TZ-GT08

Personal GPS Tracker

User Guide V1.5

Contents

1 Product Overview

Thank you for purchase our new charming product GT-08.The GT08 is a GPS/GPRS based personal tracking unit, it provides an easy way to track your targets, for emergency and provide a reliable and accurate location information via SMS or GPRS to send to the cell phone or computer.

GT08 has the following functions and Key feature

- Tracking via SMS or GPRS TCP/UDP communicati
- Current location report
- Tracking by time interval
- Listen(wiretapping)
- Emergency alert
- Geo-fencing control
- Low battery alert
- Over speed alert
- SOS buttons for sending message
- Rechargeable internal battery
- Rebranding acceptable

2. For Your Safety

Read these simple guidelines. Not following them may be dangerous or illegal. Read the full user manual for more information.

Switch on safely	Do not switch on the unit when wireless phone use is prohibited or when it may cause interference or danger.
Switch off in hospitals	Follow any restrictions. Switch the unit off near medical equipment.
Switch off in aircraft	Follow any restrictions. Wireless devices can cause interference in aircraft.

Switch off when refueling	Do not use the unit when at a refueling point. Do not use near fuels or chemicals.
Switch off near blasting	Follow any restrictions. Do not use the unit when blasting is in progress.
Qualified service	Only qualified personnel can install or repair this unit.
Water resistance	Your unit is not water resistant. Keep it dry. Use waterproof bag if necessary.

3 GT-08 Characteristics

Item	Specification
Charging Voltage	DC 4.2-5.5V/400mA (Mini USB port)
Dimension	63 mm × 42 mm × 22 mm
GSM module	GSM 900/1800Mhz or GSM 850/1900Mhz (Custom)
Flash Memory	16M
GPS Chipset	latest GPS SIRF-Star III chipset
GPS Sensitivity	-159Db
GPS Frequency	L1, 1575.42 MHz
C/A Code	1.023 MHz chip rate
Channels	20 channel all-in-view tracking
Position Accuracy	10 meters, 2D RMS
Velocity Accuracy	0.1 m/s
Time Accuracy	1 us synchronized to GPS time
Default datum	WGS-84
Reacquisition	0.1 sec., average
Hot start	1 sec., average
Warm start	38 sec., average
Cold start	42 sec., average
Altitude Limit	18,000 meters (60,000 feet) max.
Velocity Limit	515 meters/second (1000 knots) max.
Jerk Limit	20 m/sec
Operating temperature	-20° to 60° C
Humidity	5% to 95% Non-condensing
Voltage	Rechargeable 820mAh battery (3.7V),
Work time	60 hours in sleep mode and 13 hours in normal mode
LED	3 LEDs to show POWER,GPS,GSM status
Button	One SOS button for sending the emergency message.

4. Getting Start

This section will describe how to setup your GT08 after installation.

4.1 Hardware Features

GT08 includes:

GT08

Wall-Charger

Car Charger(option)

USB Cable

CD

Configure Cable (option)

4.2 View

Front View Side View Back View

4.3 Light and Button Functionality

The GT08 has one buttons and three LED lights with three different colors to indicate the status of the unit.

O

Red LED - indicating vibrate status	
Off	Tracker have no vibration
On	Tracker have vibration

Blue LED - indicating GPS status	
On	One button is pressed
Flashing (0.1 second)	The unit is being Initialized
Flashing (on for 0.1 second and off for 2.9 seconds)	GT08 has a GPS fix

Flashing (on for 1 second and off for 2 seconds)	GT08 has no GPS fix

Green LED - indicating GSM status	
On	One call is coming in
Flashing (0.1 second)	The unit is being Initialized
Flashing (on for 0.1 second and off for 2.9 seconds)	GT08 is connected to the GSM network
Flashing (on for 1 second and off for 2 seconds)	GT08 is not connected to the GSM network

Power Button	To turn on/off GT08
SOS Button	When it is pressed, GT08 will send an emergency information to the preprogrammed phone number by SMS.

4.4 First Use

Please read this manual before using your GT08.

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4.4.1 Ensure that your GT08 has a working SIM installed.

- Check that the SIM has not run out of credit (Test the SIM in a phone to make sure it can send and receive SMS)
- Check that the SIM Lock code is turned off
- If you require the function of sending an SMS location report to the authorized phone number when it makes a call to the GT08, please make sure the SIM installed supports displaying caller ID.

4.4.2 Charge the tracker for at least 3 hours in power-off status using the wall charger or car charger. Or you can connect the tracker directly to computer by USB for charging. Red light is on during charging and is off when charging is complete.

4.4.3 Check the LED

Check that the Red LED (Battery) is flashing 1 second on and 2 seconds off.

Check that the Green LED (GSM) is flashing 0.1 second on and 2.9 seconds off.

Check that the Blue LED (GPS) is flashing 0.1 second on and for 2.9 seconds off.

5. Track by SMS and GPRS

5.1 Track by SMS

1. -Track on demand- Reply with longitude, latitude, speed and date

Send the following SMS to your GT08:

Command: *<password>,<000># /* 000000 is the default password */

For example: *000000,000#

GT08 will respond with a SMS with format as follows::

Lat: +2232.723 N
Long: +11403.534 E
Spd: 000km/h
Fix: A
Sat: 04
HDOP: 01.2
GSM： 20
Batt: 04.10V
Mile: 0.0000
Time: 12/03/10 08:50:34

2. -Content Description:

Lat: +2232.723 N

North latitude — Latitude = 22 degree – 32.723 cent

Long: +11403.534 E

Eastern longitude — Longitude = 114 degree – 03.534 cent

Spd: 000km/h

The speed of the tracker, the unit: KM/h

Fix: A

The tracker received the GPS signal.

About Fix: V — have not get the GPS signal.

Sat: 04

Received the GPS signal of four satellite

HDOP: 01.2

The horizontal dilution of precision (HDOP)

GSM： 20

The GSM signal of value

Sometimes, the tracker maybe could not send the GPRS successful when the value below than 10.

Batt: 04.10V

The voltage of the interior battery. When the voltage higher than 3.40V, the tracker works normal.

Mile: 0.0000

The odometer between every GPRS interval times.

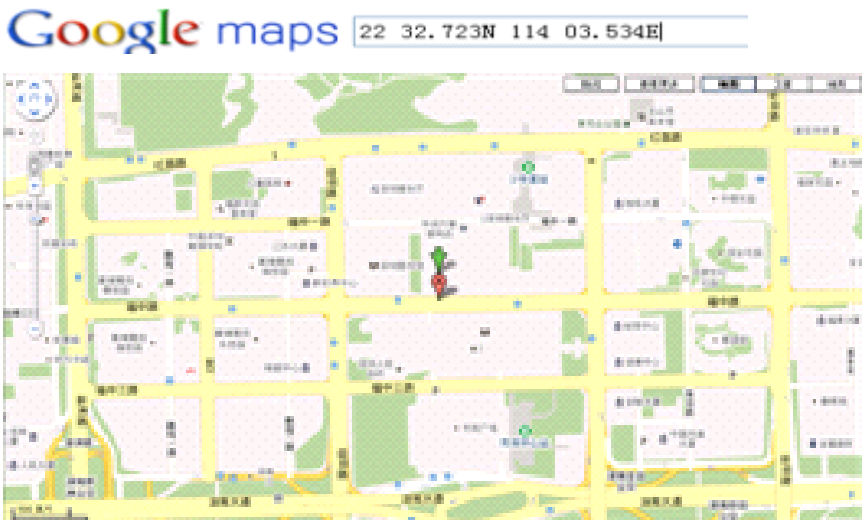
Time: 12/03/10 08:50:34

The GMT times.

3.-After we get the message, we can track on the map:

Type as the following picture shows:

You can type: 22 32.723N 114 03.534E



Or you can use local map software on PDA or car navigation to input the coordinates.

5.2 Track by GPRS between Server and Tracker

5.2.1 ID Number

We use the IMEI number of the GSM module as the ID to identify the different devices.

5.2.1 Set APN

Command: *$$$$$$,011,APN,Username,Password#

Description: Set APN details for the tracker

Note.

1. APN username and password are optional. If no APN username and password required, just input APN only.
2. APN default as "cmnet".

5.2.2 Set Socket

Command: *$$$$$$,015,M,IP,PORT#

Description: Set the IP and Port for tracker for GPRS communication.

Note.

1. M is the mode,1 for domain, 0 for IP.
2. IP is your server`s IP or domain name.
3. Port : [1,65534]

Example.

*000000,015,1,tracking.tzonedigital.com,3508#

*000000,015,0, 113.105.152.6,3508#

5.2.3 Set DNS IP

Command: *$$$$$$,014,S,DNS IP1,DNS IP2#

Description: This command set the domain name server to analysis the domain name to IP.

Note.

1. S is the state of this command, 1 means enable, 0 mean disable.
2. IP1 and IP2 are the IP of the domain name server.

Example:

*000000,014,1, 202.96.134.33, 202.96.128.86#

5.2.4 Set the interval of the GPRS

Command: *$$$$$$,018,XXX,YYY#

Description: This command set the time interval to send the GPRS date.

Note:

1. XXX is the time interval to send the GPRS date, the unit is second, X=0, means stop to send GPRS.
2. YYY is the times to send the GPRS data, Y=0 means stop send interval GPRS 0 times; Y=999, means continue send the GPRS date all the time.

Example:

*000000m,018,60,100# mean send the interval GPRS 100 times every 60 second.

5.2.5 Open the GPRS function

Command: *$$$$$$,016,S#

Description: This command control the GPRS function.

Note:

1. S=1, means active GPRS function.
2. S=0, means close the GPRS function.

Example:

*000000,016,1# active the GPRS function

The server gets all the messages, and show it on the webpage.

6. Main function

6.1 SOS function

Command: *$$$$$$,003,0,F,CallNumber,SMSNumber#

Description: Set the SOS action. If you are in the emergency state, just press the SOS button to send out a message for help.

Note:

1. F is a state of this function. F=1 send an SOS alarm SMS on the number you set..
2. Call number and SMS number can be different.

Example:

*000000,003,0,1,12345678,123456789#

6.2 Low Battery alarm

Command: *$$$$$$,004,XXX,YYY#

Description: Set the low power and auto shut down voltage of the device. If the voltage is lower than XXX, it will send low power alarm; if the voltage of the battery lower than YYY, it will auto shut the device to protect the battery.

Note:

1. XXX is the low power alarm voltage.
2. YYY is the auto shut voltage.

Example:

*000000,004,350,340#

6.3 Speeding alarm

If the person who take the tracker in the over speed state, it will send over speed message to you; also send the recover normal speed message.

6.4 Geo-fence alarm

You can set a geo-fence for the device, if the device in or out of the fence, it will send a alarm message.

6.5 Listen(Voice Wiretapping)

Authorize a phone number to make a silence call to the tracker, the track answers the call automatically and allows the caller to listen to what happens around the tracker. There is no voice indication that the call is in progress

6.6 Movement alarm

If you turn on the movement alarm, the device keep moving, it will send out the movement alarm to the server.

6.7 Other useful function

- **Get current location:**
  ***$$$$$$,000#**
- **Get the IMEI from the device:**
  ***$$$$$$,801#**
- **Reboot the device by SMS:**
  ***$$$$$$,991#**
- **Initialization the device**
  ***$$$$$$,990,099#**

7. SMS instruction list.

If you want to know more about the GT08, and design your special GT08, you can refer to the SMS instruction list.
$$$$$$ is user`s password, and initial password is 000000

	SMS Instruction	Format	Note
1	Request one position	*$$$$$$,000#	
2	Modify user password	*$$$$$$,001,@@@@@@#	$$$$$$ is old password @@@@@@ is new Password
3	Set the time intervals of position notice SMS The Position SMS will send to the preset SOS number.	*$$$$$$,002,X,Y#	X (Max 3 Digital) =0, Stop send position SMS =[1,60000] Time interval (Unit: mins) Y (Max 3 Digital) =[1,999） times send SMS Y=0, Disable this function Y=999, continue send SMS
4	Set a preset phone & SMS	*$$$$$$,003,0,F,CallNumber,	F = 0, Disable this function

	number for SOS button	SMS Number#	=1, Only send an alarm SMS to the preset SMS Number Notice :Tel Number and SMS Number (must <25 digits)
5	Set low power alarm When the GT08 voltage is lower than the preset value, GT08 will send one lower power alarm GPRS data to the Preset Server.	*$$$$$$,004,XXX,YYY#	XXX is the low power alarm voltage, eg: 3.8v,XXX=380 YYY is the auto shut down voltage, eg: 3.5v,YYY=350 For example： *$$$$$$,004,380,350#
6	Set over speed alarm When the GT08 speed higher than the preset value, GT08 will send one over speed alarm GPRS data to the Preset Server.	*$$$$$$,005,S,X,Y,Z#	S=1 Enable speed alarm, S=0 Disable speed alarm. X=[10<XXX<250] (The speed preset value) unit is km/h Y is the times over speed [1,999],unit is second Z=[10,360],(The time interval to send speed alarm) unit is second.
7	Set Geo-fence alarm When the GT08 move out preset scope, GT08 will send one Geo-fence GPRS data to the Preset Server.	*$$$$$$,006,+lat1,+long1,+lat2,+long2,X,Y#	Lat=[-9000.0000,+9000.0000] Long=[-18000.0000,+18000.0000] X=[10,360] is for time interval send alarm message. Y=0, Disable GEO-fence alarm. Y=1, Into GEO-fence alarm. Y=2, Out of GEO-fence alarm. Note:Long1>long2&lat1>lat2 Make sure the position of north latitude and east longitude set it (+),otherwise set it (-) Format:+AAAAA.BBBB Make sure set the two position have the same digit after comma.
8	Extend setting	*$$$$$$,008,ABCDEFG#	A=0, Disable position report function which get position SMS by Calling A=1, Enable position report function which get position SMS by Calling B=0, Send the SMS in Text format. B=1, Send the SMS in NMEA format. C=0, GT08 do NOT hung up when one call incoming C=1, GT08 hung up after 4~5 rings when call incoming

			D=0 E=0 F=0 G=0
9	Change band	*$$$$$$,009,S#	S=0, work in 900/1800 S=1, work in 850/1900 *note: the default of parameter is S=0 and the GSM module support (900/1800), if the unit of GSM module support (850/1900), then you could set the parameter to S=1.
10	Set APN,Username,Password	*$$$$$$,011,APN,Username,Password#	APN : APN string (must < 28 chars) User name: Your username (must < 28 chars) Password: Your password (must < 28 chars) * If haven't username or password, then left it blank. For example: *000000,011,CMNET,,## (It haven't username and password)
11	Set DNS	*$$$$$$,014, X,DNS1,DNS2#	X=0 Disable the DN X=1 Enable the DNS DNS is the domain name server , xxx.xxx.xxx.xxx
12	Set IP Address & port number	*$$$$$$,015,0,IP,PORT#	IP : xxx.xxx.xxx.xxx PORT : [1,65535]
13	Set the time intervals of GPRS Data	*$$$$$$,018,X,Y#	X (3 Digital) =0 stop send time interval GPRS =[10,999] Time interval (Unit: sec) Y (3 Digital) =0, stop send time interval GPRS = [1,999] After send YYY times stop. =999, continue send GPRS un-stop
14	Enable/Disable GPRS function	*$$$$$$,016,X#	X=0 Disable GPRS unction X=1 Enable GPRS Function This is the last step of GPRS setting.
15	Set the GPRS mode	*$$$$$$,019,X#	X=0, Use the UDP mode X=1, Use the TCP mode
16	Heart Beat Switch	*$$$$$$,040,X#	X=0 Disable the heart beat function X=1 Enable the heart beat function
17	Heart Beat Intervals	*$$$$$$,041,X#	X is the heart beat interval, unit is minute [1<X<9999] X=0, Disable this function.

18	Heart Beat Init	*$$$$$$,042,0#	When receive this command, the heart beat will re-count time
19	Reading the IMEI number	*$$$$$$,801#	This command to ask GT08 reply the IMEI number and the firmware of version.
20	Initialization Tracker	*$$$$$$,990,099#	It will set all parameter to factory default value (Excluding the Password).
21	Reboot by SMS command	*$$$$$$,991#	It will reboot the GT08 by this SMS command.
22	Map Link	*$$$$$$,100#	the device wil reply a sms link .after clicking the sms link, you will get a segment of googl map for the device location on your cell phone.
23	Tremble sensor switch	*$$$$$$,021,XY#	X = 0 Disable Sleep mode X = 1 Enable Sleep mode Y = 0 Disable the tremble sensor Y = 1 Enable the tremble sensor
24	Into sleep mode when without tremble for preset time	*$$$$$$,044,X#	After the tremble sensor don't tremble for X second, tracker will into sleep mode 30< X <65536 (Unit : second) For Example, configure AVL05 into sleep mode after no tremble for 30 second: *000000,044,30#
25	Wake up from Tremble	*$$$$$$,043,X#	After the tremble sensor continuous tremble for X second, tracker will wake up X=[1,255) (Unit : second) AVL05 Wake up from sleep mode after no tremble for 10 second: *000000,043,10#

8. Q&A

1. Question: Unit will not turn on

Answer: 1) Battery needs to charge.
2) The switch is broken.

Resolution: 1) Recharge the unit for 3 hours.
2) Needs to repair.

2. Question: Turn on the unit, and come into sleep mode.

Answer: 1) The battery needs to charge
2) The device needs to initialize after update new firmware.

Resolution: 1) Charge the unit.
2) Please don`t turn off and on after you update the new firmware.

3. Question: Unit will not reply with SMS

Answer: 1) The unit don`t register the GSM network.
2) The signal is poor
3) Wrong password or wrong command format
4) The SIM is GT08 has run out of credit

Resolution: 1) Check the SIM card has enough money for work.
2) Check the unit registers the GSM network.
3) Check the CSQ value of the GSM signal.
4) Please care about the command format, attention it is "," not a "， ".

4. Question: GSM function can`t work normal

Answer: 1) There is no GSM signal.
2) Not insert the SIM card
3) SIM card has PIN code active
4) SIM card damaged
5) Battery is low

Resolution: 1) Compare with a mobile to check the GSM signal.
2) Make sure you insert a SIM card and the SIM can work.
3) Remove the PIN code of the SIM card.
4) Charge the unit to ensure the GSM start working.

5. Question: Can`t receive the GPS

Answer: 1) Unit doesn`t have a open sky
2) Bad GPS reception
3) Battery is low

Resolution: 1) Move the unit to an open sky. Tall buildings, trees, cloud or heavy rain will case the bad GPS reception.
2) Place the front side of the unit towards sky.
3) Charge the unit and get enough power for the unit working.

6. Question: Can`t connect the server via the GPRS.

Answer: 1) SIM card in GT08 doesn`t support GPRS function.
2) The APN is not correct.
3) GPRS function is closed.
4) Incorrect IP and Port
5) GSM signal is weak.

Resolution: 1) Open the GPRS function for the SIM card.

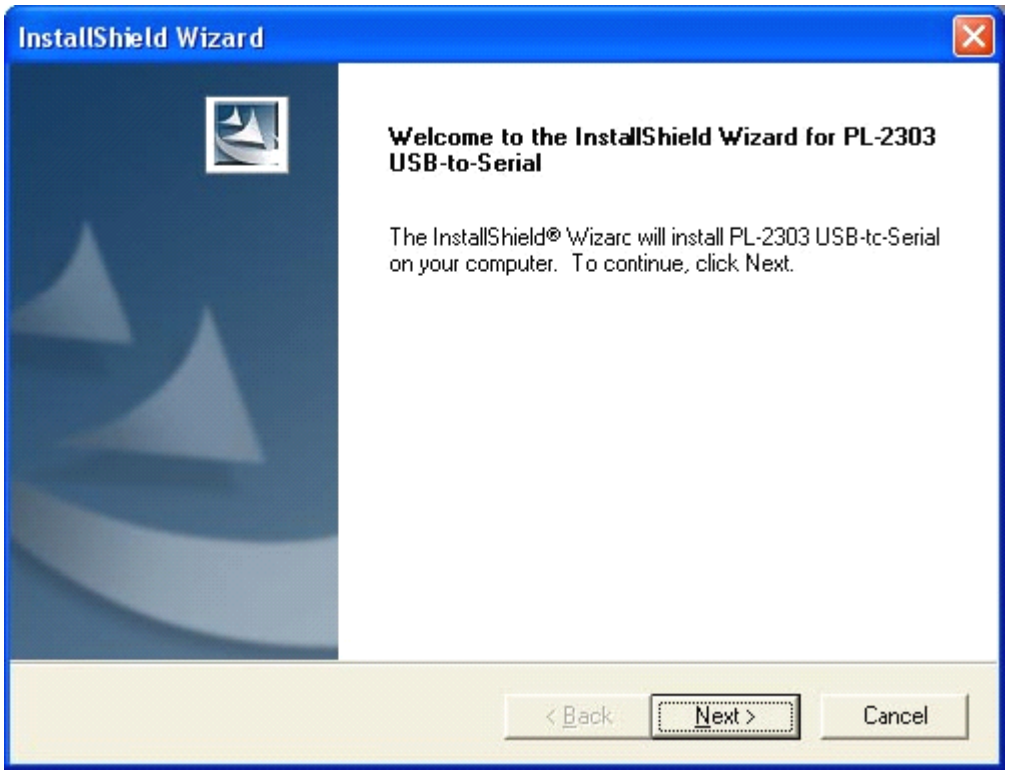
2) Make sure the APN correct.
3) Open the GPRS function for the unit (016 command).
4) Get the correct socket of the server.
5) Move the device to a good GSM signal area.

9 .Update the firmware of the GT

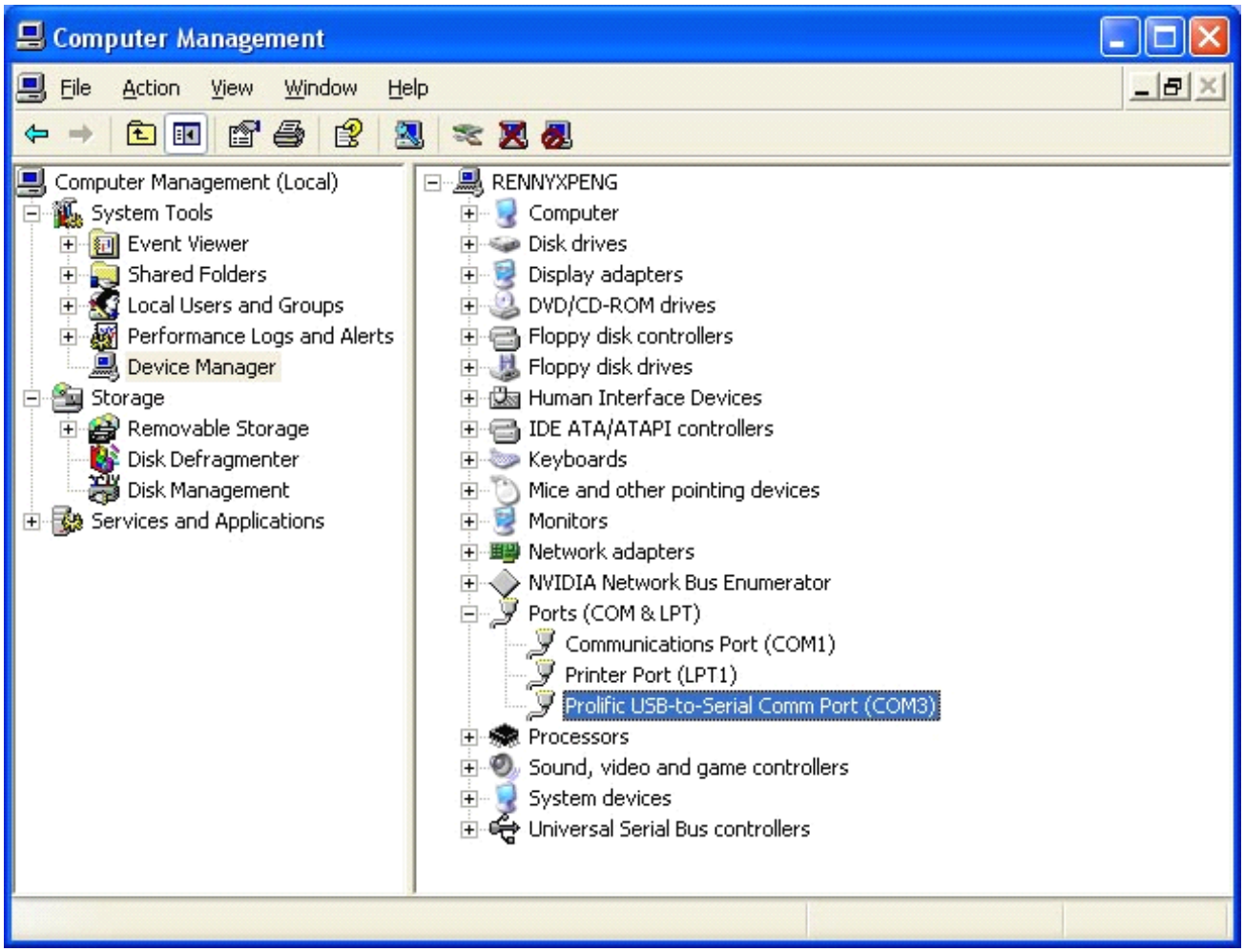
IAP Update User Guide

1）Install RS232 cable driver

A. At the first, Install the Driver for "USB Converter"



B. Connect the GT unit to PC through RS232 cable, View the com port that the cable used

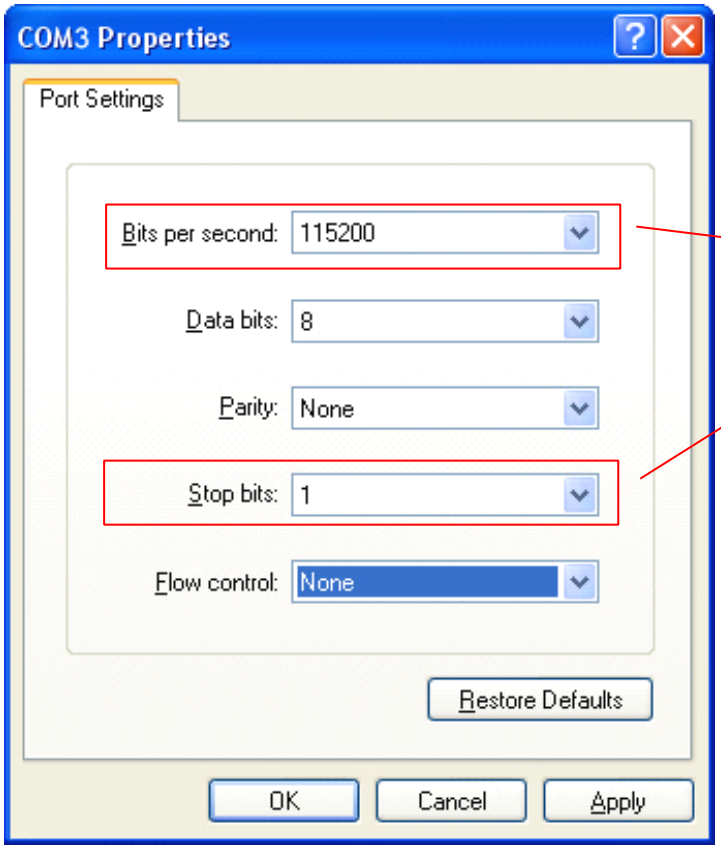


2）Turn on GT device

3）Build a New Hyper terminal connect, fill the name, example as IAP_DL

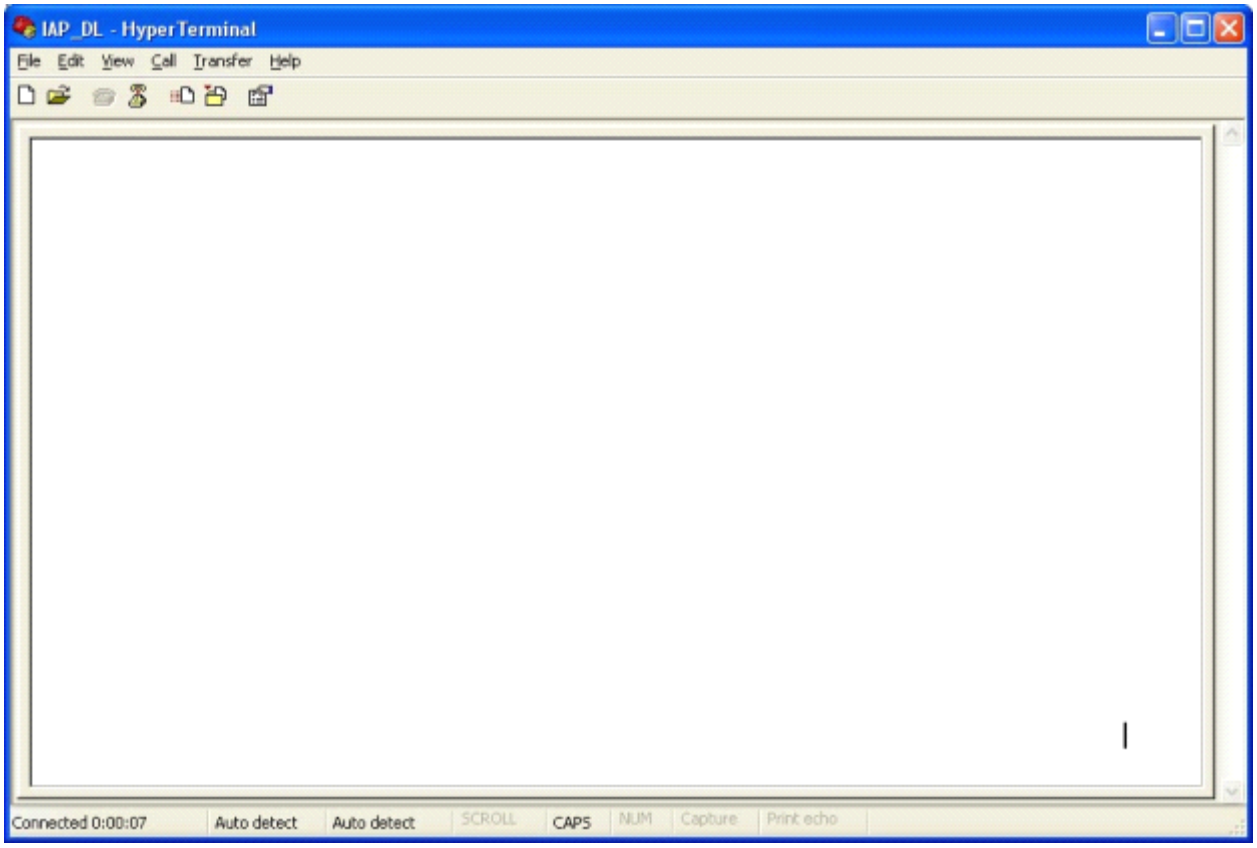
4）Choose the Com Port that the RS232 Cable used

Choose all the option same as picture show below (All setting must the same as the picture)



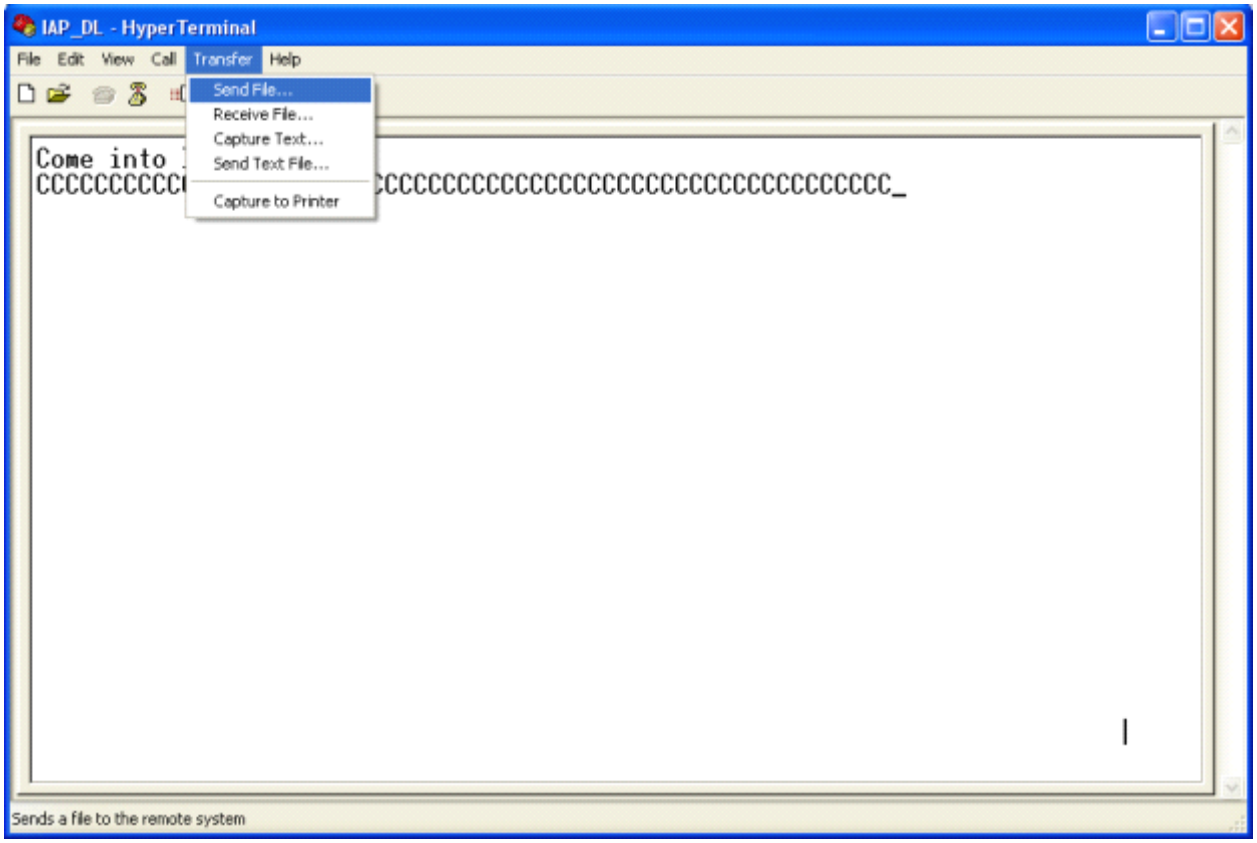
Different setting from old version hardware

5）Into Configure Mode



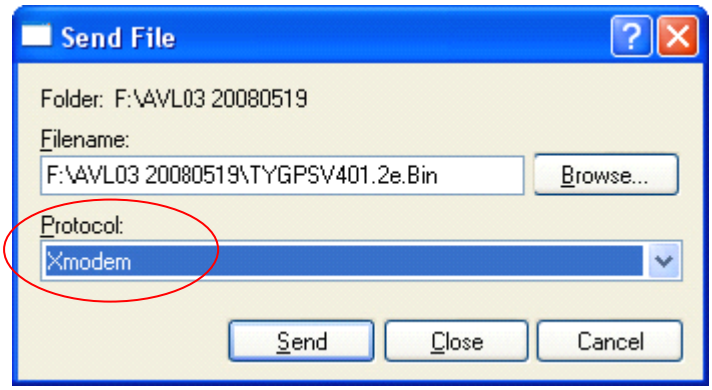
6）Turn Off GT device

7）Press the SOS button and Turn on Power at the same time，Device all indicator will keep light at same time， Hyper terminal will display the interface like the picture follow(Come into IAP_V7 or Come into IAP, and then display CCCCC). Then choose Send file（Send-> Send File）at soon as possible, because the update mode will keep for 97 seconds, if out of this time update will not be process succeed.

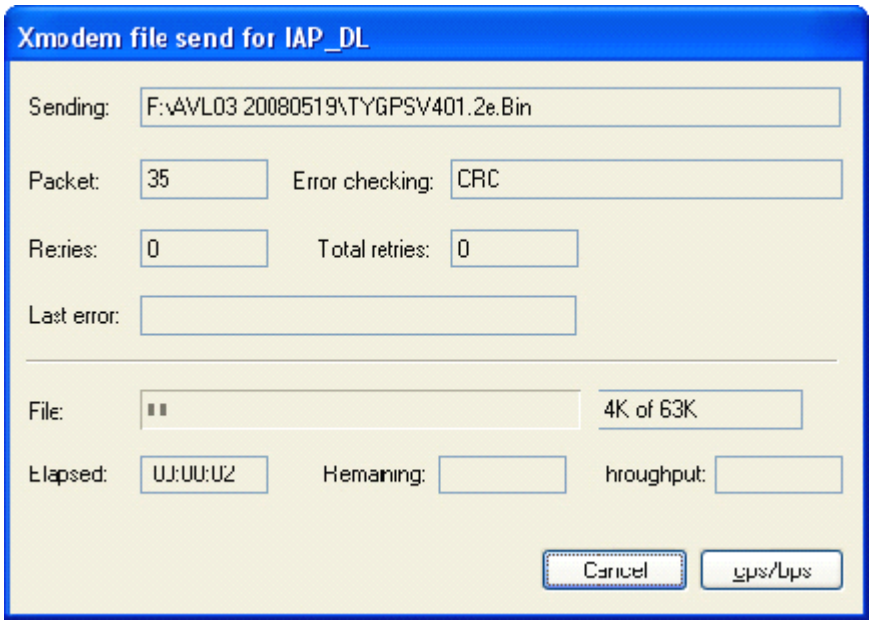


Choose the firmware that you want to Update;

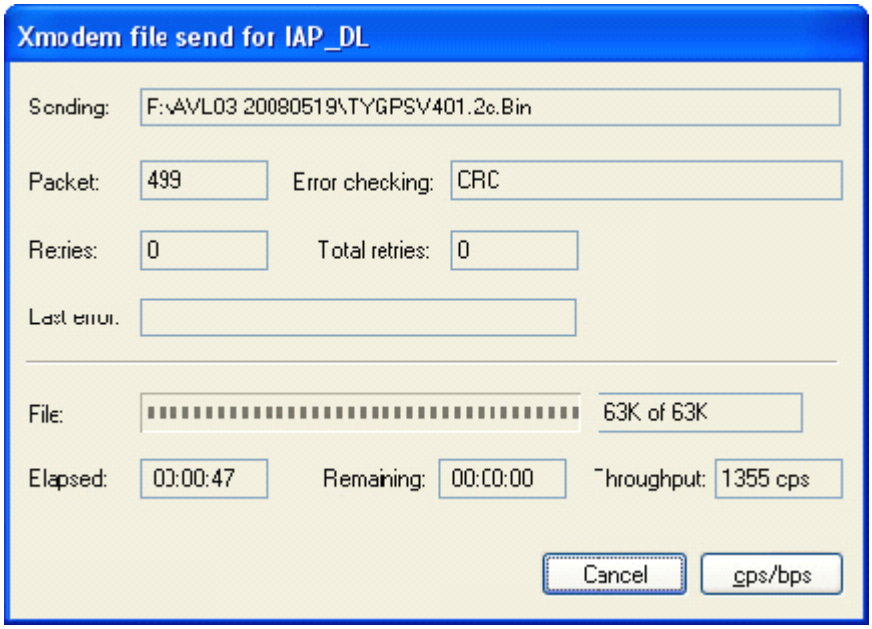
Protocol Choose: Xmodem



Press Send button, Will display a New Windows that show the update process.



(6) When finish Update, Tracker will reboot automatically, and the GSM/GPS/Sensors light will blink quickly. After about 3-5 mins, this interface will shut by itself. When the update is pressing, all indicator will off for 10 seconds, doesn't turn off power of GT08, otherwise will cause MCU broken.



(7) When the GT08 LED is blinking back to normal mode. Make sure about 2 mins later, then turn Off and Turn On GT08 again.(at this times the firmware will load the parameter to the unit). Then the firmware updates finished.