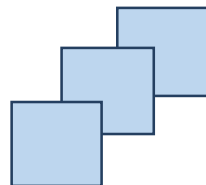


FIFOTRACK GPRS PROTOCOL/ COMMAND LIST




Model: A500T

Version: V1.14

www.fifotrack.com



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Document History

Version	Revision Date	Author	Detail
V1.1	Sep 20, 2016	Vito Hu	Initial Version
V1.2	May 31, 2017	Vito Hu	Add battery formula (bat, ext) on page 12; Modify B08 command description, use reader's internal buzzer; Add notes on F01 command, use default settings.
V1.3	July 5, 2017	Vito Hu	Add B20, C06 command; Add satellite number field in GPRS protocol
V1.4	Mar 8, 2018	Vito Hu	Add <u>CSQ</u> field in A01 position data package
V1.5	June 22, 2018	Vito Hu	Add <u>B99</u> command for OTA
V1.6	Dec 1, 2018	Vito Hu	Delete <u>D01</u> , <u>D02</u> , <u>D03</u> , <u>D04</u> command Delete <u>Appendix B</u>
V1.7	Dec 6, 2018	Vito Hu	Add <u>B50</u> , <u>B51</u> command Add <u>Speed Source</u> bit in <u>GPRS.status</u> field
V1.8	Dec 12, 2018	Vito Hu	Add <u>B25</u> , <u>B29</u> , <u>B34</u> , <u>B80</u> , <u>B81</u> , <u>B82</u> , <u>B96</u> , <u>B98</u> , <u>F06</u> , <u>C08</u> Add alm-code <u>21</u> , <u>30</u> , <u>44</u> , <u>45</u> , <u>46</u> , <u>47</u>
V1.9	July 12, 2019	Vito Hu	Add <u>buz-tip</u> field in <u>B21</u> command
V1.10	Aug 7, 2019	Vito Hu	Add <u>C07</u> command
V1.11	Sep 29, 2019	Vito Hu	Add <u>S11</u> command Modify <u>B04</u> , <u>B96</u> commands Delete <u>B15</u> command Delete <u>Enter Sleep</u> , <u>Wake Up</u> alarm code
V1.12	Feb 14, 2020	Vito Hu	Add <u>spd-ltm</u> field in <u>B20</u> command Add <u>spd-src</u> field for over speed alarm (alm-code: <u>18</u>) Add alm-code <u>42</u>
V1.13	Jun 22, 2020	Vito Hu	Add <u>D10</u> , <u>S14</u> command
V1.14	Oct 21, 2020	Vito Hu	Add <u>S09</u> Add GPRS heartbeat <u>A10</u> format, <u>C11</u> format Delete <u>B82</u>

Contents

Document History	3
1 GPRS Command Format	7
2 SMS Command Format.....	8
3 Serial port (COM) Command Format	9
4 Command Writing Specification	10
5 GPRS Data Format	11
5.1 A01 -- GPS Position/Alarm Data Format	11
5.2 A10 – GPRS Heartbeat Data Format	15
5.3 C11 – Received-SMS Uploading Package Format.....	17
6 Command List	19
B00 – Setting GPRS Parameters.....	19
B01 – Setting GPRS APN Parameters	19
B02 – Setting GPRS Link Protocol	20
B03 – Setting Tracking Time Interval	20
B04 – Setting Roaming Tracking Time Interval	20
B05 – Setting Distance Tracking Interval	21
B07 – Setting the Direction Change Upload	21
B08 – Setting Speeding Alarm	22
B10 – Setting SMS Password	22
B11 – Setting SOS Number	23
B12 – Output Control	23
B13 – Pulse Output Control	23
B14 – Setting SMS Time Zone	24
B16 – Setting Initial Mileage and Initial Runtime	24
B17 – Clear Blind Data	25
B18 – Setting in-port Working Mode.....	25
B20 – Setting Geo-fence	25
B21 – Setting Fatigue Driving	26
B22 – Setting Maximum Parking Time	27
B23 – Setting Alarm Action.....	27
B24 – Setting Complicated Alarm Action.....	28

B25 – Setting SMS Timing Tracking	29
B26 – Setting Alarm SMS Head String	30
B27 – Setting Parameters of Harsh Acceleration Alarm	30
B28 – Setting Parameters of Harsh Braking Alarm	30
B29 – Setting Sensitivity of Motion Sensor	31
B31 – Setting SOS Number Attribute.....	31
B33 – Setting Maximum Idle Time	32
B34 – Setting Voltage Range for AD Port.....	32
B37 – Setting Digital Temperature Number.....	33
B38 – Setting High/Low Temperature Alarm.....	34
B39 – Delete Digital Temperature Sensor.....	34
B40 – Retrieve Temperature Sensor Data.....	35
B50 – Setting Speed Sensor	35
B51 – Calibrating Speed Sensor.....	36
B80 – Setting Fuel Theft/Filling Alarm.....	36
B81 – Setting Fuel Level Alarm	37
B90 – Reset Tracker or Module.....	38
B91 – Setting Parameters to Default	38
B94 – Turn on/off LED.....	38
B96 – Enable/Disable Vibration Alarm.....	39
B98 – Setting Lower Power Parameters	39
B99 – OTA using FTP Server	40
F01 – Enable/Disable Buzzer	41
F02 – Set Authorized Card Type.....	42
F06 – Setting Time Limit for DLT License Uploading.....	42
C01 – Retrieve Position Information.....	42
C02 – Retrieve Firmware/Hardware Version, SN, IMEI	43
C03 – Retrieve Supply Power Status.....	43
C04 – Retrieve Parameter Setting	44
C06 – Retrieve Batch Parameters	44
C07 – Retrieve ISP Information via USSD.....	45
C08 – Retrieving AD voltage	45
D10 – RS232 Accessory Data Transparent Transmission	45
S09 – Setting GPRS Heartbeat Interval	46



S11 – Setting ACC OFF Delay Package Uploading	47
S14 – Setting RS232 Accessory Data Transparent Transmission	47
Appendix A - Alarm Code and Alarm Parameter	49

1 GPRS Command Format

GPRS uplink (i.e.: Data is sent from tracker 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 tracker) command format:

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

Remarks:

- ⊙ Comma (,) is used to separate data fields, 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: Tracker 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 chapters.
- ⊙ 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 fields of GPRS/SMS command.

proc-result: COM 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 GPRS Data Format

5.1 A01 -- GPS Position/Alarm Data Format

\$\$<pack-len>,<ID>,<work-no>,A01,<alm-code | alm-para>,<date-time>,<fix_flag>,<latitude>,<longitude>,<speed>,<course>,<altitude>,<odometer>,<runtime>,<status>,<input-st>,<output-st>,MCC|MNC|LAC|CI,bat-ad|ext-ad|ad1...adN,<rfid_data>,<digital-sensor>*<checksum>\r\n

Descriptions of position/alarm data:

Example:	
<pre> \$\$276,863835029419947,29,A01,,170705072751,A,22.621798,114.036116,57,0,126,1627,404,80 000000,02,0,460 0 24A4 F82,A33 3B9 0 0,% ^SUKSAWADDEE\$SAITHARN\$MISS^^?;6007643100500157891=150619800909=?+ 24 2 0004552 00100 ?,26.06 26.18*7C </pre>	
Filed	pack-len
Description	decimal string format, the field of <i>pack-len</i> is {,<ID>,<work-no>,A01,<alm-code alm-para>,<date-time>,<fix_flag>,<latitude>,<longitude>,<speed>,<course>,<altitude>,<odometer>,<runtime>,<status>,<input-st>,<output-st>,MCC MNC LAC CI,bat-ad ext-ad ad1...adN,<rfid_data>,<digital-sensor>}, be careful, comma(,) in front of <i>ID</i> included.
Example	270
Filed	ID
Description	Tracker ID, default IMEI, ASCII string
Example	863835029419947
Filed	work-no
Description	working number, hexadecimal string format, cyclic accumulation from 1 to 0xFFFF
Example	29, indicates that the value of <i>work-no</i> is 0x0029
Filed	alm-code alm-para
Description	Alarm code and alarm parameter, refer to Appendix A; For normal position data, this field is empty.
Example	Empty, the package is a normal position one.
Filed	date-time
Description	UTC-0 date & time, in format: YYMMDDHHmmss 01 YY: year, value(year – 2000), 2 characters 02 MM: month, value range 1--12, 2 characters 03 DD: day, value range 1--31, 2 characters 04 HH: hour, value range 0--23, 2 characters 05 mm: minute, value range 0-59, 2 characters

	06 ss: second, value range 0--59, 2 characters																											
Example	170705072751, which means 2017-07-05 07:27:51																											
Filed	fix_flag																											
Description	GPS Status flag, A--valid, V--invalid																											
Example	A, means that GPS signal is valid																											
Filed	latitude																											
Description	Latitude, negative in southern hemisphere, decimal string format																											
Example	22.621798																											
Filed	longitude																											
Description	Longitude, negative in western hemisphere, decimal string format																											
Example	114.036116																											
Filed	speed																											
Description	Unit km/h, decimal string format																											
Example	57, means 57km/h																											
Filed	course																											
Description	Running direction, unit degree, clockwise angle, decimal string format																											
Example	0																											
Filed	altitude																											
Description	Altitude, unit meter, decimal string format																											
Example	126, means 126m																											
Filed	odometer																											
Description	Unit meter, decimal string format																											
Example	1627, means odometer 1627 m																											
Filed	runtime																											
Description	Service time, unit second, decimal string format																											
Example	404, means 404 s																											
Filed	status																											
Description	Alarm status or vehicle status, hexadecimal string format, as the following table:																											
	<table border="1"> <thead> <tr> <th>bit</th> <th>definition</th> <th>description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>GPS antenna cut</td> <td>Clear when antenna re-connect</td> </tr> <tr> <td>1</td> <td>Ext-power low voltage</td> <td>Clear when voltage normal</td> </tr> <tr> <td>2</td> <td>Ext-power lost</td> <td>Clear when ext-power re-connect</td> </tr> <tr> <td>3--7</td> <td>CSQ</td> <td>GSM signal strength, range [0,31]</td> </tr> <tr> <td>8</td> <td>Fatigue Driving</td> <td>Clear when fatigue relieve</td> </tr> <tr> <td>9</td> <td>Parking Overtime</td> <td>Clear when auto starts running</td> </tr> <tr> <td>10</td> <td>Idling Running</td> <td>Clear when auto starts running or ACC OFF</td> </tr> <tr> <td>11-14</td> <td>Reserve</td> <td></td> </tr> </tbody> </table>	bit	definition	description	0	GPS antenna cut	Clear when antenna re-connect	1	Ext-power low voltage	Clear when voltage normal	2	Ext-power lost	Clear when ext-power re-connect	3--7	CSQ	GSM signal strength, range [0,31]	8	Fatigue Driving	Clear when fatigue relieve	9	Parking Overtime	Clear when auto starts running	10	Idling Running	Clear when auto starts running or ACC OFF	11-14	Reserve	
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9	Parking Overtime	Clear when auto starts running																										
10	Idling Running	Clear when auto starts running or ACC OFF																										
11-14	Reserve																											

	15	Speed Source	0—GPS speed; 1—Sensor speed
	16--27	Reserve	
	28—31	satellite number	satellite number, range [0,12], update from GPS module data
Example	80000000, means satellite number is 8, and no status bits		
Filed	input-st		
Description	state of input, hexadecimal string format: bit[0] – input1 status; bit[1] – input2 status; bit[7] – Vehicle battery protection for low voltage etc.; for each bit, 1- input state is active, 0- input state is inactive		
Example	02, means input2 is active		
Filed	output-st		
Description	state of output, hexadecimal string format: bit[0] – output1 status; bit[1] – output2 status; etc.; for each bit, 1- output exports high level, 0- output exports low level		
Example	0, means ALL output exports low level		
Filed	MCC MNC LAC CI		
Description	Mobil base station information. ‘ ’ is used to separate each data. MCC, MNC: decimal string format LAC, CI: hexadecimal string format		
Example	460 0 24A4 F82 : Value of MCC is 460; Value of MNC is 0; Value of LAC is 0x24A4; Value of CI is 0xF82;		
Filed	bat-ad ext-ad ad1...adN		
Description	Sample data of AD input, value range[0,0x1000], hexadecimal string format; Using “ ” to separate each data; bat-ad: Sample value of internal battery voltage ext-ad: Sample value of ext-power voltage Formula (Convert hex to decimal first)- bat=(X*3.3*2)/4096, unit: V ext= (X*3.3*16)/4096, unit: V ad1 ... adN: Sample value of AD1 ... ADN input, for A500, <u>ad1</u> and <u>ad2</u> corresponds to two analog input, while <u>ad3</u> corresponds to ultrasonic fuel sensor data. NOTE: When ultrasonic fuel sensor installed, sensor data is add at the end of the		

5.2 A10 – GPRS Heartbeat Data Format

\$\$<pack-len>,<ID>,<work-no>,A10,<status>,<bat-ad|ext-ad>*<checksum>\r\n

Descriptions of position/alarm data:

Example: \$\$33,863835029419947,36,A10,2,190 46C*60\r\n													
Field	pack-len												
Description	decimal string format, the field of <i>pack-len</i> is {,<ID>,<work-no>,A10,<status>,<bat-ad ext-ad>}, be careful, comma(,) in front of <u>ID</u> included.												
Example	33												
Field	ID												
Description	Tracker ID, default IMEI, ASCII string												
Example	863835029419947												
Field	work-no												
Description	working number, hexadecimal string format, cyclic accumulation from 1 to 0xFFFF												
Example	36, indicates that the value of <i>work-no</i> is 0x0036												
Field	A10												
Description	Data type specification, which is used to define GPRS heartbeat package format.												
Example													
Field	status												
Description	Alarm status or vehicle status, hexadecimal string format, as the following table: <table border="1" data-bbox="424 1279 1361 1552"> <thead> <tr> <th>bit</th> <th>definition</th> <th>description</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>GPS antenna cut</td> <td>Clear when antenna re-connect</td> </tr> <tr> <td>1</td> <td>Ext-power low voltage</td> <td>Clear when voltage normal</td> </tr> <tr> <td>2</td> <td>Ext-power lost</td> <td>Clear when ext-power re-connect</td> </tr> </tbody> </table>	bit	definition	description	0	GPS antenna cut	Clear when antenna re-connect	1	Ext-power low voltage	Clear when voltage normal	2	Ext-power lost	Clear when ext-power re-connect
bit	definition	description											
0	GPS antenna cut	Clear when antenna re-connect											
1	Ext-power low voltage	Clear when voltage normal											
2	Ext-power lost	Clear when ext-power re-connect											
Example	2, responses to (0010) _B , means Ext-power low voltage												
Field	bat-ad ext-ad												
Description	Voltage of internal battery and external power, using “ ” to separate each data; bat-ad: Voltage of internal battery, unit 0.01V ext-ad: Voltage of ext-power voltage, unit 0.01V												
Example	190 46C: Voltage of battery is 0x01A0, i.e. 4.00V Voltage of ext-power is 0x054D, i.e. 11.32V;												
Field	checksum												
Description	Checksum of package, 2 bytes hexadecimal string format, XOR of {<pack-len>,<ID>,<work-no>,A10,<status>,<bat-ad ext-ad>}												



Example	60 The XOR checksum is 0x60
Field	\r\n
Description	End of package, i.e. <CR><LF>
Example	\r\n

5.3 C11 – Received-SMS Uploading Package Format

\$\$<pack-len>,<ID>,<work-no>,C11,<datetime>,<phone-num>,<sms-content>*<checksum>\r\n

Descriptions of position/alarm data:

Example: \$\$63,863835029419947,6BD,C11,201109085404,+8615817213914,000000,C06*34\r\n	
Field	pack-len
Description	decimal string format, the field of <i>pack-len</i> is {,<ID>,<work-no>,C11,<datetime>,<phone-num>,<sms-content>}, be careful, comma(,) in front of <i>ID</i> included.
Example	63
Field	ID
Description	Tracker ID, default IMEI, ASCII string
Example	863835029419947
Field	work-no
Description	working number, hexadecimal string format, cyclic accumulation from 1 to 0xFFFF
Example	6BD, indicates that the value of <i>work-no</i> is 0x06BD
Field	C11
Description	Data type specification, which is used to define received SMS content package format.
Example	
Field	datetime
Description	UTC-0 date & time, in format: YYMMDDHHmmss 01 YY: year, value(year – 2000), 2 characters 02 MM: month, value range 1--12, 2 characters 03 DD: day, value range 1--31, 2 characters 04 HH: hour, value range 0--23, 2 characters 05 mm: minute, value range 0-59, 2 characters 06 ss: second, value range 0--59, 2 characters
Example	201109085404, 2020-11-9 08:54:04 @UTC-0
Field	phone-num
Description	Sender's number of the received SMS
Example	+8615817213914: Sender's number is "+8615817213914"
Field	Sms-content
Description	Content of the received SMS, ASCII or UNICODE
Example	000000,C06: SMS content is "000000,C06"
Field	checksum
Description	Checksum of package, 2 bytes hexadecimal string format, XOR of {<pack-len>,<ID>,<work-no>,C11,<datetime>,<phone-num>,<sms-content>}
Example	34 The XOR checksum is 0x34



Field	\r\n
Description	End of package, i.e. <CR><LF>
Example	\r\n

6 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 both <u>accoff_tmr</u> and <u>parking_tmr</u> are set, <u>parking_tmr</u> will be ignored in actual usage.
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 <u>roam_accoff_tmr</u> and <u>roam_parking_tmr</u> are set, <u>roam_parking_tmr</u> will be ignored in actual usage.



	<p>02 When both <u>B03</u> and <u>B04</u> (<i>roam basic tmr</i> != 0) are set, tracker uses below logic for uploading:</p> <ul style="list-style-type: none"> ☉ When roaming detected, tracker uploads GPRS using <u>B04</u> setting, according to ACC, moving/parking status ☉ For non-roaming condition, tracker uploads GPRS using <u>B03</u> setting, according to ACC, moving/parking status
Reply	<p>B04,<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>B04,3600</p> <p>01 Set timing tracking interval to 3600s while roaming.</p> <p>B04,3600,7200</p> <p>01 Setting timing tracking interval to 3600s when ACC ON, 7200s when ACC off, under roaming status</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 0--359, default 20.</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	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>,<buzzer_on> 01 speeding: speed, unit km/h, range 0--300, default 0. 02 buzzer_on: 0~Disable buzzer for speeding alarm; 1~Enable buzzer, when speeding, buzzer on, till speed returns below the setting value. Default, speeding buzzer is enabled. 03 When <i>speeding</i> is set to 0, speeding alarm is disabled. 04 Use magnetic card reader's internal buzzer.
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, buzzer will be on when speeding.
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 <u>sos_num1</u> to 15698210011, <u>sos_num2</u> to empty, <u>sos_num3</u> 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>



	<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

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 <u>tzone</u> is 0.</p> <p>03 When SMS time zone is set, all tracking/alarm SMS use <u>tzone</u> 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

B16 – Setting Initial Mileage and Initial Runtime

Source	GPRS/COM/SMS
Description	<p>B16,<init_mile>,<init_runtime></p> <p>01 init_mile: initial mileage, unit meter, default 0m, range [0, 4294967296].</p> <p>02 init_runtime: initial runtime, unit s, default 0s, range [0, 4294967296].</p>
Reply	<p>B16,<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	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, 3—input3, 4—input4, etc.. 02 valid_mode: valid trigger mode, 0--low level valid, 1--high level valid. 03 This command is supported for INPUT3 and INPUT4.
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 <u>input</u> field in setting command.

B20 – Setting Geo-fence

Source	GPRS/COM/SMS
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Description	<p>B20,<index>,<flag>,<spd-ltm>,<p-num>,<lat1><lon1><lat2><lon2><...><latN><lonN></p> <p>01 index: fence index, value 1~128, i.e.: 128 geo-fence can be set at most.</p> <p>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.</p> <p>03 spd-ltm: Speed limit when entering fence, unit km/h. When <u>spd-ltm==0</u>, disable speed judgment for which inside the fence</p> <p>04 p-num: Number of end points of polygon, range [3,20]; maximally, tracker supports 20 points for each polygon</p> <p>05 lat, lon: hexadecimal string format, latitude and longitude of each end point, unit 0.000001° , the number of latitude and longitude pair is defined by <u>p-num</u>. Each <u>lat</u> or <u>lon</u> occupies 8 characters, i.e., one point occupies 16 characters. There is no delimiter between <u>lat</u> and <u>lon</u>.</p> <p>06 When command contains <u>index</u> field only, delete the geo-fence specified by <u>index</u>; When <u>index</u> is empty or <u>index==0</u>, delete all geo-fence</p> <p>07 When detecting enter or exit geo-fence, GPRS alarm data, which contains <u>index</u> field in <u>alm-para</u>, will be uploaded to server, refer to <u>Appendix A</u> for detail</p>
Reply	<p>B20,<err_code></p> <p>01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.</p>
Example	<p>B20,1</p> <p>01 Delete 1# geo-fence</p> <p>B20,12,3,10,4,00c6ac82009a0b1500c6ac3c009a0b9600c6a8ae009a0b8600c6a93a009a0b1a</p> <p>01 Setting #12 polygon fence, alarm when entering and exiting, speed limit 10km/h inside the fence, 4 points as below:</p> <p>00c6ac82,009a0b15 (13.020290° ,10.095381°) 00c6ac3c,009a0b96 (13.020220° ,10.095510°) 00c6a8ae,009a0b86 (13.019310° ,10.095494°) 00c6a93a,009a0b1a (13.019450° ,10.095386°)</p>
Retrieve	<p>UNSUPPORT</p>

B21 – Setting Fatigue Driving

Source	GPRS/COM/SMS
Description	<p>B21,<drowsy_time>,<rest_time>,<buz-tip></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 buz-tip: 0 (default)—Disable buzzer function for fatigue driving; 1—Enable buzzer</p>

	<p>function, under fatigue driving, buzzer sounds(1s on, 1s off) to remind driver, till vehicle stops(GPS speed 0km/h); Using <u>F01</u> command to select external buzzer, which needs to connect buzzer to OUT2, or internal buzzer, which is built in magnet reader.</p> <p>04 When <u>drowsy time</u> is set to 0, fatigue driving alarm is disabled.</p> <p>05 The field <u>rest time</u> can be empty, while the default value is used.</p> <p>06 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> <p style="padding-left: 40px;">FAILED – Procession failed.</p>
Example	<p>B21</p> <p>01 Set fatigue driving time to the default value 14400s, and minimum rest time to the default value 1200s, NO buzzer reminding for fatigue driving.</p>
Retrieve	C04,B21

B22 – Setting Maximum Parking Time

Source	GPRS/COM/SMS
Description	<p>B22,<time></p> <p>01 time: Maximum parking time, unit s, default 0s, i.e. parking overtime alarm is disabled.</p> <p>02 When parking time exceeds preset value, a parking overtime alarm triggered.</p> <p>03 When auto speed is 0, it is regards as parking.</p>
Reply	<p>B22,<err_code></p> <p>01 err_code: 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 –Processing failed.</p>
Example	<p>B22,1200</p> <p>01 Set maximum parking time to 1200s.</p>
Retrieve	C04,B22

B23 – Setting Alarm Action

Source	GPRS/COM/SMS
Description	<p>B23,<alm-code>,<GPRS><SMS><two-way-call><monitor-call><photo><AN-idx></p> <p>01 alm-code: Alarm type, refer to <u>Appendix –A</u>.</p> <p>02 GPRS: Disable/enable GPRS uploading.</p> <p>03 SMS: Disable/enable SMS to SOS number.</p> <p>04 two-way-call: Disable/enable SOS number dialing under two-way conversation.</p>



	<p>05 monitor-call: Disable/enable SOS number dialing under monitor mode.</p> <p>06 photo: Disable/enable photographing, with resolution setting by <u>D07</u> command.</p> <p>07 AN-idx: Complicated action, value 1~6, which corresponds to <u>AN-idx</u> field in <u>B24</u> command; AN is composed of a serial command sets, performing user define operations; Refer to <u>B24</u> command for detail.</p> <p>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.</p> <p>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.</p>
Reply	<p>B23,<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>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 <u>Appendix –A</u>. 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 <u>B23</u> setting. When both <u>AN-idx</u> field in <u>B23</u> command, and AN detail in <u>B24</u> 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 <u>B23</u> 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 <u>B24</u>:</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 <u>B23</u>, and whether AN detail is set in <u>B24</u>.</p> <p>c When both <u>B23</u> and <u>B24</u> are set, tracker performs operation defined by <u>B24</u>.</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	<p>B23,2,100003</p> <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 OUT1 high level, delay 3s, and then set OUT1 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	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 <i>two-way-call</i> and <i>monitor</i> are set, <i>monitor</i> is valid, i.e.: tracker picks up phone-call in monitor mode. 08 When the command string has only <i>sos-num</i> field, default attribute is set to corresponding SOS number.



	09 Default attribute of SOS number: <i>two-way-call</i> and <i>pos-sms</i> .
Reply	B31,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B31,1,111 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 <i>sos-num</i> 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 300s. 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 <u>Idling Alarm</u> (<i>alm_code=35</i>), if counter exceeds <i>idle_time</i>
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, 1 or 2, which corresponds to AD1 and AD2 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 <i>filter-option</i> ==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 <i>filter-option</i> ==1: When ACC ON, sample AD data and upload real-time; When ACC

	<p>OFF (maybe external power exists), keeping the last sample value, and upload to server</p> <p><i>filter-option</i>==2: 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> <tr> <td>AD2</td> <td>0</td> <td>0</td> <td>0</td> <td>Real-time get sample data and upload</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	AD2	0	0	0	Real-time get sample data and upload
port	min_volt/V	max_volt/V	filter-option	Description												
AD1	0	5	0	Get sample data according to external power status												
AD2	0	0	0	Real-time get sample data and upload												
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	<p>B34,1,0,5.0</p> <p>01 Setting voltage range of AD1 to [0,5]V, getting sample data when external power exist, keeping sample data when external power disconnected</p>															
Retrieve	C04,B34,<index>															

B37 – Setting Digital Temperature Number

Source	GPRS/COM/SMS
Description	<p>B37</p> <p>01 Tracker supports multiple digital temperature sensors; When more than one sensor are installed, it is suggested to set sensor's number.</p> <p>02 When only one sensor is installed, tracker uses default #1 as sensor's number</p> <p>03 Method to set sensor's number:</p> <ul style="list-style-type: none"> a Connect one sensor to tracker, send <u>B37</u> command, tracker set sensor's number automatically, and reply setting result in command's reply b Disconnect the sensor, whose number has been set; Connect another sensor to tracker, use <u>B37</u> command to set newly added sensor's number c Repeat the operation above, if there are more sensor d NOTE: When setting sensor's number, only one sensor is allowed to connect to tracker <p>04 When sensors' numbers are set, tracker will arrange temperature data in the setting sequence</p> <p>05 It is suggested to reset number, when some sensors are removed.</p>
Reply	<p>B37,<t_sensor_sn></p> <p>01 t_sensor_sn: Sensor's number which is set automatically</p> <ul style="list-style-type: none"> [1,8] – Setting succeed, the value is the sensor's number [FULL] – The number of sensors exceed FAILED – Setting failed, error connection, or more than one sensor are

	connected
Example	
Retrieve	UNSUPPORT

B38 – Setting High/Low Temperature Alarm

Source	GPRS/COM/SMS
Description	<p>B38,<t_sensor_sn>,<high_temp>,<low_temp></p> <p>01 t_sensor_sn: sensor's number, refer to B37 command; When one sensor is installed, t_sensor_sn==1</p> <p>02 high_temp: High temperature threshold, unit °C; If this field is empty, high temperature alarm is disabled.</p> <p>03 low_temp: Low temperature threshold, unit °C; If this field is empty, Low temperature alarm is disabled.</p> <p>04 When <u>t_sensor sn</u>, <u>high temp</u>, <u>low temp</u> fields are empty, all sensors' high/low temperature alarm are disabled.</p> <p>05 Refer to Appendix-A for <u>alm-code</u> and <u>alm-para</u> of high/low temperature alarm</p>
Reply	<p>B38,<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>B38,1,-10,-20</p> <p>01 Setting #1 sensor's parameters, high temperature threshold: -10°C, low temperature threshold: -20°C</p> <p>B38,1,-10</p> <p>01 Setting #1 sensor's parameters, high temperature threshold: -10°C, low temperature threshold: disable</p> <p>B38,1,, -20</p> <p>01 Setting #1 sensor's parameters, high temperature threshold: disable, low temperature threshold: -20°C</p> <p>B38,1</p> <p>01 Disable #1 sensor's high and low temperature alarm</p>
Retrieve	C04,B38,<t_sensor_sn>

B39 – Delete Digital Temperature Sensor

Source	GPRS/COM/SMS
Description	B39,<t_sensor_sn>



	<p>01 When multiple sensors are installed, and some ones need to be removed, this command can be used. In actual usage, remove sensor first, then send <u>B39</u> command</p> <p>02 <u>t_sensor_sn</u>: sensor's number, refer to <u>B37</u> command; When one sensor is installed, <u>t_sensor_sn=1</u>; When <u>t_sensor_sn</u> field is empty, remove all sensors</p>
Reply	<p>B39,<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	
Retrieve	UNSUPPORT

B40 – Retrieve Temperature Sensor Data

Source	GPRS/COM/SMS
Description	<p>B40</p> <p>01 The command is used for testing after installation. Tracker replies all sensor's data.</p>
Reply	<p>B40,<tsensor1_temp> <tsensor2_temp>.... <tsensorN_temp></p> <p>01 The reply indicates the number of sensor, and sensors' data</p> <p>02 N: The number of digital temperature sensor</p> <p>03 <u>tsensor[1,N]_temp</u>: Temperature data, unit °C; Data is arranged by the number set by B37; ' ' is used to separate neighboring data</p>
Example	
Retrieve	UNSUPPORT

B50 – Setting Speed Sensor

Source	GPRS/COM/SMS
Description	<p>B50,<enable>,<kvalue></p> <p>01 The command is used to setting speed sensor</p> <p>02 enable: 0—Disable speed sensor (default); 1—Enable; After enabled, speed and odometer is calculated based on sensor</p> <p>03 kvalue: Calculating coefficient for speed sensor</p> <p>The basic description for speed sensor: There is speed sensor installed on vehicle; When tyre turns a round, sensor outputs several pulses, as a result, pulse number has a linear relationship to tyre perimeter $odometer=f(pls-num)$, while odometer: odometer vehicle runs during a period pls-num: pulse number during <u>odometer</u> period</p> <p>Tracker can capture pulse signal; Based on the function above, capturing all pulses in a time period, odometer/mileage can be calculated, and capturing pulses in one second,</p>

	real-time speed can be calculated
Reply	B50,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	B50,1,3600
Retrieve	C04,B50

B51 – Calibrating Speed Sensor

Source	GPRS/COM/SMS
Description	B51 01 The command is used to calibrate <i>kvalue</i> for speed sensor 02 After <u>B51</u> received, it is needed to finished calibration in 5mins; When 5mins timeout, tracker returns to normal status 03 Steps to calibrate speed sensor: a Sending <u>B51</u> command to tracker, tracker will reply <u>B51,OK</u> b Vehicle runs at 60km/h speed (NOTE : 60km/h speed is IMPORTANTE), press SOS button for at least 2 seconds, and then, calibration finished. It is noted that, all the operations should be finished in 5mins after <u>step-a</u> c Retrieve calibration result using command <u>C04,B50</u> , tracker will reply calibrated <i>kvalue</i> coefficient, which can be set to the other vehicles of the same type using <u>B50</u> command
Reply	B51,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	UNSUPPORT

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 <u>ad-idx==0</u> , 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 <u>theft-percentage==0</u> or field empty,



	<p>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 <i>filling-percentage==0</i> or filed 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 <i>use-acc</i> 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 <i>ad-idx==0</i>, 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 <i>low-percentage==0</i> 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 <i>high-percentage==0</i> or filed 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

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	
Source	GPRS/COM/SMS
Description	B94,<led-on> 01 led-on: 1--turn on LED, 0--turn off LED. 02 Default, <i>led-on=1</i> .
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 <i>option</i> ==1: Trigger alarm when vibration detected and ACC OFF(default) <i>option</i> ==0: 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 <i>low_pwr_v</i> , tracker sends “ <u>Low Ext-Power</u> ” alarm, and cuts off power supply if <i>control</i> ==1, in order to protect auto battery. 03 low_recovery_v: External power recovery voltage, unit V; When external power input is higher than <i>low_recovery_v</i> , it is regards that external power is normal; tracker clears “Low Ext-Power” flag, and restore external power supply if <i>control</i> ==1. 04 control: 1—cut off external power supply when external input is lower than <i>low_pwr_v</i> , and restore supply when external input higher than <i>low_recovery_v</i> , it is used to protect auto battery; 0(default)—Disable auto battery protection. 05 It is suggested to set parameters which (<i>low_recovery_v</i> – <i>low_pwr_v</i>) >= 0.5V 06 Default settings for 12V or 24V auto battery, as below table: <table border="1" data-bbox="445 1890 1275 2018"> <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	B98,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	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. B98,0,0,1 01 Setting adaptive low external parameters, tracker judges voltage automatically, and cuts off when low external input.
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 Firmware version V1.12 or above support FTP OTA function</p> <p>01 file_name: file name for OTA, should be “xxx.bin” format</p> <p>02 option: option for OTA, when the field empty, using default setting</p> <table border="1" data-bbox="406 1146 1401 1317"> <thead> <tr> <th>option</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>0(default)</td> <td>Normal OTA, tracker check whether <i>file_name</i> match current version or not</td> </tr> <tr> <td>1</td> <td>Mandatory OTA, tracker doesn't check <i>file_name</i></td> </tr> </tbody> </table> <p>03 ftp_address: FTP server address, default 47.88.17.17</p> <p>04 ftp_port: FTP server port, default 21</p> <p>05 ftp_loginid, ftp_loginpwd: FTP login user-name and password, when fields empty, using default account on 47.88.17.17</p> <p>06 apn, apn_name, apn_pwd: APN setting for FTP connection, default, tracker using the same setting as B01 command</p> <p>07 After B99 command received, tracker matches <i>file_name</i> to current firmware version, and starts OTA according to result</p> <p>08 During OTA operation, tracker will disconnect from tracking server, stop timing uploading/photographing.</p> <p>09 The timeout for FTP OTA is 15mins, when exceed, tracker will restart automatically, and connect to tracking server</p> <p>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 <i>file_name</i> match current version or not	1	Mandatory OTA, tracker doesn't check <i>file_name</i>
option	Description						
0(default)	Normal OTA, tracker check whether <i>file_name</i> match current version or not						
1	Mandatory OTA, tracker doesn't check <i>file_name</i>						
Reply	B99,<err_str> 01 err_str: Error code, string format “Invalid BIN file” - <i>file_name</i> doesn't match current firmware version						

	<p>“No ext-pwr, Please Connect in 15mins” – External power disconnect</p> <p>“The Same Version” – file_name has the same version to current firmware version</p> <p>“OK” – OTA start</p>
Example	<p>B99,500T-V1.12.bin</p> <p>01 Start OTA, tracker will connect to 47.88.17.17:21, using default FTP account for file download</p>
Retrieve	

F01 – Enable/Disable Buzzer

Source	GPRS/COM/SMS
Description	<p>F01,<en>,<acc-on-tmr>,<login-keep-acc-off>,<buz-type></p> <p>01 en: 0~Disable buzzer function; 1~Enable (default)</p> <p>02 acc-on-tmr: Time period from ACC ON to swiping authorized card, unit minute, default 10min; During this period, buzzer will be on, until authorized card swiped, or ACC OFF, or timeout.</p> <p>03 login-keep-acc-off: Time period from swiping authorized/unauthorized card to ACC ON, unit minute, default 0min; During this period, tracker keeps card’s information; If ACC ON in <u>login-keep-acc-off</u> minutes, tracker uploads “Login” or “Illegal Login” using swiped card data, otherwise, buzzer on, and card re-swiping is needed.</p> <p>04 buz-type: 0(default)~Internal buzzer integrated with reader; 1~External buzzer</p> <p>04 When <u>buz-type==1</u>, tracker uses OUT2 to control buzzer. External buzzer is needed under this setting.</p> <p>Notes: According to DLT rule, just use F01 default parameters, NO NEED set it.</p>
Reply	<p>F01,<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>F01,0</p> <p>01 Disable buzzer function</p> <p>F01,1,2,3</p> <p>01 Enable buzzer function, set <u>acc-on-tmr</u> to 2mins, and <u>login-keep-acc-off</u> to 3mins</p> <p>F01,1</p> <p>01 Enable buzzer function, set <u>acc-on-tmr</u> to default 10mins, and <u>login-keep-acc-off</u> to 10mins</p>
Retrieve	C04,F01

F02 – Set Authorized Card Type

Source	GPRS/COM/SMS
Description	<p>F02,<start_digit_1>,< start_digit_2>,< start_digit_3>,...,<start_digit_16></p> <p>01 start_digit_1/2/3...16: authorized card type, 2/4 digitals, maximally, 16 types are supported.</p> <p>02 When all <u>start digit 1/ start digit 2/ start digit 3...start digit 16</u> are empty, delete authorized card type, all valid cards are regarded as authorized ones, and “Login” or “Log Out” event will be generated when card swipped.</p> <p>03 Refer to <u>Appendix A</u> for <u>alm-code</u> of “Login”/”Log Out”/” Illegal Login”</p>
Reply	<p>F02,<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>F02,14,24</p> <p>01 Set two types of authorized card, whose TRACK#3 data start with “14” or “24”. When authorized cards swiped, tracker will generate “Login”(alm-code==37) or “Log Out”(alm-code==38) information to server, for other cards, tracker will generate “Illegal Login”(alm-code==39) information.</p>
Retrieve	C04,F02

F06 – Setting Time Limit for DLT License Uploading

Source	GPRS/COM/SMS
Description	<p>F06,<enable>,<keeping-tmr></p> <p>01 enable: 0~Disable(default); 1~Enable</p> <p>02 keeping-tmr: Time limit for DLT license uploading, unit s, default 0s; When DLT card swiped, tracker uploads GPRS package with license ID during <u>keeping-tmr</u> seconds, and clear license field in GPRS package when <u>keep-tmr</u> timeout</p>
Reply	<p>F06,<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	
Retrieve	C04,F06

C01 – Retrieve Position Information

Source	COM/SMS/GPRS
Description	C01

	<p>01 After command is set, tracker sends a position message.</p> <p>02 When alarm detected, tracker sends alarm SMS with <u>C01</u> format automatically, to all SOS number(s).</p> <p>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> http://maps.google.com/maps?q=<Latitude>,<Longitude>&t=m</p> <p>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.</p> <p>b yyyy-MM-dd hh:mm:ss: current date & time, which is effected by <u>B14</u> command setting.</p> <p>c spd: current speed, unit km/h.</p> <p>d gprs_st: GPRS link status, value: "Connected" or "Disconnected".</p> <p>e gps_fix: GPS signal status, 'A'-fixed, 'V'-not fixed.</p> <p>f PST: Status of ext-power input, "ON" -- ext-power is connected, "OFF" -- ext-power is disconnected.</p> <p>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	<p>Uploading data format: 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: C03,<extp_v>,<bat_v>,<bat_percentage></p> <p>01 extp_v: Voltage of ext-power, unit V.</p>



	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 Batch Parameters

Source	GPRS/COM/SMS
Description	C06 01 Retrieve batch parameters, which is used to diagnose the offline reason
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_ratio>;<ACC ON/OFF>,<Moving/STOP> 01 GID: Tracker ID of GPRS data, default IMEI 02 ip, port: Server ip/port setting in tracker 03 TCP/UDP: transport protocol 04: apn, apn-user, apn_pwd: APN setting in tracker 05 ext_p: Voltage of external power supply 06 bat_v: Voltage of internal battery 07 base_int, accoff_int, ns_ratio: Uploading time interval setting in tracker. It is the same as <u>B03</u> setting 08 ACC ON/OFF: String, ACC status, "ACC ON" or "ACC OFF" 09 Moving/STOP: String, motion status detected by motion sensor, "Moving" or "Stop"
Example	Command: C06 Reply:C06,861694033095389,47.88.35.165:10502,TCP;APN:CMNET,,;EXT:12.09V,BAT:4.17 V; B03:10,0,0,ACC OFF,Stop
Retrieve	UNSUPPORT



C07 – Retrieve ISP Information via USSD

Source	GPRS/COM/SMS
Description	<p>C07,<ussd-str></p> <p>01 Some ISP support USSD function for querying SIM balance or data consumption; Using <u>C07</u> command, user can retrieve those information for tracker's SIM</p> <p>02 ussd-str: Querying string, which is provided by ISP. <u>ussd-str</u> always starts with '*', and ends with '#'. Please refer to ISP for detail.</p>
Reply	<p>C07,<ussd-info></p> <p>01 ussd-info: Querying information which is replied from ISP</p>
Example	C07,*188#
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>,<AD2>:<ad2-voltage>....<And>:<and-voltage></p> <p>01 adx-voltage: Voltage on ADx, unit V</p>
Example	<p>Command: C08</p> <p>Reply: C08,AD1:4.32,AD2:4.36</p>
Retrieve	UNSUPPORT

D10 – RS232 Accessory Data Transparent Transmission

Source	GPRS
Description	<p>D10,<YYMMDDHHmmss >,<port>,<dev-code>,<raw-size>,<raw-data></p> <p>01 YYMMDDHHmmss: UTC-0 date & time</p> <p>YY: year, value(year – 2000), 2 characters</p> <p>MM: month, value range 1--12, 2 characters</p> <p>DD: day, value range 1--31, 2 characters</p>



	<p>HH: hour, value range 0--23, 2 characters mm: minute, value range 0-59, 2 characters ss: second, value range 0--59, 2 characters 02 port: port number, range 1~4. For S50, <u>port==1</u> always 03 dev-code: Device code for RS232 accessory, which is defined by <u>S14</u> command 04 raw-size: Data size from RS232 accessory 05 raw-data: Raw data from RS232 accessory</p>
Reply	<p>D10,OK 01 Reply to <u>D10</u> command is necessary, with the same <u>work-no</u> to uplink package, to notify tracker transparent transmission package received, otherwise, tracker will retransmission <u>D10</u> package 5 times with 30s interval.</p>
Example	<p>Tracker→Server: \$\$82,865851038882502,16B,D10,200616103836,1,9,37,*XD,508J,04,0054,0200,0500,1759,0312#*75\r\n</p> <p>Server reply: ##27,865851038882502,16B,D10,OK*38\r\n</p> <p>NOTE: <u>work-no</u> for both package is the same</p>
Retrieve	UNSUPPORT

S09 – Setting GPRS Heartbeat Interval

Source	GPRS/COM/SMS
Description	<p>S09,<acc-on-interval>,<acc-off-interval> 01 Heartbeat package is independent from normal GPRS position one 02 acc-on-interval, acc-off-interval: Heartbeat interval for ACC ON and ACC OFF, unit: s; default <u>acc-on-interval==0</u>, <u>acc-off-interval==0</u>, which means heartbeat disabled 03 When <u>acc-on-interval</u> or <u>acc-off-interval</u> is set to 0, heartbeat disabled for corresponding ACC status 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> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.</p>
Example	<p>S09,180,300 01 Setting heartbeat interval to 180s for ACC ON, and 300s for ACC OFF</p> <p>S09,0,300 01 Setting heartbeat interval to 300s for ACC OFF, and disable heartbeat for ACC ON</p>



	S09 01 Disable heartbeat for both ACC ON and ACC OFF
Retrieve	C04,S09

S11 – Setting ACC OFF Delay Package Uploading

Source	GPRS/COM/SMS
Description	S11,<delay-packs-num> 01 delay-packs-num: Uploading package number after ACC OFF 02 B03 setting as below: B03,<basic_tmr>,<accoff_tmr> When <u>delay-packs-num</u> !=0, trackers will upload <u>delay-packs-num</u> package to server every <u>basic_tmr</u> seconds, and then every <u>accoff_tmr</u> seconds
Reply	S11,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,S11

S14 – Setting RS232 Accessory Data Transparent Transmission

Source	GPRS/COM/SMS
Description	S14,<port>,<en>,<dev-code> 01 port: Port number, range 1~4. For S50, set <u>port</u> ==1 always 02 en: 0—Close data transparent transmission. 1—Open transmission 03 dev-code: Self-defined device code for RS232 accessory. When <u>dev-code</u> is set to 0, or the field empty, tracker use 1 port number (For S50, 1) for <u>dev-code</u> as default 04 After setting transparent transmission, tracker uploads <u>D10</u> package via GPRS when RS232 accessory data received. 05 Data transparent transmission is independent from data parsing. E.g., when ultrasonic sensor data received, tracker will parse package, and upload raw data to server using <u>D10</u> command
Reply	S14,<err_code> 01 err_code: procession error code. OK – Succeed. UNSUPPORT – Command not supported. FAILED – Procession failed.
Example	
Retrieve	C04,S14



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
8	NULL	Input4 active	IN4
9	NULL	Input4 inactive	IN4 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	spd-src 01 <i>spd-src</i> =0: global over speed, which can be set by B08 command 02 <i>spd-src</i> !=0: geo-fence index, which can be set by B20 command	Speeding alarm	Speeding
20	NULL	GPS antenna cut	GPS Antenna Cut
21	NULL	Vibration Alarm	Vibration
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	Index 01 Fence index, it is the same as <i>index</i> field in B20 command	Exit geo-fence	Exit Fence
34	index 01 Fence index, it is the same as <i>index</i> field in B20 command	Enter geo-fence	Enter Fence
35	NULL	Idling Alarm	Idling Alarm
37	NULL	Login	Login

38	NULL	Log Out	Log Out
39	NULL	Illegal Login	Illegal Login
40	sn 01 sn: Digital temperature sensor's number, refer to B37	High Temperature	High Temperature
41	sn 01 sn: Digital temperature sensor's number, refer to B37	Low Temperature	Low Temperature
42	spd-src duration max-spd avg-spd 01 spd-src: over speeding source spd-src==0: global over speed spd-src!=0: over speed inside fence 02 duration: Duration for over speed, s 03 max-spd: maximum speed during over speed period, km/h 04 avg-spd: Average speed during over speed period, km/h	Speeding Relieve	Speeding Relieve
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