

JT600A User Manual

Ver2.1



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I Preface

This Manual is the important part of product operation instructions. It describe product's electrical features, appearance, operations, and command. Those contents are introduced by organized words, products appearance and command parts are mostly on standard of this document. Everybody who establish own software system, or has interest to commands should take it as development guide. If you have any question or suggestion, please contact our sales team directly.

We will treat your question or suggestion seriously, and try our best to reply you.

II Version updates

No	Content	Date
1	Release document	2010-12-22
2	Add working mode P14,P18 command V1.1	2011-02-26
3	Edit 4.2 button operation and 4.3 working mode	2011-04-26
4	Edit 5.1 configure by PC set up software	2011-08-05
5	Edit 4.3 working mode	2011-10-19
6	Edit introduction of Configure by PC setting up software	2011-11-24
7	Use M35 GSM module Use UBLOX GPS module Redefinition of button function. Update to normal working mode and vibration mode two kinds modes. Add & delete some commands.	2014-12-02

III Product function

NO.	Function description
1	Data transmission mode(SMS/GPRS)
2	Real time track and control by SMS/GPRS
3	Track by time interval
4	Support 64 pieces geo fence (square)
5	Self geo fence (user defined geo fence)
6	Real time power monitoring
7	GPS and GSM Signal strength detecting
8	Support remote / PC setup setting
9	Low battery alert, SOS alert, enter/exit geo fence alert
10	Support solar panel charging
11	Inbuilt battery 1800mA
12	Flashlight function
13	Micro USB port & cable(charging, upgrading, configure)
14	Vibration detecting
15	RTC
16	Factory reset

IV Profile and description

4.1 .Profile





4.2. Button operations

There are 4 buttons, please refer to the following details:

Button	Operation	function
Power on/off	Press button in power off	Power on
	Press button 3 seconds in standard mode/ vibration mode with awaken	Power off
	Press the button once in vibration mode with awaken condition	Starting from this press time point, Terminal will work 10 minutes and then enter standby mode.
	Press button in vibration mode with sleeping condition	Terminal is awaken and works 10 minutes then go to sleep
CALL I	Press the button 3 seconds	Set hot point. The default radius is 300m, Radius can be modified by command P09. The next time hot point radius length is the same with last modified radius length. The terminal will send a geo fence information message to the first VIP phone number if the setting is successful.
CALL II	Press button once	Flashlight on/off
SOS	Press button 3 seconds	1. Send SOS alarm to first VIP number 2.SOS light blinking

4.3 Working mode

ID	Mode name	Mode instruction
1	STANDBY	GSM and GPS work in normal, receive/send SMS
2	VIBRATION	<p>Vibration wake-up, 10min after the latest vibration, it will go back sleep. Tracking period, GSM and GPS work in normal, but both shut down when sleep.</p> <p>Pls notice the uploading time interval has to <10mins because we've set the working time of an wake up is 10 min, Or else, it will not be able to receive data.</p>

V Fist use

5.1 Install SIM card

Make sure SIM card has enable the GPRS and SMS function. Insert SIM card into JT600A slot and it power on by itself.

5.2 Charging

Normal status, full charging need 5 hours. Once full charged, Indicator'CH' will turn to yellow.

5.3 LED indicator

type	color	Status instruction
GSM indicator	Green	<p>(1) fast flash, blinking 10 times in one sec: GSM signal good, device has been communicate with server and in uploading data</p> <p>(2) blinking every 3 sec : GSM signal good, but not able to communicate with the server, pls check device parameters and whether sim card has enabled GPRS network</p> <p>(3)blinking every 1 sec: No GSM signal, or GSM module can't recognize SIM card, pls other SIM card.</p>
GPS indicator	Blue	<p>(1) GPS locating,blinking every 10 sec;</p> <p>(2) GPS not locating, blinking every 3 sec ;</p> <p>(3) Module broken, no flash</p>
Power indicator	Yellow	low battery, blinking every 3 sec
Flashlight indicator	White	LED high effective light

Charging indicator	Red/Yellow	Red when charging; Turn to yellow when full charged.
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5.4 VIP number function and authority :

VIP number authority list:

VIP no.	Function detail
1	Under SMS channel , responsible for receiving locating data; Under GPRS channel, responsible for receiving requested locating data; Sending/receive command; Receive Alarm data.
2	SMS channel query current location; send and receive command.
3	SMS channel query current location; send and receive command.
4	S SMS channel query current location; send and receive command.
5	SMS channel query current location; send and receive command.

5.5 Computer configure software

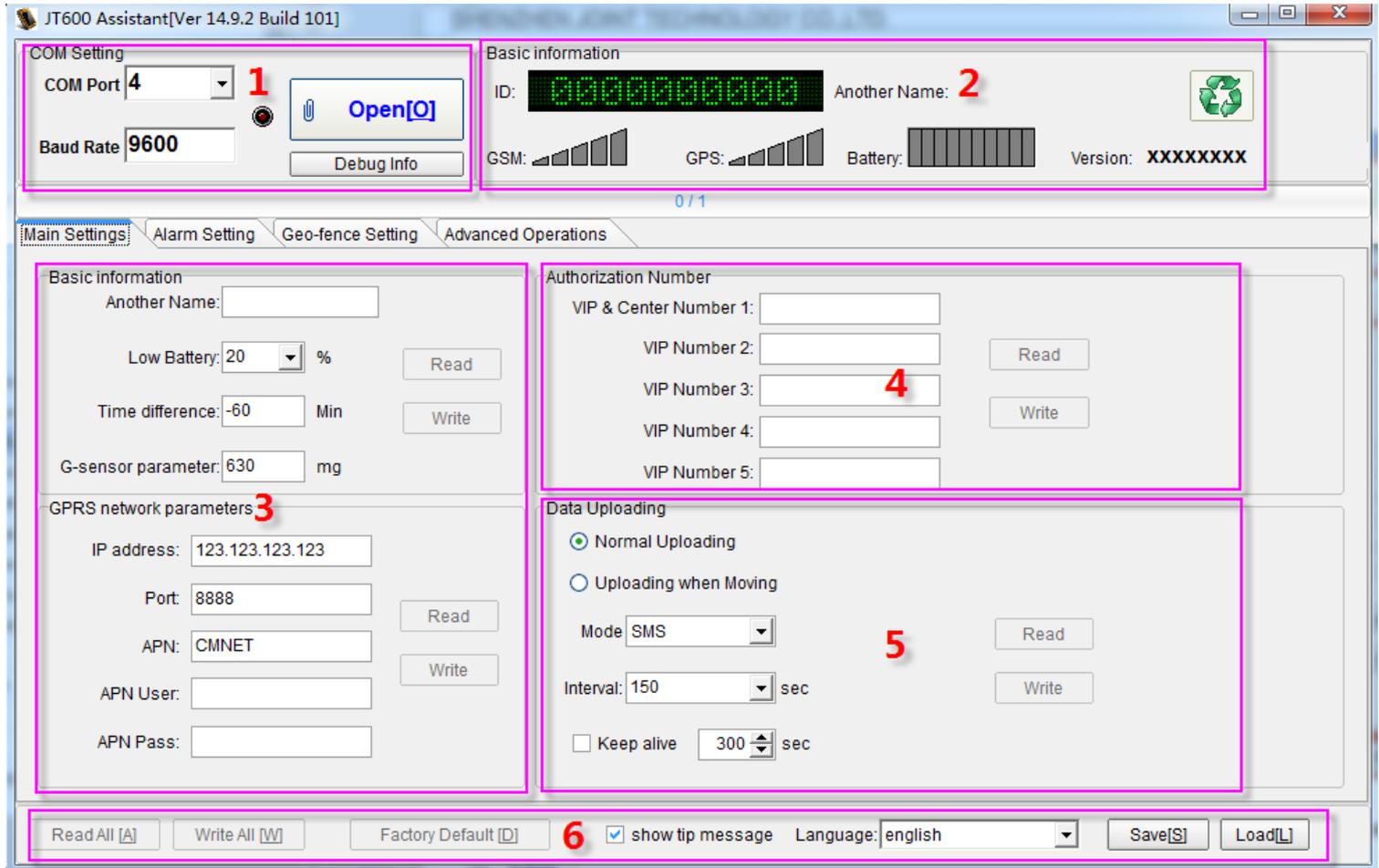
Please install the Micro-USB configure cable driver, and then run the JT600A configure software "JT600AM35Cfg.exe"

Note:

If you open it in a Windows 7 system, pls right click the software icon and click 'running as Administrator'.

Otherwise, you will not able to see Com port on it.

5.5.1 Main Interface Instructions



1 insert Micro USB configure cable to , Configure software automatically detect com port number , click



2 click button  , read basic info of JT600A, eg: ID:3140210001 firmware version: 600A_20141127,GSM、GPS、 battery info

3 basic info setting. In this interface you can set name, low battery alert value, time difference, G-sensor parameters and IP ,port ,address.

PS: APN is access point name at local, for example CMNET is Chinamobile’s APN. UNINET is China Unicom’s APN. APN user and password only need to fill when it’s necessary. Pls ask your Sim card provider.

4 Configure VIP numbers to receive the alarm message.

5 Set data uploading mode. 2 option: Normal uploading ; Uploading when moving mode: TCP(GPRS) ; SMS(message) .

Interval is the uploading time interval.

For TCP, 5 to 65535 seconds; For SMS, 150 to 65535 seconds.

6 Configure software tools quick launch button.

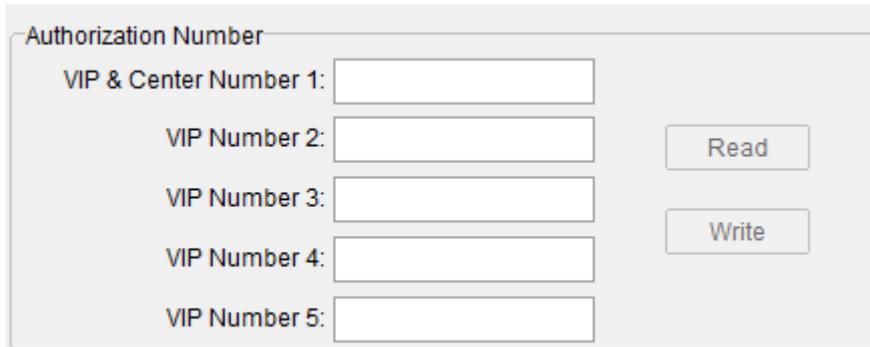
Real all/Right all parameter in this whole interface.

show tip message it will show tip message by pop-up window after choose it.

Language: Set initial language of this software.

can save the edited parameters to edit same data for next device. Click load it can show all the saved parameters.

5.5.2 VIP number initial setting.



Authorization Number

VIP & Center Number 1:

VIP Number 2:

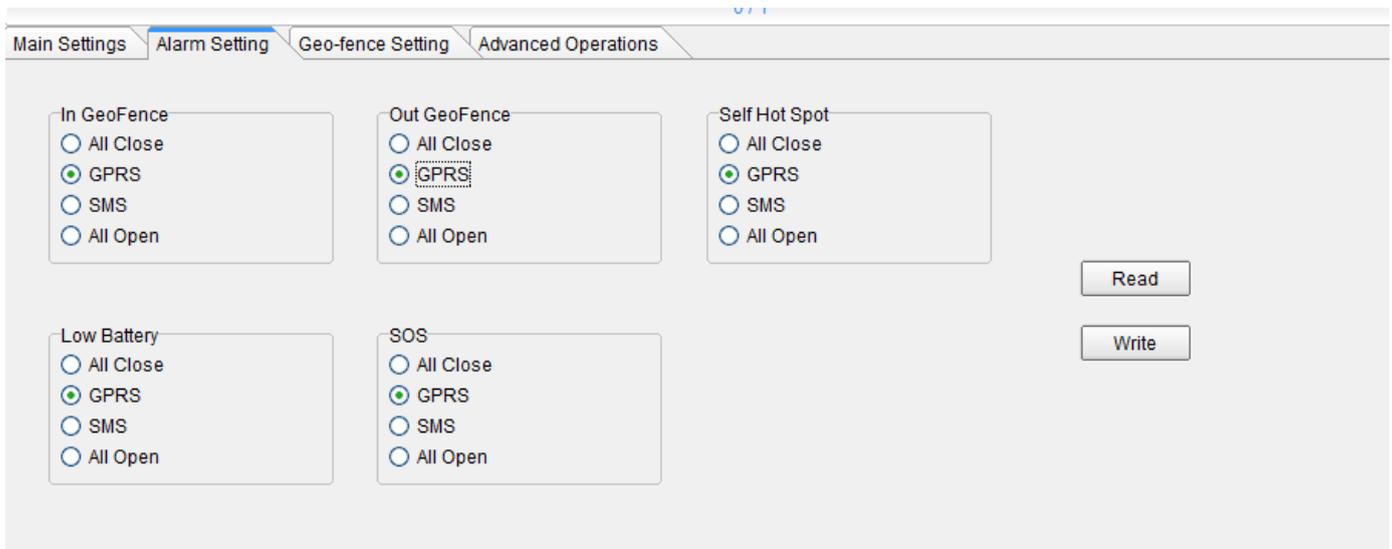
VIP Number 3:

VIP Number 4:

VIP Number 5:

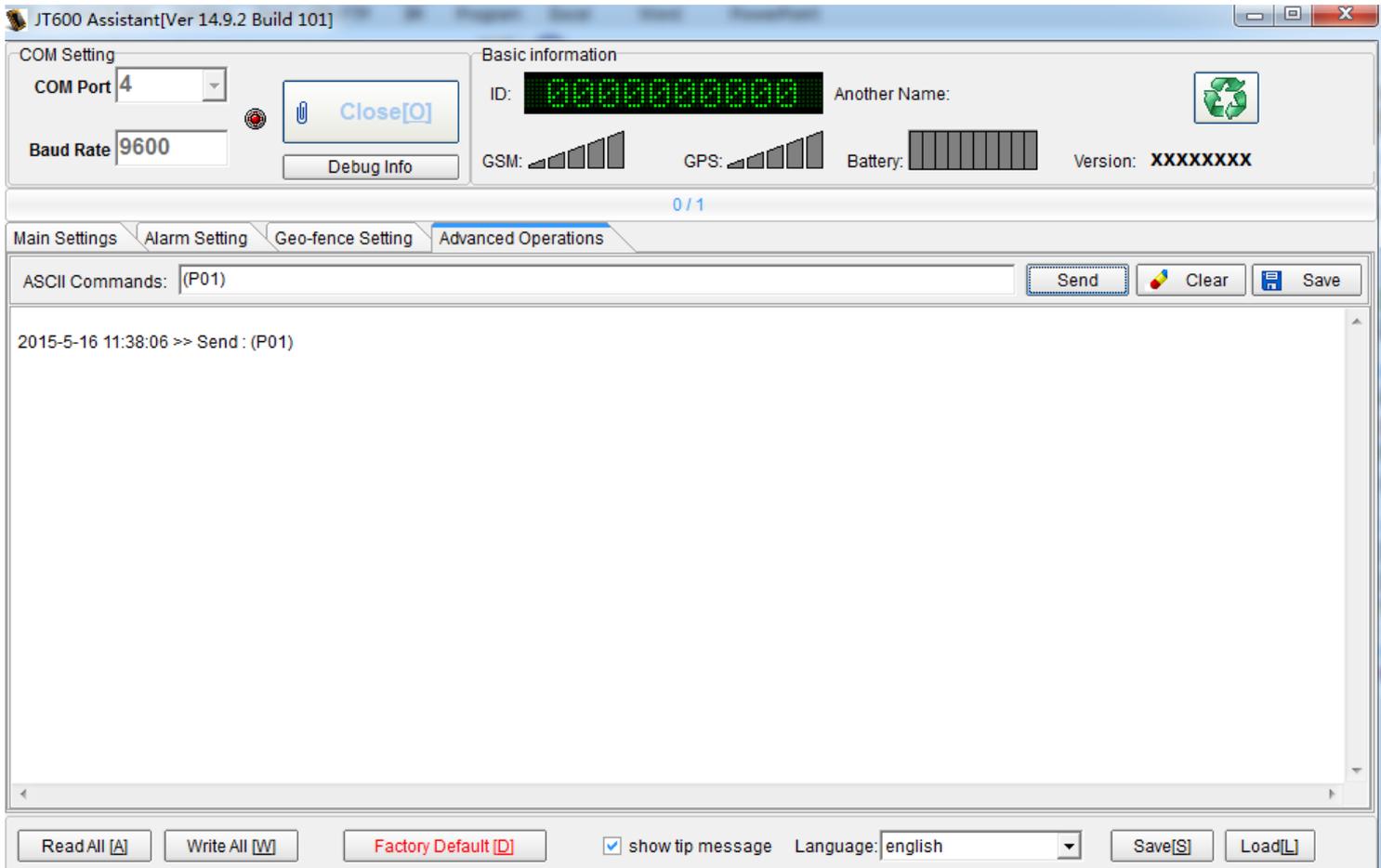
No	parameters(eg.)	Detail
VIP1	13800138000	Under SMS channel , responsible for receiving locating data; Under GPRS channel, responsible for receiving requested locating data; Sending/receive command;
VIP2	13954525214	SMS channel query current location; send and receive command.
VIP3	13642556565	SMS channel query current location; send and receive command.
VIP4	18625255228	SMS channel query current location; send and receive command.
VIP5	18825258525	SMS channel query current location; send and receive command.

5.5.3 Alarm Switch



Note: this picture's setting means all alarm types only triggered the message via GPRS, but no SMS alarm.

5.5.5 Advanced Operations



This interface aims to the use of customers who are familiar with the protocol of JT600A, you could send any **ASCII commands** through this interface comparing with the protocol manual of JT600A.

Click "Send" button to write command to JT600A;

Click "Clear" button to remove data;

Click "Save" button to save data.

5.6 Message setting and usage

5.6.1 Command structure and lists

SMS command structure:

No.	Item	Length(Byte)	Description
1	Packet head	1	Fixed "("
2	command	3	Such as P03 ect...
3	Separative sign	1	","mark
4	parameter	N	"," to separate the various parameters
5	Packet end	1)

Command List:

Command Code	Description	Example
P01	Enquire the firmware version	(P01)
P02	Enquire current position	(P02)
P04	Enquire/Set Data uploading interval	(P04,1,60,1) Parameter[1]: 1 means setting, 0 means enquiring Parameter[2]: 60 means 60 seconds ,uploading every 60 seconds Parameter[3]:1 1 indicates TCP ,0 indicates SMS
P05	Enquire/Set GPRS network parameters(IP address, Port)	(P05,1,211.154.134.212,8000,CMNET,,) Parameter[1]: 1 means setting, 0 means enquiring Parameter[2]: 211.154.134.212 means Server IP address Parameter[3]: 8000 means TCP port Parameter[4]: CMNET means APN name .access point name at local. CMNET is example in china. Parameter[5]: APN user APN username. If it's blank. no need input it. Parameter[6]: APN pass APN password. If it's blank. no need input it.
P07	Enquire/Set Working mode	(P07,1,1) /

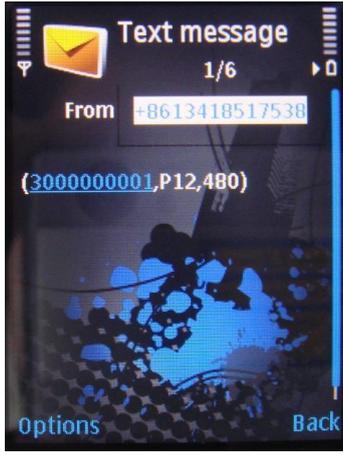
		<p>Parameter[1]: 1 means setting, 0 means enquiring</p> <p>Parameter[2]: 1 indicates standard mode 2 Vibration mode; Word when shaking, if no vibration for 10 minutes, it will enter a dormant state. GSM will close when enter into dormant state. Could be awakened</p>
P08	Enquire/Set Geo-fence	<p>(P08,1,1,11323.1234,2312.2321,11326.4312,2308.1233,area 1)</p> <p>Parameter[1]: 1 means setting, 0 means enquiring</p> <p>Parameter[2]: 1 means Geo-fence ID.JT600 supports 64 fences.</p> <p>Parameter[3]: 11323.1234,2312.2321,11326.4312,2308.1233 means 11323.1234 left top longitude, 2312.2321 left top latitude, 11326.4312 right bottom longitude, 2308.1233 right bottom longitude. It's a rectangular region.</p> <p>Parameter[4]: area 1 means Geo-fence name.</p>
P09	Enquire/Set temporary fence	<p>(P09,1,300)</p> <p>Parameter[1]: 1 means setting, 0 means enquiring</p> <p>Parameter[2]: 300 indicates 300 meters.</p> <p>Under the condition of no GPS signals, set up temporary fences, JT600A will set up a circular fence, parameters of radius 2.</p>
P10	Enquire/Set voltage alarm parameter	<p>(P10,1,20)</p> <p>Parameter[1]: 1 means setting, 0 means enquiring</p> <p>Parameter[2]: 20 indicates battery 20%, when the power is less than 20%, the equipment will produce low voltage alarm. And equipment of the power indicator light is red, once every 3 seconds flicker. The default value is 20.</p>
P11	Enquire/Set VIP numbers	<p>(P11,1,1,13910102345)</p> <p>Parameter[1]: 1 means setting, 0 means enquiring</p> <p>Parameter[2]: 1 means the first VIP number(CALL I).JT600A supports 5 VIP numbers.</p> <p>Parameter[3]: 13910102345 means Cell phone number</p>

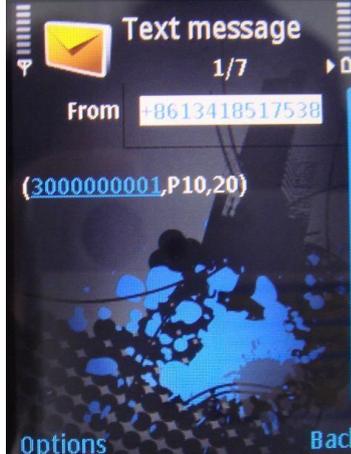
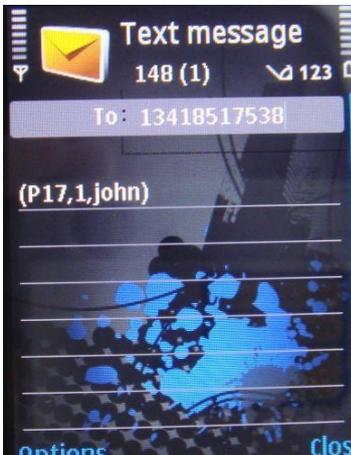
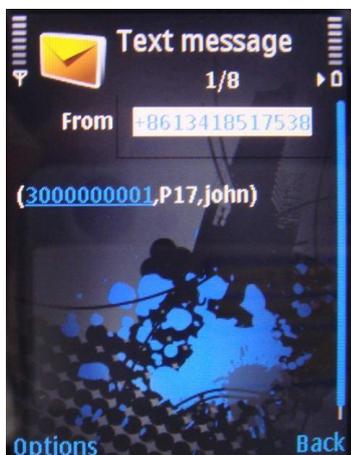
P12	Enquire/Set difference	time (P12,1,480) Parameter[1]: 1 means setting, 0 means enquiring Parameter[2]: 480 means 60*8=480 minutes. 480 is example. Such as 480 minutes is Beijing time and Greenwich time, the unit is minutes.
P13	Require SOS LED flashing	(P13,1,1) Parameter[1]: 1 means setting, 0 means enquiring Parameter[2]: 1 means open the SOS LED .0 means close the SOS LED.
P16	Enquire current battery	(P16) Returned results: (3101210003,P16,64) 64 : means the current power surplus 64%.
P17	Enquire/Set another name	(P17,1,joint_1) Parameter[1]: 1 means setting, 0 means enquiring. Parameter[2]: Name, the longest do not exceed 50 bytes.
P20	Factory reset	(P20) Will resume in addition to the IP address, port, APN and APN account, password, alias, time difference of all parameters for the factory default settings.

P22	Enquire/Set alarm switch	<p>(P22,1,1,1,1,1,1)</p> <p>Parameter[1]: 1 means setting, 0 means enquiring.</p> <p>Parameter[2]: Enter into Geo-fence alarm confirm switch</p> <p>Parameter[3]: Out Geo-fence alarm confirm switch</p> <p>Parameter[4]: From Geo-fence alarm confirm switch.</p> <p>Parameter[5]: Low battery alarm confirm switch.</p> <p>Parameter[6]: SOS alarm confirm switch.</p> <p>[Note]: Every parameter could value 0,1,2,3 and can be any combination. 0 indicates GPRS and SMS alarm are closed, 1 means only open GPRS alarm, 2 indicates only open SMS alarm, 3 said GPRS and SMS alarm are open.</p>
P23	Read the current device IMEI number.	<p>(P23)</p> <p>Returned result: (3101210003,P23,012207004451636)</p> <p>012207004451636 is the IMEI no of equipment.</p>
P24	Request equipment to restart	(P24)
P25	Alarm confirmed command	<p>(P25)</p> <p>No matter terminal has several alarm, at this time will be confirmed.</p>

P26		<p>(P26,1,1,1,1,1,1,60)</p> <p>Parameter[1]: Operating mode, 1 means setting, 0 means enquiring.</p> <p>Parameter[2]: Enter in Geo-fence alarm confirm the switch, need to confirm when entering in Geo-fence. Value of 1 or 0, 1 to confirm, 0 is not confirmed, the default is 1, need to confirm;</p> <p>Parameter[3]: Out of Geo-fence alarm confirm the switch, need to confirm when entering in Geo-fence. Value of 1 or 0, 1 to confirm, 0 is not confirmed, the default is 1, need to confirm;</p> <p>Parameter[4]: From the Geo-fence alarm confirm the switch, need to confirm when from the Geo-fence. Value of 1 or 0, 1 to confirm, 0 is not confirmed, the default is 1, need to confirm;</p> <p>Parameter[5]: Low battery alarm confirm switch, low battery alarm need to confirm. Value of 1 or 0, 1 to confirm, 0 is not confirmed, the default is 1, need to confirm;</p> <p>Parameter[6]: SOS alarm confirm switch, SOS alarm need to confirm. Value of 1 or 0, 1 to confirm, 0 is not confirmed, the default is 1, need to confirm;</p> <p>Parameter[7]: Alarm upload interval: When need to confirm the alarm(before confirming by center) upload alarm value from 5-60000, default 60s report.</p>
P28	Time service function	<p>(P28, 240714163459)</p> <p>When GPS not positioning, the JT600A timing</p>
P31	Enquire/Set G-sensor relative parameter	<p>(P31,1,500)</p> <p>Parameter[1]: Operating mode, 1 means setting, 0 means enquiring.</p> <p>Parameter[2]: The critical point of motion detection of acceleration, the range is 63 to 63, the unit is mg.</p>
P33	Open/close base station positioning function	<p>(P33,1,1)</p> <p>Parameter[1]: Operating mode, 1 means setting, 0 means enquiring.</p> <p>Parameter[2]: Base station location, 1 means open base station positioning, 0 means close base station positioning;</p>

5.6.2 SMS command illustration:

Function	SMS Format	The command to be sent via mobile	The replied message from JT600A
Set VIP number for SMS command	(P11,1,1,+8613910102345) //Set the VIP number for SMS command		
Query current location	(P02)		John ,09-28 12:11:02,Speed:32km/h, Battery:80%,GPS:13,STANDARD , http://maps.google.com/?q=2.549737N,114.076685E
Set time difference	(P12,1,480) 8*60=480 Minute China time zone		

<p>Set the threshold for low power alarm</p>	<p>(P10,1,20) //20%</p>		
<p>Set alias name</p>	<p>(P17,1,John)</p>		
<p>Set IP address and APN Parameters</p>	<p>(P05,1,211.154.136.219,8888,cmnet,,) //cmnet China MobileGPRS APN The complete command is: (P05,1,211.154.136.219,8888,APN,APN user,APN pass)</p>		<p>(30000000001,P05,211.154.136.219,8888,cmnet,,)</p>
<p>Set Data uploading interval</p>	<p>(P04,1,60,1) //Upload the data in every 60 seconds</p>		<p>(30000000001,P04,60, 1)</p>

VI Specification

6.1 Basic specification

Dimension	Main Unit: 96mm * 51mm * 22mm , Built-in battery
Weight	Main unit: 80g , Extra backup Battery: : 50g
Material	Plastic PC
Working Temperature	-25~+70°C
Built-in battery	1800mAh
Backup battery	2500mAh

6.2 GSM Module

M35 GSM module. Basic parameters is as following:

Feature	Detail
Frequency bands	Quad-band: GMS 850, EGSM 900, DCS 1800, PCS 1900. The band can be set by AT COMMAND The band can auto search Compliant to GSM Phase 2/2+.
Power supply	VBAT 3.3v~4.6v, typical value 4.0V
Power saving mode	1.3mA@DRX=5 1.2mA@DRX=9
Transmit power	Class 4(2W) at EGSM900 and GSM850 Class 1(1W) at DCS1800 and PCS 1900
GPRS connectivity	GPRS multi-slot class 12 (default) GPRS multi-slot class 1~12(can be set) GPRS mobile station class B
Temperature range	Normal operation : -35~+80°C

	<p>Restricted operation : -40~-35°C and +80~+85°C</p> <p>Storage temperature: -45~+90°C</p>
Data GPRS	<p>GPRS data downlink transfer: max. 85.6 kbps</p> <p>GPRS data uplink transfer: max. 85.6kbps</p> <p>Coding scheme: CS-1, CS-2, CS-3 and CS-4</p> <p>support the protocols PAP (Password Authentication Protocol) usually used for PPP connections.</p> <p>integrates the TCP/UDP/FTP/PPP protocol.</p> <p>Support Packet Switched Broadcast Control Channel (PBCCH)</p>
SIM interface	Supported SIM card: 1.8V ,3V
Audio features	<p>Speech codec modes:</p> <p>Half Rate (ETS 06.20)</p> <p>Full Rate (ETS 06.10)</p> <p>Enhanced Full Rate (ETS 06.50 / 06.60 / 06.80)</p> <p>Noise suppression</p> <p>Echo suppression</p> <p>Built in AB audio power amplifier, max power 800mW</p>
External antenna	Connected via 50 Ohm antenna connector or antenna pad.
Two serial interfaces	<p>Main port:</p> <p>Full function port</p> <p>can be used for CSD FAX, GPRS service and send AT command of controlling module.</p> <p>Autobauding supports baud rate from 4800 bps to 115200bps.</p> <p>Software upgrading</p> <p>Debug port:</p> <p>For debug only</p>
Phonebook management	Supported phonebook types: SM, ME, FD, ON, MT
SMS	<p>Text and PDU mode</p> <p>SMS storage: SIM card</p>
SIM Application Toolkit	Supports SAT class 3, GSM 11.14 Release 99
Real time clock	Implemented

Timer function	Programmable via AT command
Firmware upgrade	Firmware upgradeable over main port
Physical feature	Size: 19.9+0.15 *23.6+0.15*2.65+0.2mm Weight: 3g

PS: The above parameters is provided by GSM factory Quectel.

6.3 GPS Module

MAX-7Q Basic parameters is as following:

	Parameters		
Receiver type	56 Channels GPS L1C/A SBAS L1C/A QZSS L1C/A		
Modified Time of Acquisition data		MAX-7Q/W	MAX-7C
	Cold start	29s	30s
	Warm Start	28s	28s
	Hot start	1s	1s
	AUX start	2.5s	5s
Sensitivity		MAX-7Q/W	MAX-7C
	Tracking and navigation	-161 dBm	-160 dBm
	Recapture	-160 dBm	-160 dBm
	Cold start	-148 dBm	-147 dBm
	Warm start	-148 dBm	-148 dBm
	Hot start	-156 dBm	-155 dBm
Horizon location accuracy	Auto	2.5 m	
	SBAS	2.0 m	
The accuracy of the time pulse signa	Rate-Monotonic Scheduling	30 ns	
	99%	60 ns	

The frequency of the pulse signal	0.25 Hz --10 MHz (available for configuration)		
Max Navigation update rate	10 Hz		
Speed Accuracy	0.1 m/s		
heading precision	0.5 degree		
Operation limitation	acceleration of gravity		≤ 4 g
	Maximum altitude		50,000 m
	Maximum speed		500 m/s

VII Standard package and optional accessories

Item	Accessories name	Unit	Explain	Accessories picture
1	Main body(including 1800mAh battery)	pcs	Standard	
2	Micro-USB charging/configuration cable	pcs	Standard	
3	CD (user manual/ configure software)	pcs	Standard	The latest information can be downloaded from www.joint-tracking.com

4	Charging(directly)	pcs	Optional	
5	Upgrade cable	pcs	Optional	

VIII FAQ

1. The unit can only be powered on whiles SIM card put in. The unit will powered off as soon as the SIM card pulled out.
2. If you connected the upgrade cable with JT600,It would be shutdown. To power on the unit, you have to pull and plug SIM card and press power button once.

IX SAR

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
 - (1) This device may not cause harmful interference.
 - (2) This device must accept any interference received, including interference that may cause undesired operation.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Designed and manufactured not to exceed the emission limits for exposure to radiofrequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health. The exposure of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg and the CE is 2.0 W/kg. transmitting at its highest certified power level in all Your Portable GPS Tracker is a radio transmitter and receiver. It is at the highest certified power level, the well below the maximum value. This is power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the available for sale to the public, it must

be tested and certified to the FCC that it does not exceed the limit established by the government adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. The FCC has granted an Equipment Authorization for evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model the Display Grant section of [http://www.fcc.gov/ oet/fccid](http://www.fcc.gov/oet/fccid) after searching on FCC ID: Z08JT600.