starts GPS module, and sends #2 GPRS data when GPS fixed. #1 and #2 data have the same alarm code, data-time *gprs-mode==1* ~ tracker sends #1 GPRS data with last GPS information *gprs-mode==2* ~ tracker starts GPS module, and sends #2 data when GPS fixed 02 *sms-mode*: SMS alarm data sending mode *sms-mode==0* (default) ~ tracker starts GPS module, and sends alarm SMS when GPS fixed *sms-mode==1* ~ tracker sends alarm SMS with last GPS information, starts GPS module, and sends another SMS when GPS fixed. Both SMS has the same alarm tip and the same date-time *sms-mode==2* ~ tracker sends alarm SMS with last GPS information
Reply	S19,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,S19

S20 – Setting Backup APN Parameters	
Source	GPRS/COM/SMS
Description	S20,<bkp_apn_name>,<bkp_apn_usr>,<bkp_apn_pwd> 01 bkp_apn_name: Backup APN name. 02 bkp_apn_usr: Backup APN user name. 03 bkp_apn_pwd: Backup APN password. 04 Backup APN may be used under roam status
Reply	S20,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	

S21 – Setting WiFi MAC White List	
Source	GPRS/COM/SMS
Description	S21,<action>,<mac> 01 action: *action == 0*: delete WiFi MAC, if *mac=="ALL"*, delete all MAC *action == 1*: Add WiFi MAC 02 mac: WiFi MAC to be deleted or added. Tracker supports up to 10 MACs 03 If white list not empty, trackers uploads scanned WiFi MACs which are in the list
Reply	S21,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	S21,0,ALL 01 Delete ALL MACs, white list is empty S21,0,4a:94:63:8c:1f:9c,7a:bd:b0:4c:02:44,ca:45:64:7a:3b:ff,9e:ce:ed:16:b1:0e 01 Delete 4 MACs, which are: 4a:94:63:8c:1f:9c 7a:bd:b0:4c:02:44 ca:45:64:7a:3b:ff 9e:ce:ed:16:b1:0e S21,1,4a:94:63:8c:1f:9c,7a:bd:b0:4c:02:44,ca:45:64:7a:3b:ff,9e:ce:ed:16:b1:0e 01 Add 4 MACs, which are: 4a:94:63:8c:1f:9c 7a:bd:b0:4c:02:44 ca:45:64:7a:3b:ff 9e:ce:ed:16:b1:0e
Retrieve	C04,S21

S52 – Setting Reference Position for Tilt Detection	
Source	GPRS/COM/SMS
Description	S52,cogx,cogy,cogz 01 reference position: Tracker calculates real-time position, and compares it with reference position; "Tilt" occurs if real-time position exceeds 02 cogx/cogy/cogz: Reference 3D (X/Y/Z axis) angle data, *cogx* cannot be set to zero (i.e. *cogx*≠0) 03 After *cogx*/*cogy*/*cogz* set, tracker detects tilt using it, and will not update reference position automatically 04 Below steps can be used to get reference position a Put the tracker in the reference position

	b Enable “Tilt” using *B35* command c Get reference position using “C04,S52,1” d Use the reply of “C04,S52,1” to set to the other trackers
Reply	S52,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	S52,180,92,87 01 Setting tilt reference position, X/Y/Z angle 180°/92°/87° S52 01 Close tilt reference potion, tracker will update it automatically
Retrieve	C04,S52,option 01 option: 0~Get set *S52* value; 1~Get real-time potion

Appendix A – Alarm code and alarm parameter

Below table describes the detailed information of supported alarm

alm-code	Default Action	Description	SMS Head String
2	GPRS, SMS, Two-way-call	SOS	SOS
17	GPRS	Internal battery low	Low Battery
22	GPRS	No Movement Alarm	No Movement
25	GPRS	Tilt/Man Down	Tilt
31	GPRS	Fall Down	Fall Down
33	GPRS	Exit geo-fence	Exit Fence
34	GPRS	Enter geo-fence	Enter Fence
53	GPRS	Device Power ON	Power ON
54	GPRS	Device Power OFF	Power OFF
55	GPRS	Charging ON	Charging ON
56	GPRS	Charging OFF	Charging OFF

NOTE:

"Default Action": Default action when alarm triggered;

"GPRS": Tracker uploads GPRS package when alarm triggered

"SMS": Tracker sends SMS to SOS number(s) when alarm triggered

"Two-way-call": Tracker dials all SOS numbers when alarm triggered

Alarm action can be modified by using *B23* command

"SMS Head String": Alarm SMS head string, can be modified by using *B26* command