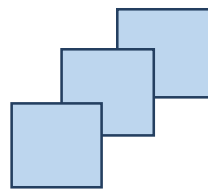



FIFOTRACK COMMAND LIST



Model: S20
Version: V1.5
www.fifotrack.com

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Document History

Version	Revision Date	Author	Detail
V1.5	Dec 12, 2018	Vito Hu	Add <u>bu</u> z field in <u>B08</u> command Modify <u>B23</u> command Add <u>B24</u> , <u>B25</u> , <u>29</u> , <u>31</u> , <u>B34</u> , <u>B96</u> , <u>C08</u> command
V1.4	Sep 16, 2018	Vito Hu	Add <u>B99</u> , <u>S09</u> Commands
V1.3	Oct 20, 2017	Vito Hu	Modify Appendix A
V1.2	Oct 10, 2017	Vito Hu	Modify B98 command Delete OTA command
V1.1	Sep 15, 2017	Vito Hu	Revision Version

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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	<p>B00,<svr_type>,<net_addr>,<net_port></p> <p>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.</p> <p>02 net_addr: server IP or domain.</p> <p>03 net_port: server port.</p>
Reply	<p>B00,<err_code></p> <p>01 err_code: procession error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	<p>B00,1, 47.88.35.165,10502</p> <p>01 Set main server: IP-47.88.35.165, port-10502.</p>
Retrieve	<p>C04,B00,<svr_type></p> <p>01 svr_type: server selection, the same as <u>svr_type</u> field in setting command.</p>

B01 – Setting GPRS APN Parameters	
Source	GPRS/COM/SMS
Description	<p>B01,<apn_name>,<apn_usr>,<apn_pwd></p> <p>01 apn_name: APN name.</p> <p>02 apn_usr: APN user name.</p> <p>03 apn_pwd: APN password.</p> <p>04 Leave <u>apn_usr</u>, <u>apn_pwd</u> field empty, if no APN username and APN password exist.</p> <p>05 Contact to local ISP for APN detail.</p>
Reply	<p>B01,<err_code></p> <p>01 err_code: procession error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	<p>B01,cmnet</p> <p>01 Set APN name to “cmnet”, APN login username and password empty.</p>
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 <u>accoff_tmr</u> priority, <u>parking_tmr</u> 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_tmr> 01 roam_tmr: roaming time interval, unit s, default 0s. 02 When both B03 and B04 are set, tracker uses <u>basic_tmr</u> and <u>roam_tmr</u> for data uploading under different network condition, <u>accoff_tmr</u> and <u>parking_tmr</u> are ignored.
Reply	B04,<err_code> 01 err_code: procession error code.

	<p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	<p>B04,3600</p> <p>01 Set timing tracking interval to 3600s while roaming.</p>
Retrieve	C04,B04

B05 – Setting Distance Tracking Interval

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

B07 – Setting the Direction Change Upload

Source	GPRS/COM/SMS
Description	<p>B07,<course></p> <p>01 course: direction change angle, unit degree, range 1--359, default 0.</p> <p>02 When <u>course</u> is set to 0, direction change upload is disabled.</p> <p>03 When driving direction change exceeds the setting value, tracker will upload a position data for supplement.</p>
Reply	<p>B07,<err_code></p> <p>01 err_code: procession error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	<p>B07,30</p> <p>01 Set direction change angle to 30°.</p>
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 <i>speeding</i> is set to 0, speeding alarm is disabled. 03 buz: 1—Enable buzzer when speeding; 0—Disable(default) 04 When <i>buz==1</i> , 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.

	<p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	<p>B11,15698210011,,15698210200</p> <p>01 Set sos_num1 to 15698210011, sos_num2 to empty, sos_num3 to 15698210200.</p>
Retrieve	C04,B11

B12 – Output Control

Source	GPRS/COM/SMS
Description	<p>B12,<index>,<action>,<safe_speed></p> <p>01 index: out port selection, value 1, 2, 3... etc..</p> <p>02 action: Output control, 0--output low level, 1--output high level.</p> <p>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.</p>
Reply	<p>B12,<err_code></p> <p>01 err_code: error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED –Processing failed.</p>
Example	<p>B12,1,1,20</p> <p>01 Set OUT1 to output high level when speed less than 20km/h.</p>
Retrieve	UNSUPPORT

B13 – Pulse Output Control

Source	GPRS/COM/SMS
Description	<p>B13,<index>,<on_time>,<off_time>,<pls_cnt></p> <p>01 index: out port specification, value 1, 2, 3... etc..</p> <p>02 on_time: Duration of high level, unit ms.</p> <p>03 off_time: Duration of low level, unit ms.</p> <p>04 pls_cnt: Pulse number.</p>
Reply	<p>B13,<err_code></p> <p>01 err_code: error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED –Processing failed.</p>
Example	<p>B13,1,1000,1000,10</p> <p>01 Set OUT1 to output 10 pulse, whose high level duration 1000ms, low level duration 1000ms.</p>

Retrieve	UNSUPPORT
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B14 – Setting SMS Time Zone

Source	GPRS/COM/SMS
Description	<p>B14,<tzone></p> <p>01 tzone: time zone, range [-12, 12].</p> <p>02 Default value of <i>tzone</i> is 0.</p> <p>03 When SMS time zone is set, all tracking/alarm SMS use <i>tzone</i> for date & time.</p> <p>04 GPRS data uploading uses UTC-0 time zone.</p>
Reply	<p>B14,<err_code></p> <p>01 err_code: procession error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	B14,-8
Retrieve	C04,B14

B15 – Setting Sleep Mode

Source	GPRS/COM/SMS
Description	<p>B15,<slp_mode>,<slp_wait_tmr></p> <p>01 slp_mode: sleep mode, 0—sleep is disabled, 1--normal sleep, 2--deep sleep.</p> <p>02 slp_wait_tmr: waiting time to sleep mode, unit s, default 300s.</p> <p>03 Normal sleep: turn off all the power except GSM module, terminal will be waked up by IO trigger, incoming phone-call or SMS.</p> <p>04 Deep sleep: turn off all the power supply, only wake up by IO trigger.</p>
Reply	<p>B15,<err_code></p> <p>01 err_code: error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED –Processing failed.</p>
Example	<p>B15,1</p> <p>01 Enable normal sleep mode, and waiting time to sleep mode is the default 300s.</p>
Retrieve	C04,B15

B16 – Setting Initial Mileage

Source	GPRS/COM/SMS
Description	<p>B16,<init_mile></p> <p>01 init_mile: initial mileage, unit meter, default 0m.</p>

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 to 0m
Retrieve	C04,B16 01 The retrieved value is current mileage, 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—IN1, 2—IN2, etc.. For S20, only IN1 is smart input, which can be set using the command 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	B18,1,1 01 Set IN1 to high level valid mode.
Retrieve	C04,B18,<input>

	01 input: in-port selection, the same as <u>input</u> field in setting command.
--	---

B19 – Setting Circle geo-fence

Source	GPRS/COM/SMS
Description	<p>B19,<index>,<flag>,<radius>,<lat>,<lon></p> <p>01 index: fence index, value 1~8, i.e.: 8 geo-fence can be set at most.</p> <p>02 flag: alarm flag</p> <p style="padding-left: 40px;">flag=1: Trigger alarm when exit fence.</p> <p style="padding-left: 40px;">flag=2: Trigger alarm when enter fence.</p> <p style="padding-left: 40px;">flag=3: Trigger alarm both enter and exit fence.</p> <p>03 radius: radius of circle geo-fence, unit meter.</p> <p>04 lat: latitude of center point, decimal string format.</p> <p>05 lon: longitude of center point, decimal string format.</p> <p>06 When <u>lat</u> and <u>lon</u> are empty, current latitude and longitude is used, while GPS valid signal is needed.</p> <p>07 When <u>flag</u>, <u>radius</u>, <u>lat</u>, <u>lon</u> are empty, delete geo-fence specified by <u>index</u>; When <u>index</u>=0 or empty, delete all.</p>
Reply	<p>B19,<err_code></p> <p>01 err_code: procession error code.</p> <p style="padding-left: 40px;">OK – Succeed.</p> <p style="padding-left: 40px;">UNSUPPORT – Command not supported.</p> <p style="padding-left: 40px;">FAILED – Procession failed.</p>
Example	<p>B19,1,3,200</p> <p>01 Set the first circle geo-fence, centre point: current location, radius: 200m, output alarm both enter and exit fence.</p>
Retrieve	<p>C04,B19,<index></p> <p>01 index: fence index, value 1~8, the same as <u>index</u> field in setting command.</p>

B21 – Setting Fatigue Driving

Source	GPRS/COM/SMS
Description	<p>B21,<drowsy_time>,<rest_time></p> <p>01 drowsy_time: Fatigue driving time, unit s, default 14400s.</p> <p>02 rest_time: Minimum rest time after fatigue driving, unit s, default 1200s.</p> <p>03 When <u>drowsy_time</u> is set to 0, fatigue driving alarm is disabled.</p> <p>04 The field <u>rest_time</u> can be empty, while the default value is used.</p> <p>05 When <u>drowsy_time</u> and <u>rest_time</u> are empty, both values are set to default.</p>
Reply	<p>B21,<err_code></p> <p>01 err_code: procession error code.</p> <p style="padding-left: 40px;">OK – Succeed.</p> <p style="padding-left: 40px;">UNSUPPORT – Command not supported.</p>

	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, set to 0 for actual useage. 05 monitor-call: Disable/enable SOS number dialing under monitor mode. 06 photo: Disable/enable photographing, set to 0 for actual useage. 07 AN-idx: Complicated action, value 1~6, which corresponds to <u>AN-idx</u> field in B24 command; AN is composed of a serial command sets, performing user define operations; Refer to <u>B24</u> command for detail. 08 When both <u>two-way-call</u> and <u>monitor-call</u> are set, <u>monitor-call</u> is valid, while <u>two-way-call</u> ignored. 09 <u>two-way-call</u> or <u>monitor-call</u> is valid when SOS number set, refer to <u>B11</u> command for SOS number(s) setting.
Reply	B23,<err_code> 01 err_code: procession error code.

	<p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	<p>B23,2,110102</p> <p>01 Set action when SOS triggered:</p> <p>a Sending GPRS alarm data to platform.</p> <p>b Sending alarm SMS with <u>C01</u> format to SOS number.</p> <p>c Dial SOS numbers under monitor mode.</p> <p>d Perform operations which is defined by <u>B24</u></p>
Retrieve	<p>C04,B23,<alm-code></p> <p>01 alm-code: Alarm type, refer to Appendix–A. The same as <u>alm-code</u> field in setting command.</p>

B24 – Setting Complicated Alarm Action

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

	<p>B24,3,'#B12,1,1',3,'#B12,1,0'</p> <p>01 Tracker will upload GPRS package, and perform AN3 when SOS detected.</p> <p>02 When SOS detected, tracker uploads GPRS alarm package, set OUTPUT1 high level, delay 3s, and then set OUTPUT1 low level.</p>
Retrieve	<p>C04,B24,<AN-idx ></p> <p>01 AN-idx: AN index, the same as <u>AN-idx</u> field in setting command</p>

B25 – Setting SMS Timing Tracking

Source	GPRS/COM/SMS
Description	<p>B25,<sms_interval>,<sos_list></p> <p>01 sms_interval: SMS Tracking interval, unit: s, default: 0s; when <u>sms_interval==0</u>, disable SMS timing tracking</p> <p>02 The format of timing SMS is the same as <u>C01</u> reply</p> <p>03 sos_list: SOS number list, value 1, 2, 3 or the combination of them. Tracking SMS will be sent to the SOS number(s) defined by <u>sos_list</u>; When <u>sos_list</u> is empty, tracking SMS will be sent to #1 number by default;</p> <p>04 After setting SMS timing tracking, it is suggested to set SOS number(s) using <u>B11</u> command, to set time-zone using <u>B14</u> command.</p>
Reply	<p>B25,<err_code></p> <p>01 err_code: error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED –Processing failed.</p>
Example	<p>B25,120,23</p> <p>01 Enable SMS timing tracking, and set interval to 120s, tracking SMS will be sent to #2 and #3 SOS numbers</p>
Retrieve	C04,B25

B26 – Setting Alarm SMS Head String

Source	GPRS/COM/SMS
Description	<p>B26,<alm-code>,<sms_string></p> <p>01 alm-code: Alarm type, refer to Appendix –A.</p> <p>02 sms_string: SMS head string, 16 bytes length at most.</p> <p>03 Refer to Appendix-A for default string.</p>
Reply	<p>B26,<err_code></p> <p>01 err_code: error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED –Processing failed.</p>
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 <i>alm-code</i> 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 <i>alm-code</i> 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 <i>speed var</i> , tracker triggers hard braking alarm. 04 Refer to Appendix –A for <i>alm-code</i> 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 <u>B11</u> command for SOS number setting. 02 sos-num: SOS index, value 1, 2, 3, which corresponds to SOS number set by <u>B11</u> 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 <u>C01</u> command for SMS format. 07 When both <u>two-way-call</u> and <u>monitor</u> are set, <u>monitor</u> is valid, i.e.: tracker picks up phone-call in monitor mode. 08 When the command string has only <u>sos-num</u> field, default attribute is set to corresponding SOS number. 09 Default attribute of SOS number: <u>two-way-call</u> and <u>pos-sms</u> .
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 <u>sos-num</u> field in setting command.

B33 – Setting Maximum Idle Time

Source	GPRS/COM/SMS
Description	<p>B33,<idle_time></p> <p>01 idle_time: maximum idle time, unit: s, default 0s. This parameter should be greater than 300s.</p> <p>02 idle definition: ACC ON, but no speed, which means engine running under idle mode.</p> <p>03 When idle mode detected, tracker starts idle time counter, and triggers <u>Idling Alarm</u> (<i>alm_code=35</i>), if counter exceeds <i>idle time</i>.</p>
Reply	<p>B33,<err_code></p> <p>01 err_code: procession error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	<p>B33,600</p> <p>01 Set maximum idle time to 600s</p>
Retrieve	C04,B33

B34 – Setting Voltage Range for AD Port

Source	GPRS/COM/SMS										
Description	<p>B34,<index>,<min_volt>,<max_volt>,<filter-option></p> <p>01 index: AD port index, value 1, which corresponds to AD1</p> <p>02 min_volt: AD port voltage when external input is 0%, unit V</p> <p>03 max_volt: AD port voltage when external input is 100%, unit V</p> <p>04 filter-option: filter option for AD sample data</p> <p><i>filter-option==0</i> (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</p> <p><i>filter-option==1</i>: When ACC ON, sample AD data and upload real-time; When ACC OFF (maybe external power exists), keeping the last sample value, and upload to server</p> <p><i>filter-option==2</i>: upload AD sample data real-time, ignoring ACC and external power status</p> <p>05 Default value for AD input</p> <table border="1"> <thead> <tr> <th>port</th> <th>min_volt/V</th> <th>max_volt/V</th> <th>filter-option</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>AD1</td> <td>0</td> <td>5</td> <td>0</td> <td>Get sample data according to external power status</td> </tr> </tbody> </table>	port	min_volt/V	max_volt/V	filter-option	Description	AD1	0	5	0	Get sample data according to external power status
port	min_volt/V	max_volt/V	filter-option	Description							
AD1	0	5	0	Get sample data according to external power status							
Reply	<p>B34,<err_code></p> <p>01 err_code: procession error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>										

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

B81 – Setting Fuel Level Alarm

Source	GPRS/COM/SMS
Description	<p>B81,<ad-idx>,<low-percentage>,<high-percentage></p> <p>01 The command is used for AD fuel sensor, such as AS10; Besides, it is valid on regular tank only at present.</p> <p>02 ad-idx: AD channel which connects to fuel sensor, value 1/2; If <u>ad-idx==0</u>, disable fuel level detection.</p>

	<p>03 low-percentage: Percentage of low fuel level, unit %, tracker will send alarm when the fuel level is lower than the setting value. If <u>low-percentage==0</u> or field empty, disable low fuel level detection.</p> <p>04 high-percentage: Percentage of high fuel level, unit %, tracker will send alarm when the fuel level is higher than the setting value. If <u>high-percentage==0</u> or field empty, disable high fuel level detection.</p>
Reply	<p>B81,<err_code></p> <p>01 err_code: procession error code.</p> <p>OK – Succeed.</p> <p>UNSUPPORT – Command not supported.</p> <p>FAILED – Procession failed.</p>
Example	<p>B81,1,15,80</p> <p>01 Enable low and high fuel level detection calculated based on AD1</p> <p>02 When fuel level is lower than 15%, tracker sends alarm</p> <p>03 When fuel level is higher than 80%, tracker sends alarm</p>
Retrieve	C04,B81

B82 – Enable/Disable Fuel Consumption Statistics

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

	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, <i>led-on</i> =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 <u>option</u> ==0: Trigger alarm when vibration detected and ACC OFF(default) <u>option</u> ==1: Trigger alarm when vibration detected 03 Using <u>B29</u> 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

B98 – Setting Lower Power Parameters

Source	GPRS/COM/SMS
Description	B98,<low_pwr_v>,<low_recovery_v>,<control> 01 The command is used to set the parameters of low external power alarm 02 low_pwr_v: Low power alarm voltage, unit V; When external power input is lower than <u>low_pwr_v</u> , tracker sends “Low Ext-Power” alarm, and cuts off power supply if <u>control</u> ==1, in order to protect auto battery. 03 low_recovery_v: External power recovery voltage, unit V; When external power input is higher than <u>low_recovery_v</u> , it is regards that external power is normal; tracker clears “Low Ext-Power” flag, and restore external power supply if <u>control</u> ==1. 04 control: 1—cut off external power supply when external input is lower than <u>low_pwr_v</u> , and restore supply when external input higher than <u>low_recovery_v</u> , it is used to protect auto battery; 0(default)—Disable auto battery protection. 05 It is suggested to set parameters which (<u>low_recovery_v</u> – <u>low_pwr_v</u>) >= 0.5V

	<p>06 Default settings for 12V or 24V auto battery, as below table:</p> <table border="1"> <thead> <tr> <th></th> <th>low_pwr_v</th> <th>low_recovery_v</th> </tr> </thead> <tbody> <tr> <td>12V Auto Battery</td> <td>11.5V</td> <td>12.5V</td> </tr> <tr> <td>24V Auto Battery</td> <td>23.5V</td> <td>24.5V</td> </tr> </tbody> </table>		low_pwr_v	low_recovery_v	12V Auto Battery	11.5V	12.5V	24V Auto Battery	23.5V	24.5V
	low_pwr_v	low_recovery_v								
12V Auto Battery	11.5V	12.5V								
24V Auto Battery	23.5V	24.5V								
Reply	<p>B98,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.</p>									
Example	<p>B98,11.5,12.5 01 Setting low external threshold to 11.5V, and recovery voltage to 12.5V, auto battery protection is disabled, tracker is always powered from external supply.</p> <p>B98,0,0,1 01 Setting adaptive low external parameters, tracker judges voltage automatically, and cuts off when low external input.</p>									
Retrieve	C04,B98									

B99 – OTA using FTP Server

Source	GPRS/COM/SMS						
Description	<p>B99,<file_name>,<option>,<ftp_address>,<ftp_port>,<ftp_loginid>,<ftp_loginpwd>,<apn>,<apn_name>,<apn_pwd></p> <p>01 file_name: file name for OTA, should be “xxx.bin” format 02 option: option for OTA, when the field empty, using default setting</p> <table border="1"> <thead> <tr> <th>option</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0(default)</td> <td>Normal OTA, tracker check whether <u>file_name</u> match current version or not</td> </tr> <tr> <td>1</td> <td>Mandatory OTA, tracker doesn't check <u>file_name</u></td> </tr> </tbody> </table> <p>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/photographing. 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</p>	option	Description	0(default)	Normal OTA, tracker check whether <u>file_name</u> match current version or not	1	Mandatory OTA, tracker doesn't check <u>file_name</u>
option	Description						
0(default)	Normal OTA, tracker check whether <u>file_name</u> match current version or not						
1	Mandatory OTA, tracker doesn't check <u>file_name</u>						

Reply	<p>B99,<err_str> 01 err_str: Error code, string format “Invalid BIN file” - <i>file_name</i> 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</p>
Example	<p>B99,S20-V1.09.bin 01 Start OTA, tracker will connect to 47.88.17.17:21, using default FTP account for file download</p> <p>B99,S20-V1.09.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>“S20-V1.09.bin”</u> 02 The login name and password of FTP server is <u>“klone”</u> and <u>“klone@@2017”</u></p>
Retrieve	

C01 – Retrieve Position Information

Source	COM/SMS/GPRS
Description	<p>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.</p>
Reply	<p>When command is sent via GPRS, the replied data is normal position package.</p> <p>When command is sent via SMS/COM <string_head>,yyyy-MM-dd hh:mm:ss, <spd>KM/h,<gprs_st>,<gps_fix>,EXPW:<PST> <a href="http://maps.google.com/maps?f=q&hl=en&q=loc:<Latitude>,<Longitude>">http://maps.google.com/maps?f=q&hl=en&q=loc:<Latitude>,<Longitude> a string_head: SMS head string, for normal position data, <u>string_head</u> 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.</p>
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	<p>C06</p> <p>01 Retrieve basic information of tracker in batch</p> <p>02 The command is commonly used for GPRS linkage lost debug</p>
Reply	<p>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></p> <p>01 GID: Tracker ID for GPRS data, default IMEI</p> <p>02 ip, port: Server setting in tracker</p> <p>03 TCP/UDP: Transport protocol setting, string, value “TCP” / “UDP”</p> <p>04 apn, apn_user, apn_pwd: APN setting in tracker</p> <p>05 ext_p: Voltage of external power supply, unit V</p> <p>06 bat_v: Voltage of internal battery, unit V</p> <p>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</p> <p>08 ACC ON/OFF: Current ACC status, string, value “ACC ON” / “ACC OFF”</p> <p>09 Moving/STOP: Current motion status, string, value “Moving” / “STOP”</p>
Example	<p>Command: C06</p> <p>Reply:</p> <p>C06,861694033095389,47.88.35.165:10502,TCP;APN:CMNET,,;EXT:12.00V,BAT:4.17V;B03:100,0,0,ACC OFF,Stop</p>
Retrieve	UNSUPPORT

C08 – Retrieving AD voltage

Source	GPRS/COM/SMS
Description	<p>C08,<rt-data></p> <p>01 The command is used to retrieve voltage on AD port.</p> <p>02 rt-data: 1(default)—Tracker reply real-time voltage; 0—Tracker does smooth filtration, and then replies</p> <p>03 Different for <u>rt-data</u></p> <p><u>rt-data==1</u>: Voltage is related to sensor itself, when sensor signal is stable, sending C08 command for retrieving, and the result would be true</p> <p><u>rt-data==0</u>: 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.</p> <p>04 The result of <u>C08</u> reply is actual voltage on AD port, which isn't effected by <u>B34</u> command setting</p>
Reply	<p>C08,<AD1>:<ad1-voltage></p> <p>01 ad1-voltage: Voltage on AD1, unit V</p>
Example	<p>Command: C08</p> <p>Reply: C08,AD1:4.32</p>
Retrieve	UNSUPPORT

S09 – Setting GPRS Heartbeat Interval

Source	GPRS/COM/SMS
Description	<p>S09,<acc-on-interval>,<acc-off-interval></p> <p>01 Heartbeat package is independent from normal GPRS position one</p> <p>02 acc-on-interval, acc-off-interval: Heartbeat interval for ACC ON and ACC OFF, unit: s; default <i>acc-on-interval</i>==0, <i>acc-off-interval</i>==0, which means heartbeat disabled</p> <p>03 When <i>acc-on-interval</i> or <i>acc-off-interval</i> is set to 0, heartbeat disabled for corresponding ACC status</p> <p>03 Heartbeat data will not be saved to blind buffer; When new heartbeat package generated, old and unsent one will be discarded</p>
Reply	<p>S09,<err_code></p> <p>01 err_code: procession error code.</p> <p style="padding-left: 40px;">OK – Succeed.</p> <p style="padding-left: 40px;">UNSUPPORT – Command not supported.</p> <p style="padding-left: 40px;">FAILED – Procession failed.</p>
Example	<p>S09,180,300</p> <p>01 Setting heartbeat interval to 180s for ACC ON, and 300s for ACC OFF</p> <p>S09,0,300</p> <p>01 Setting heartbeat interval to 300s for ACC OFF, and disable heartbeat for ACC ON</p> <p>S09</p> <p>01 Disable heartbeat for both ACC ON and ACC OFF</p>
Retrieve	C04,S09

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
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
23	NULL	Harsh accelerate	Harsh Accelerate
24	NULL	Harsh braking	Harsh Braking
25	NULL	Enter sleep	Enter Sleep
26	NULL	Exit sleep	Wake Up
27	NULL	Fatigue driving	Fatigue Driving
28	NULL	Fatigue relieve	Fatigue Relieve
29	NULL	Parking overtime	Parking Overtime
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