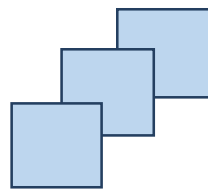


FIFOTRACK COMMAND LIST




Model: Q1

Version: V1.1

www.fifotrack.com



Copyright and Disclaimer

- ⦿ All copyrights belong to Shenzhen fifotrack Solution Co., Ltd. You are not allowed to revise, copy or spread this file in any form without consent of fifotrack.
- ⦿  is trademark of fifotrack, protected by law.
- ⦿ Please read this user guide carefully before installation to avoid any possible personal injury or property loss.



Document History

Version	Revision Date	Author	Detail
V1.1	March 17, 2016	Cici Wu	Revision Version

Contents

Document History	3
1 GPRS Command Format	6
2 SMS Command Format.....	7
3 Serial port (COM) Command Format	8
4 Command Writing Specification	9
5 Command List	10
B00 – Setting GPRS Parameters.....	10
B01 – Setting GPRS APN Parameters	10
B02 – Setting GPRS Link Protocol	11
B03 – Setting Tracking Time Interval	11
B04 – Setting Roaming Tracking Time Interval	11
B05 – Setting Distance Tracking Interval	12
B07 – Setting the Direction Change Upload	12
B08 – Setting Speeding Alarm	13
B10 – Setting SMS Password	13
B11 – Setting SOS Number	13
B14 – Setting SMS Time Zone	14
B15 – Setting Sleep Mode	14
B17 – Clear Blind Data	15
B19 – Setting Gircle geo-fence	15
B21 – Setting Fatigue Driving	16
B23 – Setting Alarm Action.....	16
B27 – Setting Parameters of Harsh Acceleration Alarm	17
B28 – Setting Parameters of Harsh Braking Alarm	17
B31 – Setting SOS Number Attribute.....	18
B35 – Enable/Disable Free Fall Alarm.....	18
B36 – Setting Format of Position SMS	19
B90 – Reset Tracker or Module.....	19
B91 – Setting Parameters to Default	19
B94 – Turn on/off LED Display	20
C01 – Retrieve Position Information.....	20



C02 – Retrieve Firmware/Hardware Version, SN, IMEI	21
C03 – Retrieve Supply Power Status.....	21
C04 – Retrieve Parameter Setting	22
D01 – Start Firmware OTA	22
D02 – Retrieve OTA Data	22
D03 – Abort OTA.....	23
D04 – Notification of OTA Result	23
Appendix A - Alarm code and alarm parameter	24
Appendix B – Structure of OTA bin file	25

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 Q1 doesnot support ACC, <u>accoff_tmr</u> is ignored in actual use.
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> 01 speeding: speed, unit km/h, range 0--300, default 0. 02 When parameter is set to 0, speeding alarm is disabled.
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.
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

B14 – Setting SMS Time Zone

Source	GPRS/COM/SMS
Description	B14,<tzone> 01 tzone: time zone, range [-12, 12]. 02 Default value of <u>tzone</u> is 0. 03 When SMS time zone is set, all tracking/alarm SMS use <u>tzone</u> 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

B15 – Setting Sleep Mode

Source	GPRS/COM/SMS
Description	B15,<slp_mode> 01 slp_mode: sleep mode, 2--deep sleep, other--normal mode 02 Normal sleep: turn off all the power except GSM module, tracker will be waked up by IO trigger, moving, incoming phone-call or SMS. 03 Deep sleep: turn off all the power supply, can be waked up by IO or moving only. 04 To use deep sleep when <u>slp_mode==2</u> , it is need to set uploading interval longer than 3600s under some working mode, using B03 command. For example, B03,30,,86400 – In the command, uploading interval is 86400s in static/parking mode, tracker will enter deep sleep when entering static/parking status. It can achieve longer working time. 05 When uploading interval under current working mode is shorter than 3600s, tracker will enter normal sleep even if <u>slp_mode==2</u>
Reply	B15,<err_code> 01 err_code: error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED –Processing failed.
Example	B15,2

	01 Enable deep sleep mode
Retrieve	C04,B15

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 Gircle geo-fence

Source	GPRS/COM/SMS
Description	B19,<index>,<flag>,<radius>,<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 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 <u>lat</u> and <u>lon</u> are empty, current latitude and longitude is used, while GPS valid signal is needed. 07 When <u>flag</u> , <u>radius</u> , <u>lat</u> , <u>lon</u> are empty, delete goe-fence specified by <u>index</u> ; When <u>index</u> =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, radius: 200m, output alarm both enter and exit fence.
Retrieve	C04,B19,<index> 01 index: fence index, value 1~8, the same as <i>index</i> 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 <i>drowsy time</i> is set to 0, fatigue driving alarm is disabled. 04 The field <i>rest time</i> can be empty, while the default value is used. 05 When <i>drowsy time</i> and <i>rest time</i> 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

B23 – Setting Alarm Action

Source	GPRS/COM/SMS
Description	B23,<alm-code>,<GPRS><SMS><two-way-call><monitor-call> 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 When both <i>two-way-call</i> and <i>monitor-call</i> are set, <i>monitor-call</i> is valid, while <i>two-way-call</i> ignored. 09 <i>two-way-call</i> or <i>monitor-call</i> is valid when SOS number set. 10 Q1 doesn't support two way conversation, <i>two-way-call</i> is ignored
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 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.
Retrieve	C04,B23,<alm-code> 01 alm-code: Alarm type, refer to Appendix –A. The same as <u>alm-code</u> 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 <u>alm-code</u> 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 <u>speed var</u> , tracker triggers hard braking alarm. 04 Refer to Appendix –A for <u>alm-code</u> 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

B31 – Setting SOS Number Attribute	
Source	GPRS/COM/SMS
Description	<p>B31,<sos-num>,<two-way-call>,<monitor>,<pos-sms></p> <p>01 Set SOS number attribute, refer to B11 command for SOS number setting.</p> <p>02 sos-num: SOS index, value 1, 2, 3, which corresponds to SOS number set by B11 command.</p> <p>03 two-way-call: attribute of two-way conversation.</p> <p>04 monitor: attribute of monitor-mode conversation.</p> <p>05 pos-sms: attribute of position SMS.</p> <p>06 Description of attribute:</p> <p style="padding-left: 40px;">two-way-call: tracker picks up incoming phone-call in two-way conversation mode.</p> <p style="padding-left: 40px;">monitor: tracker picks up incoming phone-call in monitor mode.</p> <p style="padding-left: 40px;">pos-sms: Tracker sends position SMS after incoming phone-call ends. Refer to C01 command for SMS format.</p> <p>07 When both <u>two-way-call</u> and <u>monitor</u> are set, monitor is valid, i.e.: tracker picks up phone-call in monitor mode.</p> <p>08 When the command string has only <u>sos-num</u> field, default attribute is set to corresponding SOS number.</p> <p>09 Default attribute of SOS number: <u>two-way-call</u> and <u>pos-sms</u>.</p>
Reply	<p>B31,<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>B31,1,1,1,1</p> <p>01 Set attribute of the first SOS number: tracker automatically picks up incoming phone-call under monitor mode, reply a position SMS.</p>
Retrieve	<p>C04,B31,<sos-num></p> <p>01 sos-num: SOS index, value 1, 2, 3. The same as <u>sos-num</u> field in setting command.</p>

B35 – Enable/Disable Free Fall Alarm	
Source	GPRS/COM/SMS
Description	<p>B35,<enable></p> <p>01 enable: 0~Disable free fall alarm; 1~Enale free fall alarm.</p> <p>02 Default, enable=1.</p> <p>03 The code of free fall alarm is 36.</p>
Reply	<p>B35,<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	B35,0 01 Disable free fall alarm
Retrieve	C04,B35

B36 – Setting Format of Position SMS

Source	GPRS/COM/SMS
Description	B36,<format> 01 format: The format of position SMS, 0~SMS with Google map link; 1~TEXT SMS 02 Refer to C01 command for detail 02 Default, <i>format=0</i>
Reply	B36,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B36,0 01 Setting position SMS format to “Google map link SMS”.
Retrieve	C04,B36

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

C01 – Retrieve Position Information

Source	COM/SMS/GPRS
Description	C01,<format> 01 After command is set, tracker sends a position message. 02 When alarm detected, tracker send alarm SMS with C01 format automatically, the format of SMS can be selected by using B36 command. 03 When command is sent via GPRS, tracker replies normal position data. 04 format: The format specification of SMS/COM reply, refer to the “Reply” section below.
Reply	When command is sent via GPRS, the replied data is normal position package. When command is sent via SMS/COM format==0: C01,<string_head>,yyyy-MM-dd hh:mm:ss,<spd>,<gps_fix>,<bat%>, http://maps.google.com/maps?f=q&hl=en&q=loc:<Latitude>,<Lontitude>

	<p>format==1:</p> <p>C01, <string_head>,yyyy-MM-dd hh:mm:ss,<spd>,<gps_fix>,<bat>%,Latitude,Lontitude</p> <p>01 string_head: SMS head string, for normal position data, string_head is empty, for alarm data, refer to Appendix-A for default string.</p> <p>02 yyyy-MM-dd hh:mm:ss: current date & time, which is calculated based on B14 command setting.</p> <p>03 spd: current speed, unit km/h.</p> <p>04 gps_fix: GPS signal status, 'A'-fixed, 'V'-not fixed.</p> <p>05 bat: Percentage of internal battery capacity.</p> <p>06 Latitude, Longitude: Latitude and longitude of the newest position point.</p>
Example	C01
Retrieve	UNSUPPORT

C02 – Retrieve Firmware/Hardware Version, SN, IMEI

Source	GPRS/COM/SMS
Description	C02
Reply	<p>Uploading data format:</p> <p>C02,<IMEI>,<SN>,<fw_ver>,<hw_ver></p> <p>01 IMEI: IMEI of tracker.</p> <p>02 SN: Serial number of tracker.</p> <p>03 fw_ver: Firmware version.</p> <p>04 hw_ver: Hardware version.</p>
Example	C02
Retrieve	UNSUPPORT

C03 – Retrieve Supply Power Status

Source	GPRS/COM/SMS
Description	C03
Reply	<p>Uploading data format:</p> <p>C03,<extp_v>,<bat_v>,<bat_percentage></p> <p>01 extp_v: Voltage of ext-power, unit V. Charge supplier voltage for handheld tracker.</p> <p>02 bat_v: Voltage of internal battery.</p> <p>03 bat_percentage: Percentage of internal battery capacity.</p>
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

D01 – Start Firmware OTA

Source	GPRS
Description	D01,<bin_file>,<data_len>,<CRC> 01 bin_file: OTA file, which contains version information. 02 data_len: OTA data length, decimal string format, the value of <u>data len</u> is (file length of <u>bin file</u> - 64). 03 CRC: CCITT CRC of OTA data, hexadecimal string format. The CRC filed is stored in BYTE[32:35] of <u>bin file</u> . 04 When D01 command is received, tracker saves <u>data len</u> and <u>CRC</u> in flash, if OTA is needed. 05 After OTA starts, tracker starts 40mins count down.
Reply	Tracker judges whether OTA is needed after D01 received, and replies different data: When OTA is needed, tracker uploads D02 command to fetch OTA data. When OTA is not needed or D01 command invalid: B94,< FAILED >
Example	
Retrieve	UNSUPPORT

D02 – Retrieve OTA Data

Source	GPRS
Description	D02,<bin_file>,<pack_no>,<pack_len> 01 bin_file: OTA file, the same as <u>bin file</u> field in D01 command. 02 pack_no: package index of OTA data, decimal string format. 03 pack_len: Package length of OTA data, decimal string format. The value of <u>pack len</u> should be fixed for an OTA procession. The suggestion value of <u>pack-len</u> is 512 or 1024. 04 When D02 command is received, the platform reads OTA data from <u>bin file</u> , at



	offset= $64+pack_no*pack_len$, length $pack_len$, and sends to tracker. 05 When OTA data is not received, tracker will re-send D02 command to fetch OTA data every 10s.
Reply	Reply data format from platform: D02,<pack_no>,<pack_len>,<bin_data> 01 pack_no: package index of OTA data, decimal string format, the same as <u>pack_no</u> filed in uplink package. 02 pack_len: Length of <u>bin_data</u> , decimal string format. 03 bin_data: OTA data content, hexadecimal format.
Example	
Retrieve	UNSUPPORT

D03 – Abort OTA

Source	GPRS
Description	D03,<option> 01 option: String format, description of aborting reason, the field can be empty.
Reply	D03,OK
Example	
Retrieve	UNSUPPORT

D04 – Notification of OTA Result

Source	GPRS
Description	D04,<result>,[FW],[HW] 01 result: result of OTA, decimal string format. 1 – OTA succeed 0 – OTA failed 02 FW: Current firmware version, which can be empty. 03 HW: Current hardware version, which can be empty.
Reply	D04,OK
Example	
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
1	NULL	Distance interval tracking
2	NULL	Input1 active
3	NULL	Input1 inactive
17	Battery voltage, unit V	Internal battery low
18	NULL	Speeding alarm
23	NULL	Harsh accelerate
24	NULL	Harsh braking
27	NULL	Fatigue driving
28	NULL	Fatigue relieve
29	NULL	Parking overtime
33	Hexadecimal character: bit[7:4]: geo-fence type: 0 - Cycle fence 1 - Polygon fence bit[3:0]: index of fence	Exit geo-fence
34	The same as Leave GEO-Fence	Enter geo-fence

Appendix B – Structure of OTA bin file

Byte index	Size/bytes	Description
Byte[0 --15]	16	File flag, fix as "FIFOTrack.Co.", invalid file if flag error.
Byte 16 – 31	16	Tracker model, such as Q1.
Byte 32 – 47	16	The first 4 bytes: CCITT CRC of OTA data; The rest data is set to 0. Byte[32] -- CRC[31:24]. Byte[33] --CRC[23:16]. Byte[34] --CRC[15:8]. Byte[35] --CRC[7:0].
Byte 48 -- 63	16	Reserved, set to 0.
Byte 64--	N	OTA data, which is sent to tracker when OTA starts; CCITTCRC is calculated within this field.