Resiont Terminal Communication Protocol of Resiont Product

This communication protocol based on the TCP/IP protocal, using ASCII coding mothod. Please pay attention to the case of the 26

1. Basic Description

1. Identifier: "," is used as the separator of different parts in one message; ";" is is used as the terminator of one message.

2. Device ID: IMEI number(15 digits) is used as the device ID.

3. Device log in server process: After IP and port set properly, the device will send log in request message to server when log in command received, then waits for the reply message sent by server. If reply message received, log in process finish.)

4. The heartbeat packet : To meantain the device's online status, the device will send a heartbeat packet containing the "ID number" to the server per minute. The server will give a reply message to the device immediately eachtime it receives the heartbeat packet. Afer sending the heartbeat packet, if the devive receive no heartbeat reply message in 2 minutes, it will try to log in the server again immediately.

5. Positioning Information: Device will report positioning information to it's server according to the command it receives. Basicly, the positioning information reported will be the GPS positioning information data. When no valid GPS signal received by the tracker device, it will try to locate itself by GSM/GPRS network. Then the positioning information reported will be the GSM base station positioning information data.

6. Alarming information: Alarming information is used to tell server/master some abnormal status of the device. Different alarming information will be reported to the server when triggered. There are many kinds of alarming informatoin, please refer to " report types".

7. Config setting: The server could send config information command to the device, in order to set the device's working config parameters, such as alarming parameters, time zone, etc.

8. SMS command: Users could send SMS messages through authorized mobile phones to set/reset the device's config parameters. In SMS Monitoring mode, when alarm is triggered, the device will send alarming information to authorized mobile phones. If none authorized phone number exists, some alarming parameter setting could not be done.

A. After receiving the log in command, the device will send log in request message to the server, then waits for server's reply message. If reply message received, log in process finish. Afer that, the server will send time setting command automatically. One command example: 【*,imei:353552045388957,TIME,140114055835】. In this command ,the timing format is YY-MM-DD;HH-MM-SS. If the device has captured GPS signal, this time setting command will be ignored by device and the GPS timing will be used by device. If no GPS signal captured , the time setting command will be accepted by device and the server timing will be used by the device.

B. Once the connection between the device and the server has been lost, the device will try to log in the server after 5 seconds, after that, if this time log in fails again, the device will try to log in after 120 seconds ... The log in will perform like this in turn. In the meantime, if there's any positioning information need to be reported, the tracking trace will be recorded in the TF card and sent to the server whenever log in successful. If no SD card inserted, only the latest 40 trace will be recorded.

C. The device could receive and handle the SMS command whether it's in log-in/log off status. However, if it's in log-in status, when any alarm triggled, the alarming information will only be sent to the server and will not sent directly to the authorized telephone through SMS messages.

2.Logging in the server, Locating informations related			
Logging in	Log in Request		##,imei:353552045388957,A;
	Server Reply		**Server vertion: SERV** **Stand-alone version: LOAD**
Heartbeat and Reply	Heartbeat Packet		**Server vertion:mei:35355204538895** **Stand-alone version: 353552045388957**
	Heartbeat Reply		ON
Locating Information Report	GPS Locating	Exg.	imei:353552045388957,tracker,140114055835,28.1,F,358.0,A,4003.37021,N,11619.50915,E,0.1,,109.9,;
		Format	【Device ID】【Reporting Type】【time】【powerSupplyStatus. AC status】【Locating Type】【Course】【GPS status】【Latitude】【southern/northern hemisphere】【Longitude】【East/West Longitude】【Speed】【Altitude】【Terminator】
	LBS Locating	Exg.	imei:353552045388957,tracker,120601102544,28.1,L,,,,11B1,,E32B,,,;
		Format	【Device ID】【Reporting Type】【Time】【PowerSupplyStatus. AC status】【Locating Type】,,,【Lac】,,【CallID】,,,【;】

This protocal supports both GPS locating and LBS locating. If GPS signal exists, GPS locating is used ; If no GPS siganal, the device will report LBS signal to the server.

2.1 Logging in the server			
Logging in Message	Exg.		##,imei:353552045388957,A;
	Format		【Identifier】【Device ID】【Logging in Type】【Terminator】
	Message Interpret	Identifier	The Identifier of logging in is ##
		Device ID	imei:353552045388957
		Logging in Type	A
		Terminator	; is used as the terminator of logging in.
Logging in Reply Message	Server's Reply	Server Reply	Server vertion Reply: SERV Stand-alone version Reply: LOAD (Reply only when log in successful)

2.2 Heartbeat Packet		
Heartbeat Packet Message	Exg.	Server vertion:mei:35355204538895 Stand-alone version: 353552045388957
	Format	15 digits(IMEI number) is used , that is ,the device ID.
	Server's Reply	ON

2.3 Locating information report message, when GPS signal exits			
Device status reported to the server	Exg.		imei:353552045388957,tracker,140113084423,28.1,F,358.0,A,4003.37332,N,11619.50117,E,0.0,,96.0,;
	Format		【Device ID】【Reporting Type】【time】【powerSupplyStatus. AC status】【Locating Type】【Course】【GPS status】【Latitude】【southern/northern hemisphere】【Longitude】【East/West Longitude】【Speed】【Altitude】【Terminator】
	Message Interpret	Device ID	imei:353552045388957
		Reporting Type	Refer to the following part 3 description
		Time	YY-MM-DD ; H-M-S;
		PowerSupplyStatus. AC status	PowerSupplyStatus using 2 digits, ACC status using 1 digits. For example: 28.1, 28 means the remaing battery percentage is 28% , 1 means ACC on, if 0, means ACC off.
		Locating Type	F: GPS locating ; L: GSM basestation locating.
		Course	GPS course data, range 0.0 ~ 360.0
		GPS Status	A: GPS siganl available
		Latitude	4003.37332 , data format is ddmm.mmmmm ;
		southern/northern hemisphere	N : northern hemisphere; S : southern hemisphere
		Longitude	11619.50117 , data format is dddmm.mmmmm
		East/West Longitude	E : East Longitude ; W : West Longitude
		Speed	0.0 : device's current speed is 0.0 Unit: Km / h.
		Altitude	96.0 means the current altitude is 96m.
		Terminator	; is used as the terminator.

2.4 Locating information report message, when no GPS signal exits			
Device status reported to the server)	Exg.	imei:353552045388957,tracker,120601102544,28.1,L,,,11B1,,E32B,,,;	
	Format	【Device ID】【Reporting Type】【Time】【PowerSupplyStatus. AC status】【Locating Type】,,,【Lac】,,【CallID】,,,【;】	
	Message Interpret	Device ID	imei:353552045388957
		Reporting Type	refer to the protocal basic description, by The 3 section
		Time	YY-MM-DD ; H-M-S;
		PowerSupplyStatus. AC status	Format for 3 Arabia digital. example: 28.1 in front of the 28 battery is shown as a percentage. After the decimal point 1 expressed as ACC, 1 as ACC, 0 as ACC off
		Locating Type	F: GPS locating ; L: GSM basestation locating.)
		LAC	
		CallID (CallID)	
		Terminator	; is used as the terminator.

2.5 Command sent to the device by the server			
Command sent to the device by the server	Example: Set the alarming speed to 60Km/H	**,imei:353552045388957,H,060	
	Format	【Identifier】【Device ID】【Downlink config command】【Parameter】	
	Message Interpret	Device ID	** As the start symbol (The Identifier of config command is **)
		Device ID	imei:353552045388957
		Downlink config command	Refer to the protocal description, by The 4 section.
		Parameter	If any config parameter exits, will be list here; if none, ignore this part.

3.Uplink Reporting Type		
GPS locating	imei:353552045388957,tracker,140114055835,28.1,F,358.0,A,4003.37021,N,11619.50915,E,0.1,,109.9,;	
LBS locating	imei:353552045388957,tracker,120601102544,28.1,L,,,1009,,da58,,,;	
Function	Message Code	Description
	tracker	Location information upload : to report the device's location information to the server.
	help me	SOS help Alarm: Press the SOS button will triggle this alarm, the tracker device will send alram report message to the server in 3 minutes interval repeatedly.
	low battery	Low battary alram: when the device's battary reamaining power less than 10%, this alarm will be triggled, to imdicate the device to be power-off, and the tracker device will send this alram report message to the server in 3 minutes interval repeatedly.
	sensor alarm	Sensor shacking alarm.
	move	Moving alarm.
	speed	Overspeed alram.
	door alarm	Alarm when the vehicle's door open.
	acc alarm	Alarm when the ACC is on.
	ac alarm	External power supply cut off alarm.
	stockade	the device is out of the electronical fence alarm.
	lf	Configuration of enabling the safe guard failed reply.
	lt	Configuration of enabling the safe guard successful reply.
	sdf	Configuration of SD card successful reply.
	sdt	Configuration of SD card failed reply.
	jt	Cut off the Oil and Power System setting successful.
	kt	Resume the Oil and Power System setting successful.
	jf	Cut off the Oil and Power System setting failed.
	dt	Cancelling Auto tracking continuously successful.
	et	Cancel the current alarm successful.
	gt	Moving alarm setting successful.
	gf	Moving alarm setting failed.
	ht	Overspeed alram setting successful.
	mt	Disable the safe guard successful.
	ot	Setting an electronical fence successful.
	on	Setting an electronical fence failed.
	pn	Deleting the electronic fence failed.
	pt	Deleting the electronic fence successful.
	it	Timezone setting successful.
	snt	Cancelling SD card successful.
	snn	Cancelling SD card failed.
	gct	To cancel the Moving alarm successful.
	hct	To cancel the Overspeed alram successful.

4. Downlink Config Command

Downlink command Tpye	Downlink Command code sent by the server	Reply message sent by the device
	,imei:353552045388957,B**	【Indetifier】【Device ID】【Downlink Command Code】【parameter】
1. one time tracker	B	The device will report locatiing information for one time.
2.Auto tracking continuously	C,10S	Device will report the tracking information automaticly and continuously. The time interval unit could be S(sceond), M(minute),H(hour). 1、**,imei:359586018966098,C,10s The locating info will be reported to the server every 10S. 2、**,imei:359586018966098,C,5m The locating info will be reported to the server every 5M. 3、**,imei:359586018966098,C,10h The locating info will be reported to the server every 10H.
3.Disable auto tracking	D	Disable auto tracking.
4.Disable current alraming	E	Disable the current alarming. However, if triggled again, it will be reported to the server again.
5.Setting Moving alarm	G	Setting Moving alarm
6.Setting overspeed alarming	H,060	After this setup, the speed alarm will be triggered and reported to the user if the vehicle's speed exceeds the speed limit. "Speed limit" in command is an integer value (30~300) with the unit km/h.
7.Setting timezone	I,+8	There are 24 timezeones in the world: 12 eastern timezones, 12 western timezones. Positive number is used for eastern timezone, negative number is used for western timezone. For example, China belongs to the 8th eastern timezone, that is, +8. Pay attention the timezone number may not be an integer. For example, Afghan's timezone is +4:30, that is +4.5.)
8.Cut off the oil supply	J	Cut off the oil supply
9.Resume the oil supply	K	Resume the oil supply
10.Enable safe gard mode	L	If this command setting successful, the following alarms will be activated: Moving alarm, ACC on alarm, door open alarm, shacking alarm.
11.Disable the safe guard status	M	Disable the safe guard status
12.Setting an electronical fence	O,40.071586,116.337197;40.061355,116.359144AT+	Electronic fence fence set: rectangular coordinates for the upper left, lower right corner of the. Latitude must be in dd.mmmmmm format (2 bit integer, decimal 6), longitude must be ddd.mmmmmm format (3 bits before the decimal point, 6 digits after the decimal point.) otherwise analytical error.
13.Disable an electronical fence	P	Disable the setting electronical fence
14.Image request	V	Get the current image.
15.Upload tracking record data	QT,2014010810,2014010908	Upload the 2014.01.08 10am ~ 2014.01.09 8am tracking record data onto the server.
16.Upload someday's tracking record data	Q,20140108	Upload the day's (2014.01.08) tracking record data onto the server.
17.Terminate tracking record data uploading	S	Terminate tracking record data uploading
16.Device reset	R	Device reset.
17.Device config reset	RS	Device cinfig reset to the factory setting. IP config and the connection with the server will remain.
18.Disconnect with the server	N	Disconnect the connection to the server ,return to SMS control mode.
19.Enable low power mode	W	Enable GSM power saving mode.
20.Disable low power mode	Z	Disable GSM power saving mode.
21.Enable tracking record on SD card	SD	Enable saving tracking record onto the SD card, the default timing interval is 10s.
22.Disable tracking record on SD card	SN	Disable saving tracking record onto the SD card.
22.IP configuration	IP,192.168.1.1,8080	Change current IP config, disconnect anwith the server automatically.
23.Time setting	TIME,140114055835	Device time setting, the time format will be YY-MM-DD HH-MM-SS. If the device has captured GPS signal, this time setting command will be ignored by device and the GPS timing will be used by device. If no GPS signal captured , the time setting command will be accepted by device and the server timing will be used by the device.
24.Disable Current Move alram	DN	Disable Current Move alram.
26.add a new master	MA,13800138000	To add a new master telephone number(13800138000)
27.delete a master	MN,13800138000	To delete a master telephone number(13800138000).
28.To disable moving alarm	GC	To disable moving alarm
29.disable over speed alarm	HC	To disable the over speed alarm

5.SMS command

Attention : The "+" in all following commands means there is a blank space here in the short message , please do not type a real "+" character on your cell

Function	Command Code	Example	Format	Description
Initialization	begin	begin123456	begin+password	To initialize the configuration and reset the device. IP and APN settingwill not be initialized.
Change password	passwd	passwd123456 888888	passwd+password+space+new password	To change the password.Old password:123456;New password:888888
Add a new master telephone number	admin	admin123456 13800138000	admin+password+space+phone number	To add a new master telephone number(13800138000)
Delete a master telephone number	noadmin	noadmin123456 13800138000	noadmin+password+space+phone number	To delete a master telephone number(13800138000).
Query the device's ID.	imei	imei123456	imei+password	Query the device's IMEI Number.
Set timezone	timezone	timezone123456 8	timezone+password+space+time zone	To set the timezone to +8.
Start voice monitoring.	monitor	monitor123456	monitor+password	To start voice monitoring.
Switch to the SMS Monitor mode	tracker	tracker123456	tracker+password	To switch to the SMS Monitor mode.
connect to the server	gprs	gprs123456	gprs+password	To switch to GPRS Tracking mode and connect to the server.
Certain times locating	tn	tn123456 120 20	tn+password+space+time+space+items	To start locating 20 times and report the locating information to the authorized telephones. The time interval is 120s.
Unlimited times locating	tn	tn123456 123 ***	tn+password+space+time+space+items	To start tracking automatically and report the locating information to the authorized telephones. The time interval is 120s.
Stop locating	notn	notn123456	notn1123456	To stop locating
Tracking record	log	log123456	log+password	Record the GPS tracking onto the SD card. The record format is KML.
Disable tracking record	nolog	nolog123456	nolog+password	Disable tracking record
Enable moving alarm	move	move123456	move+password	To enable the moving alarm. If the device moves more than 200m, the moving alarm will be triggled and a short message will be sent to the authorized phone numbers.
Disable moving alarm	nomove	nomove123456	nomove+password	To disable moving alarm
Enable the over speed alarm	speed	speed123456 80	speed+password+space+spd	To enable the over speed alarm. The vehicle's speed limit is set to 80KM/h. If the vehicle overspeeds, this alarm will be triggled and a short message will be sent to the authorized phone numbers
Disable the over speed alarm	nospeed	nospeed123456	nospeed+password	To disable the over speed alarm
Set an electronic fence	stock	stock123456 12.3456871, 118.3456123 12.3668121, 118.6012345	stock+password +space+lat0,lon0+space+lat1,lon1	To set an electronic fence. [lat0] and [lon0] indicate the latitude and longitude of the start point (the top left corner of the Geo-fence) respectively, and [lat1] and [lon1] indicate the latitude and longitude of the end point (the bottom right corner of the Geo-fence) respectively.
Disable an electronic fence	nostock	nostock123456	nostock+password	To disable an electronic fence
Mask off the currently generated SOS request	no help	nohelp123456	nohelp+password	To mask off the currently generated SOS request.
To enable the safe guard.	arm	arm123456	arm+password	To enable the safe guard.
To disable the safe guard.	noarm	noarm123456	noarm+passwor	To disable the safe guard.
To enable the shaking alarm	shake	shake123456 1	shake+passwor+space+level	To enable the shaking alarm , alram level is 1.
To disable the shaking alarm	shake	shake123456 0	shake+passwor+space+0	To disable the shaking alarm.
Cut off the oil supply	stop	stop123456	stop+password	Cut off the oil supply
Resume the oil supply	resume	resume123456	resume+password	Resume the oil supply
To check the device's status.	check	check123456	check+password	To check the device's status.
To check the device's configuration	config	config123456	config+password	To check the device's configuration.

Set the IP address	ip	ip123456 123.123.12.13 9000	ip+password+space+ip address+space+port	To set the IP address to 123.123.12.13 and the TCP port to 9000.
To reset the IP address setting.	noip	noip123456	noip+password	To reset the IP address setting.
Set APN	apn	APN 123456 general.t-mobile.uk user pass	apn+password+space+apn name+space+user+space+ apn password	The setting of APN (Access Point Name) is different from country to country. The detail information of APN is beyond the scope of this manual. The device could get most country's APN automatically. Please contact your local GPRS network operator for more information about your local APN.In the example, the device's APN is set to general.t-mobile.uk.
Mask off current alarm	mask	mask123456	mask+password	Mask off the current trigged alarm
Enable low power mode	low	low123456	low+password	Enable low power mode
Disable low power mode	nolow	nolow123456	nolow+password	Disable low power mode
Query street address	address	address123456	address+password	To get the street address using LBS.
Force Siren Silent	Silent	silent123456	silent+password	Force Siren Silent
Resume Siren	Loud	loud123456	loud+password	Resume Siren
Audio record	audrec	audrec123456 20	sudrec+password+time	To record a 20 mins audio.
Get current temperature	humget	humget123456	humget+password	
Get current humidity	tempget	tempget123456	tempget+password	
Enable humidity alarm)	humset	humset123456 20	humset+password+space+p arameters	
Disable humidity alarm	humset	humset123456	tempset+password	
Enable temperature alarm	tempset	tempset123456 20	tempset+password+space+ parameters	
Disable temperature alarm	tempset	tempset123456	tempset+password	

6 SMS Reply Format

	Example	passwd ok with 888888 13-11-14 16:43	
	Format	【Command Code】【Exe status】【parameter】【Time】	
	Description	**Command Code**	In the example, passwd is the change password command code.
		Exe Status	"ok" means the command execution has been finished.
		Parameter	In the exanple, the new password has been set to 888888, so the parameter is 888888. If the command is not a config command, ignore this part.
		Time	The time format is YY-MM-DD HH-MM
	Error Response		If the given password is incorrect, the device will reply "password error"; If the given parameter is incorrect, the device will reply "format error"; The device will ignore any command with wrong commd format; If authorized telephone numbers has been set, any message from unauthorized telephone will be ignored.