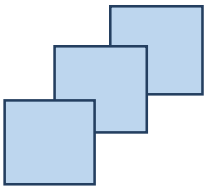
FIFOTRACK COMMAND LIST



Model: A100

Version: V1.3

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Document History

Version	Revision Date	Author	Detail
V1.3	Sep 27, 2019	Vito Hu	Modify *B04*, *B08*, *B34*, *B96* commands Delete *B15* command Delete *Enter Sleep*, *Wake Up* alarm code
V1.2	Dec 12, 2018	Vito Hu	Add *B29*, *B34*, *B80*, *B81*, *B82*, *B96*, *B99*, *C06*, *C08* Delete *D01*, *D02*, *D03*, *D04* and *Appendix B*
V1.1	Sep 10, 2015	Cici Wu	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”.

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 – Setting GPRS Parameters	
Source	GPRS/COM/SMS
Description	B00,<svr_type>,<net_addr>,<net_port> 01 svr_type: server selection, 1--main server, 2--backup server; When the connection to main server cannot be reached, tracker will automatically connect to the backup server. This avoids data losses. 02 net_addr: server IP or domain. 03 net_port: server port.
Reply	B00,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B00,1, 47.88.35.165,10502 01 Set main server: IP-47.88.35.165, port-10502.
Retrieve	C04,B00,<svr_type> 01 svr_type: server selection, the same as *svr_type* field in setting command.

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*, *apn_pwd* field empty, if no APN username and APN password exist. 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,<basic_tmr>,<accoff_tmr>,<parking_tmr> 01 basic_tme: normal time interval, unit s. 02 accoff_tmr: time interval when ACC OFF, unit s, default 0s. 03 parking_tmr: time interval when parking, unit s, default 0s. 04 When ACC is connected, tracker uses *accoff_tmr* priority, *parking_tmr* is ignored.
Reply	B03,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B03,30 01 Set timing tracking interval to 30s, tracker uploads position data every 30s.
Retrieve	C04,B03

B04 – Setting Roaming Tracking Time Interval	
Source	GPRS/COM/SMS
Description	B04, <roam_basic_tmr>,<roam_accoff_tmr>,<roam_parking_tmr> 01 roam_basic_tmr: roaming time interval, unit s, default 0s. 02 roam_accoff_tmr: time interval when ACC OFF under roaming, unit s, default 0s. 03 roam_parking_tmr: time interval when parking under roaming, unit s, default 0s. 04 When both *roam_accoff_tmr* and *roam_parking_tmr* are set, *roam_parking_tmr* will be ignored in actual usage. 02 When both *B03* and *B04* (*roam_basic_tmr* != 0) are set, tracker uses below logic for

	uploading: ⊙ When roaming detected, tracker uploads GPRS using *B04* setting, according to ACC, moving/parking status ⊙ For non-roaming condition, tracker uploads GPRS using *B03* setting, according to ACC, moving/parking status
Reply	B04,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B04,3600 01 Set timing tracking interval to 3600s while roaming. B04,3600,7200 01 Setting timing tracking interval to 3600s when ACC ON, 7200s when ACC off, under roaming status
Retrieve	C04,B04

B05 – Setting Distance Tracking Interval

Source	GPRS/COM/SMS
Description	B05,<basic_dst> 01 basic_dst: Distance tracking interval, unit meter. 02 Distance Tracking is independent from timing tracking.
Reply	B05,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B05,100 01 Set distance tracking to 100m.
Retrieve	C04,B05

B07 – Setting the Direction Change Upload

Source	GPRS/COM/SMS
Description	B07,<course> 01 course: direction change angle, unit degree, range 1--359, default 0. 02 When *course* is set to 0, direction change upload is disabled. 03 When driving direction change exceeds the setting value, tracker will upload a position data for supplement.
Reply	B07,<err_code>

	01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B07,30 01 Set direction change angle to 30°.
Retrieve	C04,B07

B08 – Setting Speeding Alarm

Source	GPRS/COM/SMS
Description	B08,<speeding>,<buz> 01 speeding: speed, unit km/h, range 0--300, default 0. 02 When *speeding* is set to 0, speeding alarm is disabled. 03 buz: 1—Enable buzzer when speeding; 0—Disable(default) 04 When *buz==1*, tracker controls buzzer via OUT2, till speed returns to normal
Reply	B08,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B08,90 01 Set speed limit to 90km/h; Disable buzzer
Retrieve	C04,B08

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

B12 – Output Control	
Source	GPRS/COM/SMS
Description	B12,<index>,<action>,<safe_speed> 01 index: out port selection, value 1, 2, 3… etc.. 02 action: Output control, 0--output low level, 1—output high level. 03 safe_speed: speed limit, unit km/h, range 1—300; when this parameter is set to 0, or this filed is empty, output control takes effect immediately; Other value, set the speed limit for output control. When the driving speed is lower than the speed limit, the output control takes effect.
Reply	B12,<err_code> 01 err_code: error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED –Processing failed.
Example	B12,1,1,20 01 Set OUT1 to output high level when speed less than 20km/h.
Retrieve	UNSUPPORT

B13 – Pulse Output Control	
Source	GPRS/COM/SMS
Description	B13,<index>,<on_time>,<off_time>,<pls_cnt> 01 index: out port specification, value 1, 2, 3… etc.. 02 on_time: Duration of high level, unit ms. 03 off_time: Duration of low level, unit ms.

	04 pls_cnt: Pulse number.
Reply	B13,<err_code> 01 err_code: error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED –Processing failed.
Example	B13,1,1000,1000,10 01 Set OUT1 to output 10 pulse, whose high level duration 1000ms, low level duration 1000ms.
Retrieve	UNSUPPORT

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 GPRS data uploading 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

B16 – Setting Initial Mileage and Initial Runtime

Source	GPRS/COM/SMS
Description	B16,<init_mile>,<init_runtime> 01 init_mile: initial mileage, unit meter, default 0m. 02 init_runtime: initial runtime, unit s, default 0s.
Reply	B16,<err_code> 01 err_code: error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED –Processing failed.
Example	B16 01 Set both initial mileage and runtime to 0
Retrieve	C04,B16 01 The retrieved value is current mileage and current runtime, not the setting ones.

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

B18 – Setting in-port Working Mode	
Source	GPRS/COM/SMS
Description	B18,<input>,<valid_mode> 01 input: in-port selection, 1--input1, 2--input2, etc.. 02 valid_mode: valid trigger mode, 0--low level valid, 1--high level valid.
Reply	B18,<err_code> 01 err_code: error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED –Processing failed.
Example	B18,3,1 01 Set IN3 to high level valid mode.
Retrieve	C04,B18,<input> 01 input: in-port selection, the same as *input* field in setting command.

B19 – Setting Circle geo-fence	
Source	GPRS/COM/SMS
Description	B19,<index>,<flag>,<radium>,<lat>,<lon> 01 index: fence index, value 1~8, i.e.: 8 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 radium: radium 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 *lat* and *lon* are empty, current latitude and longitude is used, while GPS valid signal is needed. 07 When *flag*, *radium*, *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	B19,1,3,200 01 Set the first circle geo-fence, centre point: current location, radium: 200m, output alarm both enter and exit fence.
Retrieve	C04,B19,<index> 01 index: fence index, value 1~8, the same as *index* field in setting command.

B21 – Setting Fatigue Driving

Source	GPRS/COM/SMS
Description	B21,<drowsy_time>,<rest_time> 01 drowsy_time: Fatigue driving time, unit s, default 14400s. 02 rest_time: Minimum rest time after fatigue driving, unit s, default 1200s. 03 When *drowsy_time* is set to 0, fatigue driving alarm is disabled. 04 The field *rest_time* can be empty, while the default value is used. 05 When *drowsy_time* and *rest_time* are empty, both values are set to default.
Reply	B21,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B21 01 Set fatigue driving time to the default value 14400s, and minimum rest time to the default value 1200s.
Retrieve	C04,B21

B22 – Setting Maximum Parking Time

Source	GPRS/COM/SMS
Description	B22,<time>

	01 time: Maximum parking time, unit s, default 0s, i.e. parking overtime alarm is disabled. 02 When parking time exceeds preset value, a parking overtime alarm triggered.
Reply	B22,<err_code> 01 err_code: error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED –Processing failed.
Example	B22,1200 01 Set maximum parking time to 1200s.
Retrieve	C04,B22

B23 – Setting Alarm Action

Source	GPRS/COM/SMS
Description	B23,<alm-code>,<GPRS><SMS><two-way-call><monitor-call><photo><AN-idx> 01 alm-code: Alarm type, refer to *Appendix –A*. 02 GPRS: Disable/enable GPRS uploading. 03 SMS: Disable/enable SMS to SOS number. 04 two-way-call: Disable/enable SOS number dialing under two-way conversation. 05 monitor-call: Disable/enable SOS number dialing under monitor mode. 06 photo: Disable/enable photographing. For A100, photographing is not supported. 07 AN-idx: Complicated action, value 1~6, which corresponds to *index* field in *B24* command; AN is composed of a serial command sets, performing user define operations; Refer to *B24* command for detail. 08 When both *two-way-call* and *monitor-call* are set, *monitor-call* is valid, while *two-way-call* ignored. 09 *two-way-call* or *monitor-call* is valid when SOS number set, refer to *B11* command for SOS number(s) setting.
Reply	B23,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B23,2,110102 01 Set action when SOS triggered: a Sending GPRS alarm data to platform. b Sending alarm SMS with C01 format to SOS number. c Dial SOS numbers under monitor mode. d Perform operations which is defined by *B24*
Retrieve	C04,B23,<alm-code> 01 alm-code: Alarm type, refer to *Appendix –A*. The same as *alm-code* field in setting command.

B24 – Setting Complicated Alarm Action	
Source	GPRS/COM/SMS
Description	B24,<AN-idx>,'#oper-1',<delay_t>,'#oper-2',…. 01 The command defines complicated alarm action, "AN" for short; AN is used associated with *B23* setting. When both "*AN-idx*" field in *B23* command, and AN detail in *B24* are set, operation can be performed then. 02 AN-idx: AN index, value 1~6, corresponds to 1~6 operation sets; It can be selected by *AN-idx* field in *B23* command. 03 #oper-[1,2…]: Operation instruction, composed of a serial command(s). Maximum length of 64 bytes. 04 delay_t: Delay time between adjoining operation, unit second. It means, tracker performs operations defined by *opera-1*, delay *delay_t* seconds, then perform *opera-2* 05 The writing rule of *B24*: a Single quotes in front of and behind *oper-x* are needed, which is used to define operation start b *oper-x* is composed of commands sets, it is written in "SMS Command Format". For example, '#B12,1,1' c *delay_t* is written in digital directly, there is no single quote in front or behind 06 The operation flow of AN action a Tracker detects alarm occurring. b Tracker checks whether *AN-idx* is selected in *B23*, and whether AN detail is set in *B24*. c When both *B23* and *B24* is set, tracker performs operation defined by *B24*.
Reply	B24,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B23,2,100003 B24,3,'#B12,1,1',3,'#B12,1,0' 01 Tracker will upload GPRS package, and perform AN3 when SOS detected. 02 When SOS detected, tracker uploads GPRS alarm package, set OUT1 high level, delay 3s, and then set OUT1 low level.
Retrieve	C04,B24,< AN-idx > 01 AN-idx: AN index, the same as *AN-idx* 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 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.

B27 – Setting Parameters of Harsh Acceleration Alarm

Source	GPRS/COM/SMS
Description	B27,<speed_var>,<time_lmt> 01 speed_var: maximum acceleration speed, unit km/h, default 0. 02 time_lmt: hard acceleration detection time, unit s, default 0. 03 Refer to *Appendix –A* for *alm-code* of harsh accelerate
Reply	B27,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B27,40,2 01 Set hard acceleration parameters: 40km/h speed variation within 2s.
Retrieve	C04,B27

B28 – Setting Parameters of Harsh Braking Alarm

Source	GPRS/COM/SMS
Description	B28,<speed_var>,<time_lmt> 01 speed_var: maximum decrease speed, unit km/h, default 0. 02 time_lmt: hard braking detection time, unit s, default 0. 03 When driving speed decrease beyond *speed_var*, tracker triggers hard braking alarm. 04 Refer to *Appendix –A* for *alm-code* of harsh brake
Reply	B28,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.

Example	Refer to example in *B27*
Retrieve	C04,B28

B29 – Setting Sensitivity of Motion Sensor

Source	GPRS/COM/SMS
Description	B29,<level> 01 level: sensitivity of motion sensor, value [0, 10]; the smaller value, the higher sensitivity
Reply	B29,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B29,5
Retrieve	C04,B29

B31 – Setting SOS Number Attribute

Source	GPRS/COM/SMS
Description	B31,<sos-num>,<two-way-call>,<monitor>,<pos-sms> 01 Set SOS number attribute, refer to *B11* command for SOS number setting. 02 sos-num: 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 attribute: two-way-call: tracker picks up incoming phone-call in two-way conversation mode. monitor: tracker 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* 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.

B33 – Setting Maximum Idle Time

Source	GPRS/COM/SMS
Description	B33,<idle_time> 01 idle_time: maximum idle time, unit: s, default 0s. This parameter should be greater than 120s. 02 idle definition: ACC ON, but no speed, which means engine running under idle mode. 03 When idle mode detected, tracker starts idle time counter, and triggers Idling Alarm (*alm_code*=35), if counter exceeds *idle_time.*
Reply	B33,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B33,600 01 Set maximum idle time to 600s
Retrieve	C04,B33

B34 – Setting Voltage Range for AD Port

Source	GPRS/COM/SMS
Description	B34,<index>,<min_volt>,<max_volt>,<filter-option> 01 index: AD port index, value 1, which corresponds to AD1 02 min_volt: AD port voltage when external input is 0%, unit V 03 max_volt： AD port voltage when external input is 100%, unit V 04 filter-option: filter option for AD sample data *filter-option*==0 (default): When external power exists, sample AD data and upload real-time; When external power disconnected, keeping the last sample value, and upload to server *filter-option*==2: upload AD sample data real-time, ignoring ACC and external power status 05 Default value for AD input

port	min_volt/V	max_volt/V	filter-option	Description
AD1	0	5	0	Get sample data according to external power status

Reply	B34,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B34,1,0,5.0 01 Setting voltage range of AD1 to [0,5]V, getting sample data when external power exist, keeping sample data when external power disconnected
Retrieve	C04,B34,<index>

B80 – Setting Fuel Theft/Filling Alarm

Source	GPRS/COM/SMS
Description	B80,<ad-idx>,<theft-percentage>,<filling -percentage>,<use-acc> 01 The command is used for AD fuel sensor, such as AS10; Besides, it is valid on regular tank only at present. 02 ad-idx: AD channel which connects to fuel sensor, value 1/2; If *ad-idx==0*, disable fuel theft/filling function. 03 theft-percentage: Fuel theft percentage, unit %, tracker will send alarm when the fuel level decrement exceeds the setting value. If *theft-percentage==0* or field empty, disable fuel theft alarm. 04 filling-percentage: Fuel filling percentage, unit %, tracker will send alarm when the fuel level increment exceeds the setting value. If *filling-percentage==0* or filed empty, disable fuel filling alarm. 05 use-acc: Whether tracker connects to ACC or not. To get better calculation result, it is suggested to connect IN2 to ACC. If *use-acc* field empty, by default, it is regarded that ACC connected.
Reply	B80,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B80,1,5 01 Enable fuel theft alarm calculated based on AD1; When fuel level decrement exceed 5%, tracker sends theft alarm 02 Disable fuel filling alarm 03 IN2 connects to ACC
Retrieve	C04,B80

B81 – Setting Fuel Level Alarm

Source	GPRS/COM/SMS

Description	B81,<ad-idx>,<low-percentage>,<high-percentage> 01 The command is used for AD fuel sensor, such as AS10; Besides, it is valid on regular tank only at present. 02 ad-idx: AD channel which connects to fuel sensor, value 1/2; If *ad-idx==0*, disable fuel level detection. 03 low-percentage: Percentage of low fuel level, unit %, tracker will send alarm when the fuel level is lower than the setting value. If *low-percentage==0* or field empty, disable low fuel level detection. 04 high-percentage: Percentage of high fuel level, unit %, tracker will send alarm when the fuel level is higher than the setting value. If *high-percentage==0* or filed empty, disable high fuel level detection.
Reply	B81,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B81,1,15,80 01 Enable low and high fuel level detection calculated based on AD1 02 When fuel level is lower than 15%, tracker sends alarm 03 When fuel level is higher than 80%, tracker sends alarm
Retrieve	C04,B81

B82 – Enable/Disable Fuel Consumption Statistics

Source	GPRS/COM/SMS
Description	B82,<ad-idx>,<use-acc>,<add-theft>,<clear> 01 The command is used for AD fuel sensor, such as AS10; Besides, it is valid on regular tank only at present. 02 ad-idx: AD channel which connects to fuel sensor, value 1/2; If *ad-idx==0*, disable fuel consumption statistics. 03 use-acc: Whether tracker connects to ACC or not. To get better calculation result, it is suggested to connect IN2 to ACC. If *use-acc* field empty, by default, it is regarded that ACC connected. 04 add-theft: 1-- The amount of oil reduced by theft is added to total fuel consumption (default); 0-- The amount of oil reduced by theft is excluded from total fuel consumption. 05 clear: 0—Keep current fuel consumption data unchanged; 1—Clear current consumption data, and calculated from 0 06 After fuel consumption statistics enabled, fuel consumption data is packed in *fuel_consume* field in GPRS protocol.
Reply	B82,<err_code> 01 err_code: procession error code. OK – Succeed.

	UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B82,1,1,1,1 01 Enable fuel consumption statistics calculated based on AD1; tracker connects to ACC via IN2; All amount, including fuel theft amount, will be statistics into total consumption; After commands sent, tracker clear current consumption data, and re-calculates from 0.
Retrieve	C04,B82 Reply: B82,<ad-idx>,<use-acc>,<add-theft>

B90 – Reset Tracker or Module

Source	GPRS/COM/SMS
Description	B90,< select > 01 select: option =1: Reset tracker. =2: Reset GPS module. =3: Reset GSM module.
Reply	B90,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B90,1 01 Reset tracker.
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

B96 – Enable/Disable Vibration Alarm

Source	GPRS/COM/SMS
Description	B96,<enable>,<option> 01 enable: 0~Disable vibration alarm(default); 1~enable vibration alarm 02 option: Detection option for vibration alarm *option*==1: Trigger alarm when vibration detected and ACC OFF(default) *option*==0: Trigger alarm when vibration detected 03 Using *B29* command to set sensitivity of motion sensor
Reply	B96,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B96,1 01 Enable vibration alarm
Retrieve	C04,B96

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

	<table><tr><td></td><td>or not</td></tr><tr><td>1</td><td>Mandatory OTA, tracker doesn't check <u>*file_name*</u></td></tr></table> 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 <u>*B01*</u> command 07 After <u>*B99*</u> command received, tracker matches <u>*file_name*</u> 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" - <u>*file_name*</u> doesn't match current firmware version "No ext-pwr, Please Connect in 15mins" – External power disconnect "The Same Version" – file_name has the same version to current firmware version "OK" – OTA start
Example	B99,100-V1.16.bin 01 Start OTA, tracker will connect to 47.88.17.17:21, using default FTP account for file download B99,100-V1.16.bin,1, 120.24.95.123,9208,klone,klone@@2017 01 Start OTA, tracker will connect to <u>*120.24.95.123:9208*</u>, and upgrade to "<u>*100-V1.16.bin*</u>" 02 The login name and password of FTP server is "<u>*klone*</u>" and "<u>*klone@@2017*</u>"
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 <u>*C01*</u> 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 <string_head>,yyyy-MM-dd hh:mm:ss, <spd>KM/h,<gprs_st>,<gps_fix>,EXPW:<PST> http://maps.google.com/maps?q=<Latitude>,<Longitude>&t=m a string_head: SMS head string, for normal position data, *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. c spd: current speed, unit km/h. d gprs_st: GPRS link status, value: "Connected" or "Disconnected". e gps_fix: GPS signal status, 'A'-fixed, 'V'-not fixed. f PST: Status of ext-power input, "ON" -- ext-power is connected, "OFF" -- ext-power is disconnected. g Latitude, Longitude: Latitude and longitude of last position point.
Example	C01
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,<extp_v>,<bat_v>,<bat_percentage> 01 extp_v: Voltage of ext-power, unit V. Charge supplier voltage for handheld tracker. 02 bat_v: Voltage of internal battery. 03 bat_percentage: Percentage of internal battery capacity.
Example	C03
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>;EXT:<ext_p>,BAT:<bat_v>;B03:<base_int> ,<accoff_int>,<ns_int>;<ACC ON/OFF>,<Moving/STOP> 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” / “UDP” 04 apn, apn_user, apn_pwd: APN setting in tracker 05 ext_p: Voltage of external power supply, unit V 06 bat_v: Voltage of internal battery, unit V 07 base_int, accoff_int, ns_int: GPRS uploading interval for normal situation, for ACC OFF, for parking status, which is the same as *B03* setting 08 ACC ON/OFF: Current ACC status, string, value “ACC ON” / “ACC OFF” 09 Moving/STOP: Current motion status, string, value “Moving” / “STOP”
Example	Command: C06 Reply: C06,861694033095389,47.88.35.165:10502,TCP;APN:CMNET,,;EXT:12.00V,BAT:4.17V;B03:100,0,0,ACC OFF,Stop
Retrieve	UNSUPPORT

C08 – Retrieving AD voltage	
Source	GPRS/COM/SMS
Description	C08,<rt-data> 01 The command is used to retrieve voltage on AD port.

	02 rt-data: 1(default)—Tracker reply real-time voltage; 0—Tracker does smooth filtration, and then replies 03 Different for *rt-data* *rt-data==1*: Voltage is related to sensor itself, when sensor signal is stable, sending C08 command for retrieving, and the result would be true *rt-data==0*: Voltage is related not only to sensor itself, but to working environment (e.g. fuel sensor voltage on running vehicle). Tracker needs at least 1min to sample enough data, does smooth filtration. There could have some error to true voltage. 04 The result of *C08* reply is actual voltage on AD port, which isn't effected by *B34* command setting
Reply	C08,<AD1>:<ad1-voltage> 01 ad1-voltage: Voltage on AD1, unit V
Example	Command: C08 Reply: C08,AD1:4.32
Retrieve	UNSUPPORT

Appendix A – Alarm code and alarm parameter

The following table describes the relationship of *alm-code* and *alm-para* in GPS Position/Alarm data:

alm-code	alm-para	Description	SMS Head String
1	NULL	Distance tracking	Distance
2	NULL	Input1 active	SOS
3	NULL	Input1 inactive	IN1 Inactive
4	NULL	Input2 active	IN2
5	NULL	Input2 inactive	IN2 Inactive
6	NULL	Input3 active	IN3
7	NULL	Input3 inactive	IN3 Inactive
14	Ext-power voltage, unit V	Ext-power low	Low Ext-Power
15	NULL	Ext-power lost	Ext-Power Cut
16	NULL	Ext-power re-connect	Ext-Power On
17	Battery voltage, unit V	Internal battery low	Low Battery
18	NULL	Speeding alarm	Speeding
21	NULL	Vibration Alarm	Vibration
20	NULL	GPS antenna cut	GPS Antenna Cut
23	NULL	Harsh accelerate	Harsh Accelerate
24	NULL	Harsh braking	Harsh Braking
27	NULL	Fatigue driving	Fatigue Driving
28	NULL	Fatigue relieve	Fatigue Relieve
29	NULL	Parking overtime	Parking Overtime
30	NULL	GSM Jamming	GSM Jamming
32	NULL	GPS jamming	GPS Jamming
33	Hexadecimal character: bit[7:4]: geo-fence type: 0 - Circle fence 1 - Polygon fence bit[3:0]: index of fence	Exit geo-fence	Exit Fence
34	The same as “Exit geo-fence”	Enter geo-fence	Enter Fence
35	NULL	Idling Alarm	Idling Alarm
44	NULL	Fuel Theft Alarm	Fuel Theft
45	NULL	Fuel Filling Alarm	Fuel Filling
46	NULL	Low Fuel Level Alarm	Fuel Level Low
47	NULL	High Fuel Level Alarm	Fuel Level High