iStartek GPS Tracker Communications Agreement

PT60 exclusive agreement

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Directory

1. Copyright and Disclaimer

2.GPRS instruction format

GPRS command format (data sent from server to device):

$$<pack-no><pack-len>,<ID>,<ID>cmd-code>,<ID>cmd-data<ID>cmd-code><ID>checksum<ID>cmd-code>\\ r\n

GPRS upload command format (data from device to server):

&&<pack-no><pack-len>,<ID>,<ID>cmd-code>,<ID>cmd-data<ID>cmd-code><ID>checksum<ID>cmd-code>\\ r\n

Description:

A comma (,) is a symbol used to separate each data item without spaces before and after the comma.

& & & & & & & & & & & && & & & && & #160; &   &&&&&&&&& #160;& & #160; #160;

$$: the header of the next data.

pack-no： data bag number ,1 byte, from 0 x3A to 0 x7E cycle calculation. If the platform receives the request instruction of the device, or the device receives the instruction issued by the platform and needs to reply to the other party, the pack-no to reply shall be consistent with the instruction received.

pack-len : packet length in decimal format, packet length includes ",<ID>,<ID>cmd-code>,<ID>cmd-data<ID>cmd-code>" data (note: include comma before ID).

ID： equipment ID number, default to the equipment IMEI number.

cmd-code： command code.

cmd-data： command data content, see the description of each command in the following protocol.

checksum : packet checksum ,2 bytes ,16 character format, for the checksum of all previous data (&&<pack-no><pack-len>,<pack-no><pack-len>ID>,<pack-no><pack-len>cmd-code<pack-no><pack-len>ID>,<pack-no><pack-len>cmd-data<pack-no><pack-len>ID>) accumulation and calculation.

r\n： packet terminator, or <CR><LF>.

If not specified, the multibyte value in the cmd-data is in large-end alignment format.

3.GPRS Event Packet Format

&&<pack-no><pack-len>, <ID>, <cmd>, <alm-code>, <alm-data>, <date-time>, <fix_flag>, <latitude>, <longitude>, <sat-quantity>, <HDOP>, <speed>, <course>, <altitude>, <odometer>, <MCC|MNC|LAC|CI>, <CSQ-quanlity>, <system-sta>, <in-sta>, <out-sta>, <ext-V|bat-V|ad1-V|...|adn-V><ext-V|bat-V|ad1-V|checksum> r\n

GPRS event data description:

Examples:

& A147,021104023195429,000,0,,180106093046,A,22.646430,114.065730,8,0.9,54,86,76,326781,460|0|27 B3|0

EA7,27,0000000F ,02,01,04E2|018 C|01 C8|000046\\ r\n		
Project	**Description**	**Examples**
pack-head	Data header ,2 bytes	&&
pack-no	Data bag number ,1 byte, from 0 x3A to 0 x7E loop calculation. If the platform receives the request instruction of the device, or the device receives the instruction issued by the platform and needs to reply to the other party, the pack-no to reply shall be consistent with the instruction received.	A
pack-len	Packet length, 10 character format, The length is {, <ID>, 000, <alm-code>, <alm-data>, <date-time>, <fix_flag>, <latitude>, <longitude>, <sat-quantity >, <HDOP>, <speed>, <course>, <altitude>, <odometer>, <MCC|MNC|LAC|CI>, <CSQ-quanl ity >, <status>, <in-sta>, <out-sta>, <ext-V|bat-V|ad1-V|...<ext-V|bat-V|ad1-V|adn-V>} sum	147
ID	The device I D number ,3~16 digits or letters, defaults to the device IMEI number	021104023195429
cmd	GPRS command data type identification 000 for ordinary data upload command, do not need the platform to reply to receive confirmation; 010 for ordinary data upload command, need platform reply to receive confirmation; For compressed data package upload command, the platform needs to reply to receive confirmation.	000
alm-code	Alarm event code, please refer to Appendix A	0
alm-data	Additional description of alarm events, please refer to Appendix A	Empty, the event is not annotated
date-time	GMT0date &time, format: YYMMDDHHmmss 01YY： year ,2 characters for year minus 2000 02MM：,01-12,2 characters 03DD： day ,01-31,2 characters 04HH： hours ,00-23,2 characters 05 mm：,00-59,2 characters 06 ss： seconds ,00-59,2 characters	180106093046,2018-1-6 9：30：46
fix_flag	GPS positioning status, A— positioning, V— not positioning	A
latitude	Latitude, in decimal character format If it's South latitude, add - sign	22.646430
longitude	Longitude, in metric ,10-character format If it's the west longitude, add a - sign	114.065730
sat-quantity	Number of satellite signals received, decimal character format	8,8 stars
HDOP	Horizontal positioning accuracy ,10-meter character format, the smaller the value, the more accurate	0.9
speed	GPS speed in km/h,10 character format	54
course	The angle of direction of movement, in metric format, in	86

	decimal character format	
altitude	Altitude, in meter ,10-meter character format	76
odometer	Accumulated total mileage, in meter ,10-meter character format	326781
MCC|MNC|LAC|CI	Base station information ,'|' used to partition each data symbol; MCC,MNC：10 Input Character Format LAC,CI：16 Input Character Format	460|0|27 B3|0 EA7 MCC 460 per cent; MNC 0; LAC x27B3;0 CI x0EA7;0
CSQ-quanl ity	GSM signal value ,0-31,10 character format	27
system-sta	Device system working state ,8-bit 16-bit character format, each bit represents a working state: Bit0：IP GPRS connection status ,1= connection ,0 disconnect Bit1： reservations Bit2：GPS positioning state ,1= positioning ,0= no positioning Bit3： external power connection status ,1= connection ,0= disconnect Bit4： reservations Bit5： stop state ,1= stop ,0= move Bit6： fortification status ,1= fortification ,0= withdrawal Bit7： reservations Bit8~bit31： reservations	0000000F
in-sta	Input state ,2-bit 16-character format, each bit represents a working state: bit[0]–input1 state ,1= trigger ,0 non-trigger bit[1]–input2 state ,1= trigger ,0 non-trigger bit[2]–input3 state ,1= trigger ,0 non-trigger etc.;	02 input2 is trigger state, other input is non-trigger state
out-sta	Output state ,2-bit 16-character format, each bit represents a working state: bit[0]–output1 state ,1= activated ,0= inactive bit[1]–output2 state ,1= activated ,0= inactive bit[2]–output3 state ,1= activated ,0= inactive etc.;	01 output1 active
ext-V|bat-V|ad1-V|... ext-V|bat-V|ad1-V|adn-V ... 2	Voltage value, for the V*100 value of 16 input character format; '|'symbols used to separate each data; ext-V： external supply voltage; bat-V： internal battery voltage; ad1-V ...and-V： the voltage value ad1...adn the corresponding AD input port, different devices support different number of AD input ports;	04E2|018 C|01 C8C|0000 The external supply voltage is 0 x04E2=1250, V=1250/100=12.50 V; The internal battery voltage is 0 x018C=396, V=396/100=3.96 V; AD1 input voltage is 0 x01C8=456, V=456/100=4.56 AD2 input voltage is 0 x0000=0, V=0/100=0

		the device supports two AD input ports.
checksum	Packet checksum ,2-bit 16-character format, checksum all previous data *{&&<pack-no><pack-len>, <ID>, 000, <alm-code>, <alm-data>, <date-time>, <fix_flag>, <latitude>, <longitude>, <sat-quantity>, <speed>, <course>, <altitude>, <odometer>, <MCC|MNC|LAC|CI>, <CSQ-quanlity>, <status>, <in-sta>, <out-sta>, <bat-ad|ext-ad|ad1|. The accumulation and calculation results of <bat-ad|ext-ad|ad1|adn>}.*	46
r\n	packet terminator for <CR><LF>	r\n

4.SMS instruction format

SMS command format (data from mobile phone to device):
<password>,<cmd-code<password>,<cmd-code<password>cmd-data<password>
SMS upload command format (data from the device to the phone):
<cmd-code>,<cmd-data<cmd-code>
Description:
A comma (,) is a symbol used to separate each data item without spaces before and after the comma.
password： SMS instruction password ,4-bit characters, can be composed of any number, letter, symbol. The default is 0000.
cmd-code： command code.
cmd-data： command data content, see the description of each command in the following protocol.
If not specified, the multibyte value in the cmd-data is in large-end alignment format.

6. Instruction List

000- Device Location Packet Upload	
Model support	GPRS
Order sent	See above GPRS event packet format
Instruction description	01 location packet upload, after uploading the device automatically delete the data
Instruction Response	No
Examples of instructions	See above GPRS event packet format
Remarks	

100 – Set the server GPRS parameters	
Model support	GPRS/SMS
Order issued	100, mode,IP,Port
Instruction description	01 mode: GPRS connection mode, Turn off the GPRS connection, when any GPRS event does not generate and post the server; 1- TCP connection mode; 2- UDP connection mode; 02IP: server IP address or domain name, up to 32 characters; 03Port: server port ,10-character format, range value :2~\65534;
Instruction Response	100,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	100,1, istartracker.com,8011
Remarks	

102- Set GPRS time interval for uploading	
Model support	GPRS/SMS
Order issued	102, time
Instruction description	01 time: Time interval for regular upload. Unit is seconds, maximum 65535 seconds. 02 Default is 60 seconds
Instruction Response	102,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	102,10 Set timing upload time interval to 10 seconds;
Remarks	

109- Setting APN parameters	
Model support	GPRS/SMS
Order issued	109, APN,APN_User_Name,APN_Password
Instruction description	Leave the settings blank if APN do not APN the user name and APN password; Please confirm the correct SIM card APN information to the local network operator.
Instruction Response	109,<result> result: setting the result of the instruction reply; OK – instruction set successfully;

	Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	109, internet,internet,internet 109, CMNET
Remarks	

123- Setting up a speeding alarm	
Model support	GPRS/SMS
Order issued	123, speeding
Instruction description	km/h. speeding: overspeed alarm threshold Value range 0~255 km/h,0 turn off the function; default is 0. Speeding alarm can only work normally in real-time mode.
Instruction Response	123,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	123,100 100 km/h overspeed alarm
Remarks	

600- Set Short Message Instruction Password	
Model support	GPRS/SMS
Order issued	600, password
Instruction description	01 password: SMS instruction password ,4-digit characters, can be composed of any number, letter, symbol; default is 0000.
Instruction Response	600,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	600, PW37 PW37 to set SMS instruction password
Remarks	

601 – Time zone for setting SMS time	
Model support	GPRS/SMS
Order issued	601, time
Instruction	time: time zone, in minutes, value range-720~720, default UTC+0;

description	When the time zone is set, the time in the SMS data will use the time of the time zone; 03GPRS time in the data UTC+0 time, not set.
Instruction Response	601,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	601,480 Setting SMS Time Zone to UTC+8 601,-480 Setting SMS Time Zone to UTC-8 Time Zone
Remarks	

612- Initialization parameters	
Model support	GPRS/SMS
Order issued	612, flag
Instruction description	flag: 01 =1: initialize parameters other than IP、Port、APN、GPRS interval and other GPRS parameters; =2: Initialize SMS password is 0000; =3: initialize all parameters.
Instruction Response	612,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	612,3 Initialize all parameters.
Remarks	

700- Query Work Mode	
Model support	GPRS/SMS
Order issued	700
Instruction description	01 Query device mode; The 02 mode parameter instructions refer to the following settings mode instructions. The 03 device can only exist in one of four modes. Setting a new working mode will override the previously set mode.
Instruction Response	01 If the instruction fails, reply: 700,<result> result: setting the result of the instruction reply; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.

	If the instruction is successful, reply mode parameters.
Examples of instructions	700
Remarks	

700- Set Smart Mode	
Model support	GPRS/SMS
Order issued	700,1, time1,time2,time3,sen,time4,time5
Instruction description	01 1 for intelligent power saving mode, default to intelligent mode; parameter default to 330,120,805,30; 02 time1: vibration wake-up working hours in minutes, the value range is [2,65535]; time2: vibration interval wake-up time, when the equipment dormant, detect vibration, the fixed time interval wake up once, the unit is minutes, the value range is [1,65535]; when the setting time is less than 10 minutes, detect vibration immediately wake up work, when the setting time is more than 10 minutes, wake up at a regular interval; time3: static interval wake-up time, in the equipment sleep, continuous static state, the fixed time interval wake up once, in minutes, the value range is [1,65535]; sen: vibration threshold, the value range is [30,255], the smaller the value, the more sensitive the vibration wake-up; time4: vibration detection time, in seconds, the value range is [1,255]; time5: static detection time, in seconds, value range [1,255];
Instruction Response	700,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	700,1,3,30,120,80,5,30 Answer :700, OK
Remarks	

700- Set Time Point Mode	
Model support	GPRS/SMS
Order issued	700,2, RT,time1,time2,...time24
Instruction description	01 2. Working mode at the moment; 02RT: to the time point wake up after the working time, the unit is minutes, the value range is [1,255]; time1,03 time2,...time24: moment, wake up, Awakening has nothing to do with vibration, hh: mm, time format time to be set to UTC+0; For example, China's time zone is +08:00, China time AM 09: 00 wake up, UTC time is 01:00. For example, the American time zone is -4, American time AM 09: 00 wake up, UTC time is 13:00. Up to 24 time points can be set;

Instruction Response	700,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	700,2,3,8:00,9:00,10:30 Answer :700, OK
Remarks	

700- Set Real-Time Mode	
Model support	GPRS/SMS
Order issued	700,3
Instruction description	01 3 For real-time mode of work, there is no sleep in this mode, has been according to the fixed time interval upload data work; The upload time interval is set by instruction 102. The default is 60 seconds.
Instruction Response	700,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	700 Answer :700, OK
Remarks	

700- Set Interval Wake-up Mode	
Model support	GPRS/SMS
Order issued	700,4, time1,time2
Instruction description	01 2. Working mode at the moment; 02 time1: Regular wake-up working hours in minutes, the value range is [1,255]; time2: timing hibernation time, in minutes, the value range is [1,255];
Instruction Response	700,<result> result: setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	700,4,3,30 Answer :700, OK
Remarks	

701- Query device parameters	
Model	GPRS/SMS

support	
Order issued	701
Instruction description	Query device parameters, including IP、 port, SN、 network parameters;
Instruction Response	01 If the instruction fails, reply: 701,<result> result： setting the result of the instruction reply; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed. If the instruction is successful, reply device parameter ,701,<Parameter>. For example: :: T：103.243.183.121, 8011* A：cmnet,* N：021104023195429!* M6,, I N1, 60, 60, 0,10, R1, Q25, G1, 4, T+0, 8, E0,P1,1,PT60_20200810_2G_1172__General Description: :: T： 103.243.183.121,8011T —TCP, followed by IP and ports :: A： cmnet,,A--APN :: N： 021104023195429N-- equipment ID, IMEI by default M6M6--6 on line N1,60,60,0,10,N1 is the parameter of the reporting interval mode (the actual working mode is based on 700 instruction query)6060 is the reporting interval, unit: seconds 0 reserved 10 for corner angle R1R1--- Network Registration Status Q25 25- CSQ signal value G1,4,1-- positioning ,4 satellites T+0,8,0 for data upload time zone ,8 for SMS time zone E0,P1,1, reserved PT60_20200810_2G_1172 version number
Examples of instructions	701 701, :: T： 103.243.183.121, 8011* A： cmnet,* N： 021104023195429,* M6, N1, 60, 60, 0,10, R1, Q25, G1, 4, T+0,8, E0,P1,1,PT60_20200810_2G_1172T+General
Remarks	

702- Remote Upgrade	
Model support	GPRS/SMS
Order issued	702, IP,Port
Instruction description	01IP： upgrade server IP address or domain name, up to 32 characters; 02Port： upgrade server port, decimal character format, range value :2~\65534; When the 03 upgrade is complete, all parameters remain the same as before the upgrade. There will be a dedicated version of the IP and PORT. there is an upgrade requirement
Instruction Response	702,<result> result： setting the result of the instruction reply;

	OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	702 Answer :702, OK
Remarks	

910- Restart the device or module	
Model support	GPRS/SMS
Order issued	910, operation
Instruction description	operation：01 =1: Restart GSM module =2: Restart GPS module =3: Restart the device
Instruction Response	910,<result> result： setting the result of the instruction reply; OK – instruction set successfully; Unsupport – does not support the directive; Failed – instruction format or password error, setting failed.
Examples of instructions	910,3 Restart the device
Remarks	

Appendix A - Alarm Event Code and Alarm Characters

Here is the corresponding table for the alm-code and alm-data:

alm-code	alm-data	SMS Alarm Head String	Description
0	NULL	Interval	Time interval tracking
20	NULL	Low Battery	Internal battery low
22	NULL	Speeding	Over Speed alarm
32	NULL	Power On	Device Power On
55	NULL	dismantling	Anti Disassembly Alarm