

**V-520 Mini GPS Tracker
(GPS + SMS + GPRS)**

User's Manual

V1.1

1. Introduction

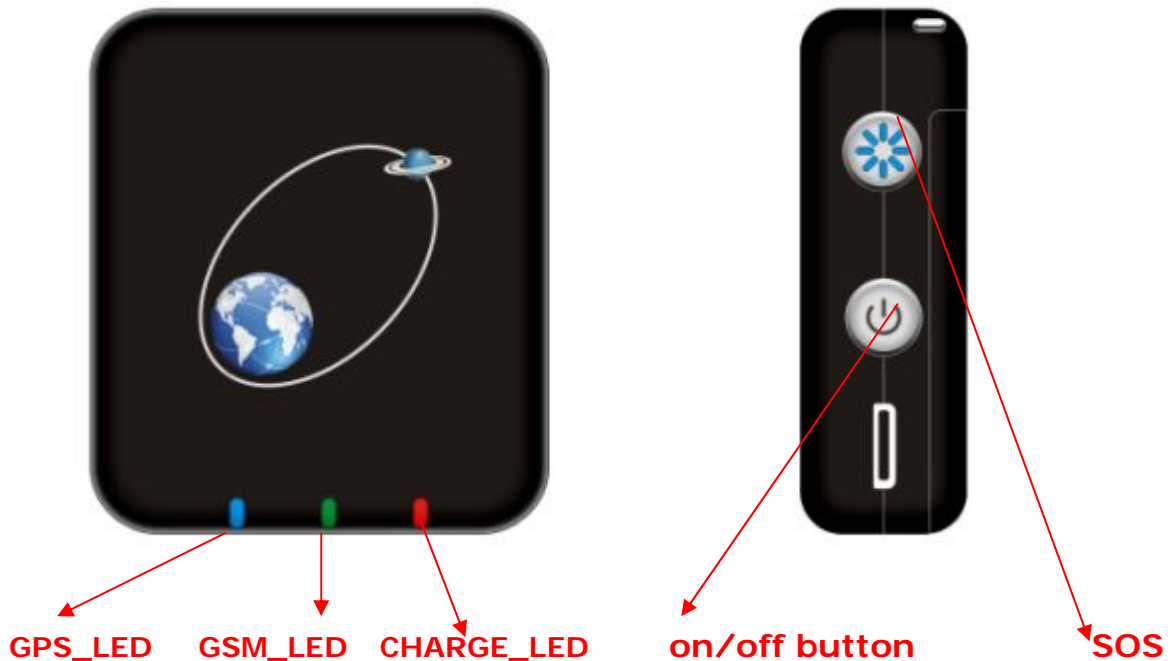
1.1 Welcome

Our main products are Bluetooth GPS, Bluetooth Module, GPS Module and personal tracker. We have base-room of develop in Shenzhen. OEM and ODM are welcomed.

1.2 What's in the box?

- V 520
- USB charged cable
- Charger or car charger
- Accessory CD

About V520



1.3 About v 520

V 520 mini Tracker is a remote positioning device with built-in GPS and GSM/GPRS technology in the smallest size. It can transmit the longitude and latitude coordinates to your cell phone by the SMS. By this, you can find its location on the Google maps© or other map software. The tracker uploads positioning data through GPRS to a designated server. The user can look for real-time location-tracking, historical trajectory through the Internet.

These features are for protecting and searching children and elders. Furthermore, it can be used for other security purposes such as asset protection and animal tracking.

Key Features

- Built-in SKYTRAQ Chipset, excellent for fixing the position even at a weak signal status. Work well even in areas with limited sky view like urban canyons.
- Built-in GSM/GPRS module, support GSM 900/1800 MHz (850/1900 Optional), working all over the world.
- Support SMS communication or GPRS TCP connection.
- Get the position information via mobile phone SMS, or examine the path on the Internet.
- The available SMS takes the control command change tracing function or switch GPS.
- Support establishes three telephone numbers. SOS button send out exact location for immediate rescue/action.
- One key for easily use.
- The major technological index of the device is in conformity with the international standard of GSM mobile phone.
- Portable, mini size, low power design and fashionable.

Applications

- Used in important items outdoor
- Monitor and protect child, elder and disabled.
- Based on GSM network and INTERNET, this series of products provide personalized

services for companies, organizations and individuals, users can search the positioning or movement tracking information provided by this product in mobile phone or personal computer, etc.

Specification

Hardware	
GSM module	MTK program, GSM 900/1800/850/1900 dual-band or quad-band , Globally unique IMEI number Product identification number Support the TCP/IP protocol
GPS Chipset	SKYTRAQ chipset, GPS Functional group
GPS Sensitivity	-161dBm
GPS Frequency	L1,1575.42MHz
C/A Code	1.023MHz chip rate
Channels	65 channel all-in-view tracking
Position Accuracy	2.5 meters, CEP
Velocity Accuracy	0.1 m/s
Time Accuracy	1 us synchronized to GPS time
Datum	WGS-84
Reacquisition	0.1 sec.,average
Hot start	1 sec.,average
Warm start	30sec.,average
Cold start	35sec.,average
Altitude Limit	18,000 meters (60,000feet) max.
Velocity Limit	515 meters/second (1000knots) max.
Acceleration Limit	Less than 4g
Operating temperature	-25°C to 70°C
Humidity	5% to 95% Non-condensing

Dimension	50mm*44mm*16mm
Voltage	>500 mAh Rechargeable battery(3.7V)
Charging connector	DC 5V

2. Getting started

2.1 Hardware description

Blue LED--- indicate the GSM signal state

State	Means
constant Lighting	no SIM card or not GSM net
Slow flash every 8 seconds	GSM receiver work well and standby

Red LED---indicate charge sate

State	Means
constant Lighting	charging
Weak lighting	charging was completed

Green LED--- indicate the GPS signal state

State	Means
constant Lighting	Working, but no location
Slow Flashing	Working and has located

Button Function Description:

button	Means
Power key	Turn on/off the product by press it 3-5s; End the calls by press one time
SOS	If time of pressing SOS button bigger than 3 seconds, it will send location information to one of the three re-stored telephone numbers, And it will dial the first telephone which saved in advance, if there is no answer it will call the second number, and analogy.

2.2 Charge battery

Before using V 520, to lengthen the battery service life, suggest in closes down under the condition to charge completely at least for 12 hours.

Note: The DC port can only make the charge use. Please do not meet other equipment. If connects the initiation question arbitrarily, is generally irresponsible.

2.3 Buy A SIM card

Buy a SIM card from local service provider.

Please make sure that your SIM card support SMS function and have enough deposit.

2.4 switch on / switch off

Switch on:

When the device is on, press the button to off side and wait for 3 seconds. The green LED and blue LED are light.

When the device is off, press the power button to on side and wait for about 20 seconds. It will enter standby mode.

It is suggested that you stay an outer place where it can receive the better GPS signal when

you turn on the device.

Switch off:

When the device is on, press the button to off side and wait for 3 seconds. When the LED goes out, it indicates that the device is turning off for sure.

Tips: How to get better GPS signal:

- 1、 working outdoor, v 520 can get better GPS signal;
- 2、 the front side of v 520 should be placed .

Reset: Under the shutdown state, press the SOS button and the power key, keep the two keys being held down to 6s, then release again.

If success, its state is as below:

Configuration	State
Working Mode	Unchanged
Pre-set phone numbers	None
User passwords	0000
GPS	Open
Send regularly location information	Off
Service password in GPRS	0000
Use's name in GPRS	V300Q
APN	CMNET
IP address	0.0.0.0 0000
GPRS data upload	close

3. How to...

3.1 The operation based on the SMS application

3.1.1 Set up the user password instruction

Format: 777+new password (4 figures) +old password (4 figures)

eg: 77712340000

Explanation: Confirm the user password correctly; changes the new user password to the old password. After set successfully, it will send the confirmation messages (SET USER PASSWORD OK) to the sender.

Note: The user password can only be 4 figures. The default setting for 0000

3.1.2 Change the stored telephone number instructions

Format: *new numbers with 4-20 figures * user password (4 figures) *location number (1-3) **

eg: *13588889999*0000*1**

Explanation: You can store 3 telephone numbers at most in advance. When v 520 tracker receives the instruction and confirms the user password correctly, substitutes the new number for the existing number. After success, it will send the confirmation messages (SET USER NUMBER (1-3) OK) to the sender.

Note: The factory set or reset the number stored post is empty. This command mode is not affected by machine switch until the receipt of further changes or reset operation to the relevant directives.

3.1.3 Change mode instruction

Format: 700+ user password (4 figures)

eg: 7000000

Explanation: When v 520 tracker receives the SMS and confirms the user password correctly, it switches to the SMS application mode. After the success, it will send the confirmation messages (SET MODE OK, CURRENT MODE: SMS P2P) to the sender.

3.1.4 Set GPS mode

Sending SMS commands command can make GPS works in normally open / NC / saving

three models. GPS is in normal open state in factory set or reset.

1. Open the GPS instruction

Format: 222 + user's password 4

For example: 2220000

Description: When V520 received the order and confirmed the user password is correct, it will open the GPS power, after the success it will send confirmation message "GPS ON OK".

2. GPS normally closed mode

Format: 333 + user's password 4

For example: 3330000

Description: When V520 received the order and confirmed the user password is correct, then turn off the GPS, after the success, it will send confirmation message "GPS OFF OK".

3. GPS power-saving mode

1) **Command to set GPS power parameter:** 199 + user password + S xxx + L yy + H zz

example: 1990000S030L01H03

Description: S030, means to close GPS for 30 minutes, you can set (1 ~ 255). L01 said that the first phase of GPS Open is about 1 minute, you can set (1 ~ 98), if the first stage located, it will turn off GPS and does not enter the second phase; if the first stage there is no location, then enter the second phase, H03 indicated the total turn-GPS time, which means the second phase is 2 minutes (ie Hzz - Lyy). H can be set (3 ~ 99). When S is set as 0, then it out of power-saving mode automatically and switches to the GPS always open model, that is command 188 will not work. When the V520 received the order and confirmed the user password was correct, it will configure the S / L / H items according to user-defined parameters , after the success , then send confirmation: GPS AUTO MODE: (yy-zz) / xxx Minutes.

Note:

1. Set S / L / H and other parameters, if the peak is 0, then we must write 0..

For example: To turn off GPS 30 minutes is necessary to set the S030, but not the S30.

2, HZZ is the total time set to open GPS can not be less than Lyy.

3, parameters set by 199 for restart will not be lost, reset will not change until the reset.

4, only in the power-saving mode, the V520 can be set timer switch GPS in accordance with 199, the other two modes will not.

2) Command to set the power-saving mode: 188 + user password

For example: 188 0000

Description: after the success of setting 199 orders, to send 188 commands has take effect. V520 received 188 orders and confirmed the password is correct, it switch to power-saving mode, reply to the sender to confirm the information: GPS AUTO MODE ON OK. In the GPS power-saving mode r, V520 would be instruction in accordance with 199 timer switches the parameters set by GPS to achieve energy-saving purposes.

For example: setting 1990000S030L01H03, and send 188 to enter power-saving mode, in accordance with Directive 199, V520 will turn off GPS 30 (S030) minutes first, and then open the 1 minute (L01), if the GPS located in the open 1 minute (L01) , it will turn off off GPS directly for 30 minutes (S030). If there is no position in 1 minute, it will continue to open the GPS for 2 minutes (H03 - L01). Regardless of whether GPS position after 2 minutes, it will be closed again for 30 minutes, again and again.

Note: 1, switch GPS work as power-saving mode, they must first set the 199 command parameter.

2, open the power-saving mode, in the GPS closed phase, GPRS timing upload and historical data sampling will all stop; in the beginning phase of GPS positioning, GPRS regularly uploading and historical data sampling will be back to normal.

3, open the power-saving mode, in the GPS off phase, regardless of in SMS mode or GPRS mode, if there is a request for location information and other operations, such as 666, # 806, phone positioning, SOS, and out of fence, and so on, the GPS will be immediately open to read the latest GPS data, until the next power cycle, and then turn off GPS.

4, if you need real-time tracking, please use GPS often open mode.

3.1.5 Single localization request instruction

Format: 666+ user password (4 figures)

eg: 6660000

Explanation: When v 520 tracker receives the instruction and confirms the user password correctly, reads the GPS information. No matter whether effective, the information with the replying base station which is the set of the original software will be sent to the sender.

Data format:

Lat: Latitude Direction (+/-) Latitude Value (Accuracy for 5 after the decimal point)

Long: Longitude Direction (+/-) Longitude Value (Accuracy for 5 after the decimal point)

Speed: Speed KM/H (Accuracy for 2 after the decimal point)

Direction: Direction (Accuracy for 2 after the decimal point)

Date: Date YYYY-MM-DD

Time: Time HH: MM: SS (GMT)

BS: Base Station information

Fix: Location state (A/V)

ID: IMEI

STATE: Message state

Effective data format:

Lat: +22.50500

Long: +114.01000

Speed: 0.00KM/H

Direction: 315.00

Date: 2008-04-25

Time: 16:39:45

BS: 25ee0dff

Fix: A

ID: 353686009002030

STATE: SMS

Invalid data format:

Lat: +22.50500

Long: +114.01000

Speed: 0.00KM/H

Direction: 315.00

Date: 2008-04-25

Time: 16:39:45

BS: 25ee0dff

Fix: V

ID: 353686009002030

STATE: SMS

If in the cold start and GPS no position, it will return to the void of information: "ERROR GPS GPRMC FRAME DATA BS: 27971054".

3.1.6 Send the positional information in fixed time instruction

Format: 4 xx + user password (4 figures)

eg: 4010000

Explanation: x indicates one figure from 0 to 9, while "xx <60", its unit is minute. while "xx >60", its numerical value is "xx minus 60" and unit is hour, in other words, 61 is 1 hour, 62 is 2 hours, followed by analogy. When v 520 tracker receives the instruction and confirms the user password correctly, it establishes the current time for initial timing time, xx is the gap time, and sends the confirmation SMS to the sender's mobile phone (TIMER START, REPEAT INTERVAL :< X>MINUTES). Then start to time and send the format as 3.1.5 setting information when it arrives the gap time, the information state item automatically updates STATE: TIMER. When "xx=00", cancels the positional information in fixed time instruction, and sends the confirmation SMS to the sender's mobile phone "TIMER STOP".

Note: The state set by this directive in the next boot after the shutdown is still valid, once again received the directive could be changed again changes, reset configuration reset. After factory

set or reset, timing upload is stop.

3.1.7 Telephone localization function

Explanation: One of 3 telephone numbers stored in advance calls in, and hangs up after ringing 2-5 times, then the v 520 will send the location information in form of 3.1.5 to this number, the information state item automatically updates STATE: CALL.

3.1.8 Monitor function

Explanation: One of 3 telephone numbers stored in advance calls in, it will enter into monitor state when rings 6 times, also can press SOS to enter into monitor state or press POWER button to end the call. then the v 520 will send the location information in form of 3.1.5 to this number, the information state item automatically updates STATE: CALL. It will hang up directly if the calling number is not the stored numbers.

3.1.9 Seeking help initiatively

When press the key more than 3 seconds, it will make vibration and send the location information such as 3.1.5 to 3 telephone numbers stored in advance, the information state item automatically updates STATE: SOS. At the same time, call the first user telephone number. If it is unsuccessful (closed or unable to connect or no response), makes vibration and starts calling the second and the third in turn.

3.1.10 Electronic fence function

Electronic fence takes the set coordinates as the center, the set radius parameters to determine the scope of the fence. When open this feature, once the V520 beyond the scope of the set fence, it will send location information as to 3.1.5 to the 3 preset numbers. The information state item automatically updates STATE: OS. When the V520 re-enters the fenced area, it will immediately send location information format 3.1.5 to the three preset numbers. The information state item prompts STATE: RS..

1. Set the scope of the fence

According to the input formats different of coordinates, user can choose the format as follows instructions to operate.

Format1: 003+ user password E/Wdddmm.mmmmN/Sdd.mmmmRzzz.z

eg: 003xxxxE11406.0024N2233.4230R1

Explanation: E-- east longitude; W-- west longitude; N-- north latitude; S-- south latitude. In this example, uses E and N, please according to the actual geographical position choose corresponding coordinate form to set. In the demonstration, meanings of various parts are as follows:

Edddmm.mmmm is longitude information with units of degrees and minutes, and the ddd expresses degree, mm.mmmm expresses minute (Accuracy for 4 after the decimal point, the following zero cannot bypass)

Ndd.mmmm is latitude information with units of degrees and minutes and the dd expresses degree, mm.mmmm expresses minute (Accuracy for 4 after the decimal point, the following zero cannot bypass)

Rzzz.z is radius for the domain (999.9 - 0.1), unit for KM.

When the tracker receives this instruction, judges to be authorized users and confirms the user password correctly, it will send the confirmation messages "SET GEO-FENCE OK" to the sender.

Format 2: 004+ user password E/Wddd.dddddN/Sdd.dddddRzzz.z

eg: 0040000E114.10004N22.55705R999.9

Explanation: E-- east longitude; W-- west longitude; N-- north latitude; S-- south latitude. In this example, uses E and N, please according to the actual geographical position choose corresponding coordinate form to set. In the demonstration, meanings of various parts are as follows:

Eddd.ddddd is longitude information with units of degrees, and the ddd.ddddd expresses degree (Accuracy for 5 after the decimal point, the following zero cannot bypass)

Ndd.ddddd is latitude information with units of degrees, and the ddd.ddddd expresses degree

(Accuracy for 5 after the decimal point, the following zero cannot bypass)

Rzzz.z is radius for the domain (999.9 - 0.1), unit for KM.

When the tracker receives this instruction, judges to be authorized users and confirms the user password correctly, it will send the confirmation messages "SET GEO-FENCE OK" to the sender.

Format 3: 005+ user password Rzzz.z

Explanation: When the tracker receives this instruction, judges to be authorized users and confirms the user password correctly, it will send the confirmation messages "SET GEO-FENCE OK" to the sender. If the GPS data is invalid, it will receive the next one, if it can't get valid data, it will re-back the message: ERROR GPS DATA, TRY AGAIN LATER. Then Restored to its original state (on/off/adaptive).

Note: 1. Radius of the fence can not exceed the definition of its domain; the value of the decimal part for zero must input zero fill. For example: R=1, it is important to enter into 1.0.

2. If the calling state is off, it will not call the user telephone number, and only send messages to the present number.

3. Degree and minute is divided into sexagesimal system converter, that is, 1d = 60m

2) open the electronic fence: 211 + user password

After set successfully, it will send the confirmation messages "GEO-FENCE ON" to the sender.

3) close the electronic fence: 210 + user password

After set successfully, it will send the confirmation messages "GEO-FENCE OFF" to the sender.

3.1.11 historical data upload feature

it need to switch to GPRS mode to set IP, APN and so on in SMS mode, specific instructions and upload format may see the 3.2 based on GPRS operation.

1, historical data records set instruction

Format: # 807 # Password # X # #

Example: # 807 # 0000 # 30 # #

Note: X is a historical record of the sampling frequency, an integer number, the definition of

domain **【0,999】** , the unit is seconds. When the V520 receives the instruction to confirm the user password is correct, set the historical record of the sampling frequency of X. If X = 0, then close the historical data records, if $X \neq 0$, then began to store GPS data as the X seconds time interval, after the success of return to the sender to confirm the information "SET SAMPLING OK".

Note: 1, record the data about the size of each 100B (BYTE).

2, used as a record of historical data storage space allocated size is 864KB (BYTE), data storage stack covered with an updated approach. Suppose X = 30, it can record about 3 days of data, if X = 300, it can record approximately 30 days of data. When the data is full 864KB, the new data received to automatically overwrite the earliest recorded data.

3, if open the power-saving feature, and V520 will keep a long time in a stationary state, then history will automatically shut down until the V520 has been awakened and opened the GPS.

2, historical data upload instructions

A, From a 24-hour history: I

Format: # 808 # user's password # 24 # #

For example: # 808 # 0000 # 24 # #

Note: When the V520 user password to confirm receipt of the directive is correct, return to sender confirmation message: "START UPLOAD 24H HISTORY RECORD". At the same time began to send the last 24 hours of historical data to server, format and GPRS mode, the same as 3.2.10 as shown in the information in the state prompted the STORAGE.

B, Read all the data records:

Format: # 808 # 0000 # #

Description: When the V520 receives the instruction to confirm the user password is correct, return to sender confirmation message: "START UPLOAD ALL HISTORY RECORD". At the same time sent historical data to sever, as shown in formats such as 3.2.10. Prompted the state information is STORAGE.

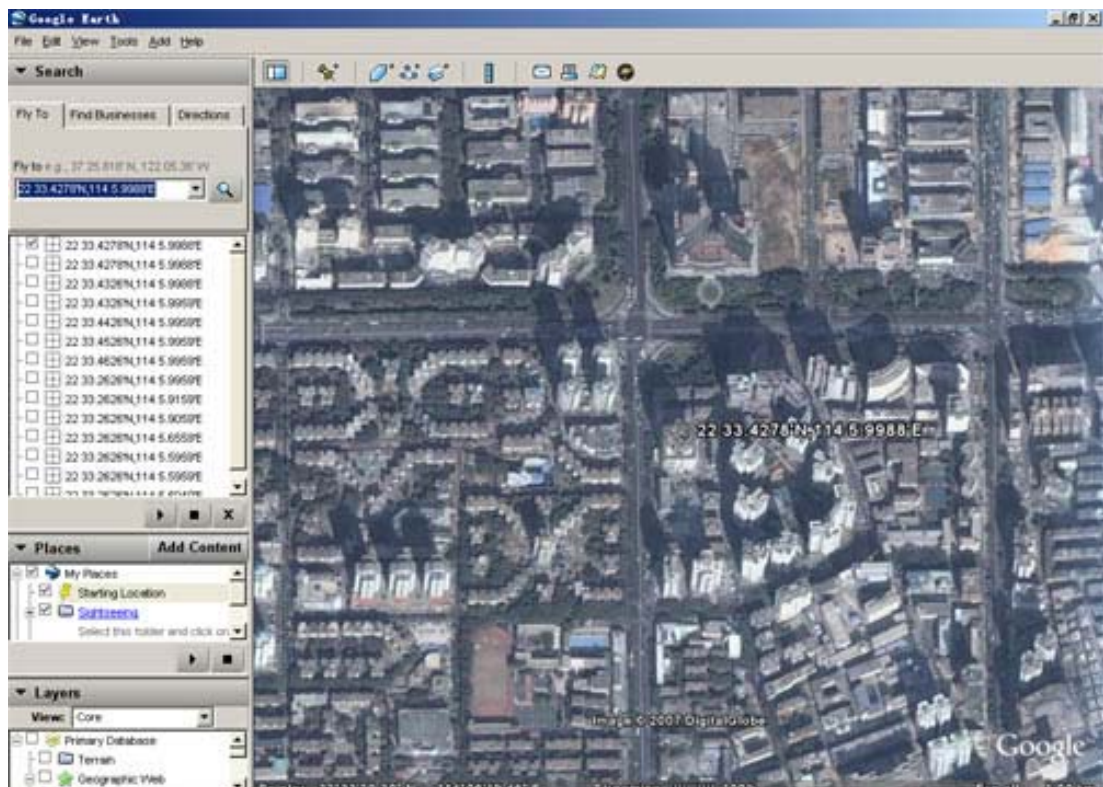
3.1.12 Low voltage warning

When the v 520's working voltage is lower than the set, to read the GPS information, whether or not effective, immediately send the format as 3.1.5 location information to the three stored numbers, the information state item automatically updates STATE: LP. Send a total of three times, each time one minute interval.

3.1. 13 Display the location on map

- 1) Download Google earth software from <http://earth.google.com>
- 2) Start the Google earth software. (For more information about Google earth software, please refer to <http://earth.google.com>)

As following picture shows:



(Note: pay attention to change the position date format)

Or you can start the internet explorer and copy <http://maps.google.com> to connect to Google map website for displaying the location map.

3) You can get the latitude & longitude date by sending "666+password" SMS command code to the GPS tracker v 520. Input the latitude and longitude that you receive from SMS and click

on search button, the Google earth will display the location map for you.

eg: You receive the information from the tracker. As follows:

Lat: +22.50500

Long: +114.01000

Speed: 0.00KM/H

Direction: 315.00

Date: 2008-04-25

Time: 16:39:45

BS: 25ee0dff

Fix: A

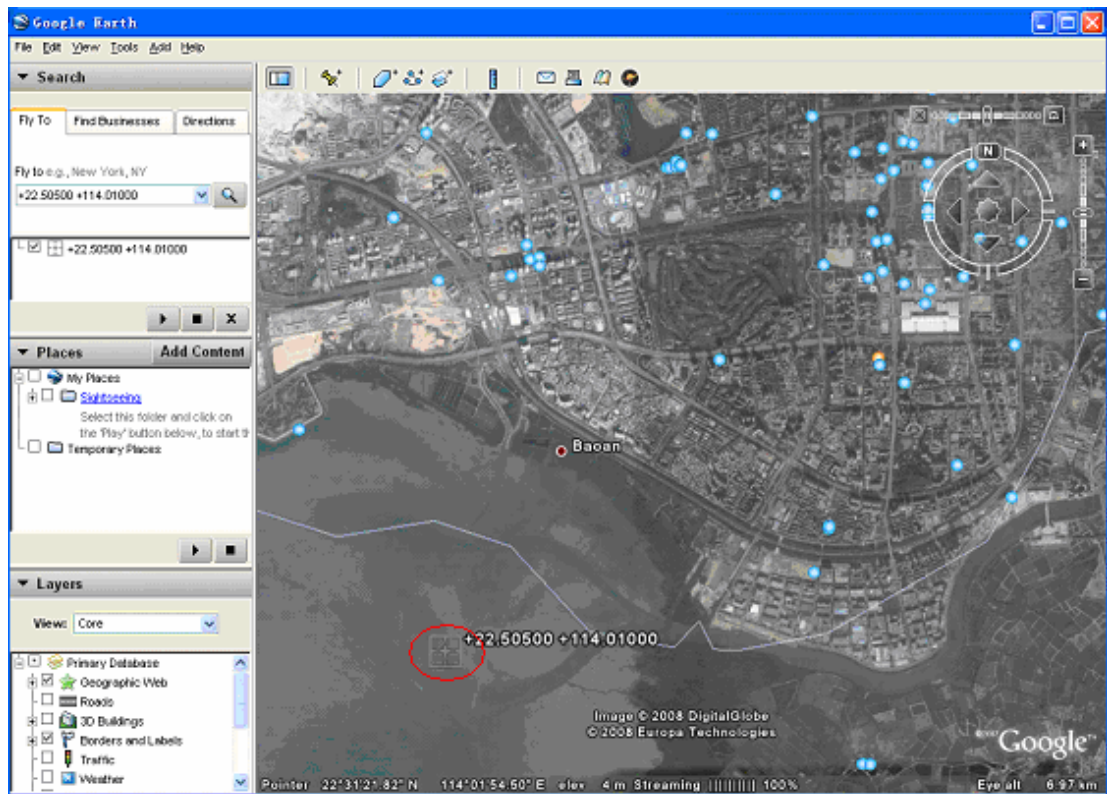
ID: 353686009002030

STATE: SMS

Search the position on the Google map, in relevant position input:

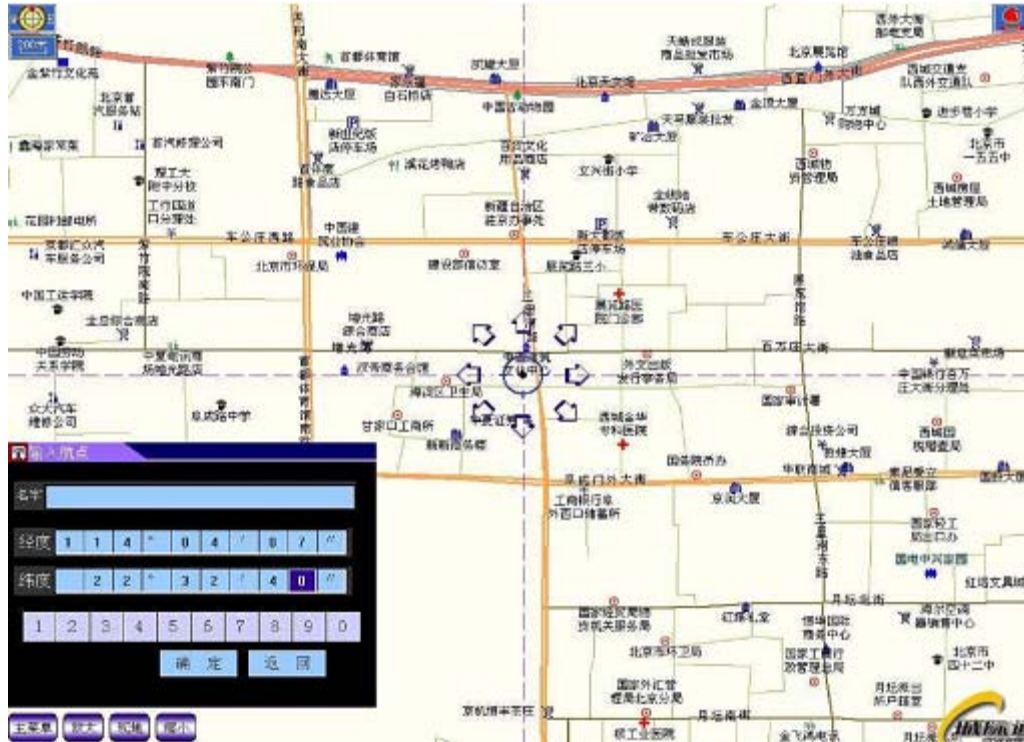
+22.50500 +114.01000

Obtain the following picture:



Or you can use local map software on PDA or car navigation device, input the position date.

(Note: pay attention to change the position date format)



3.2 The operation based on the GPRS application

3.2.1 Change the user password instruction

Format: 777+new password (4 figures) +old password (4 figures)

eg: 77712340000

Explanation: Confirm the user old password correctly; changes the new user password to the old password. After set successfully, it will send the confirmation messages (SET USER PASSWORD OK) to the sender.

Note: The user password is 0000 after factory set or reset.

3.2.2 Set the stored phone numbers instruction

Format: *new number4-20 bytes*password 4 bytes *No.(1-3)**

Explanation: Confirm the user password correctly; changes the new user's number to instead the old. After set successfully, it will send the confirmation messages (SET USER NUMBER

OK) to the sender.

Note: the quantity of setting number is not more than 3, it is empty under reset or factory set, this instruction will be valid when open it next time until re-change or reset.

3.2.3 Change the mode

Format: 710+ user password (4 figures)

eg: 7100000

Explanation: When v 520 tracker receives the SMS and confirms the user password correctly, it switches to the GPRS application mode. After the success, it will send the confirmation messages (SET MODE OK, CURRENT MODE: GPRS) to the sender.

3.2.4 Open the GPS instruction

1. Open the GPS instruction

Format: 222 + user's password 4

For example: 2220000

Description: When V520 received the order and confirmed the user password is correct, it will open the GPS power, after the success it will send confirmation message "GPS ON OK".

2. GPS normally closed mode

Format: 333 + user's password 4

For example: 3330000

Description: When V520 received the order and confirmed the user password is correct, then turn off the GPS, after the success, it will send confirmation message "GPS OFF OK".

3. GPS power-saving mode

1) Command to set GPS power parameter: 199 + user password + S xxx + L yy + H zz

example: 1990000S030L01H03

Description: S030, means to close GPS for 30 minutes, you can set (1 ~ 255). L01 said that the first phase of GPS Open is about 1 minute, you can set (1 ~ 98), if the first stage located, it will turn off GPS and does not enter the second phase; if the first stage there is no location,

then enter the second phase, H03 indicated the total turn-GPS time, which means the second phase is 2 minutes (ie Hzz - Lyy). H can be set (3 ~ 99). When S is set as 0, then it out of power-saving mode automatically and switches to the GPS always open model, that is command 188 will not work. When the V520 received the order and confirmed the user password was correct, it will configure the S / L / H items according to user-defined parameters , after the success , then send confirmation: GPS AUTO MODE: (yy-zz) / xxx Minutes.

Note:

1. Set S / L / H and other parameters, if the peak is 0, then we must write 0..

For example: To turn off GPS 30 minutes is necessary to set the S030, but not the S30.

2, HZZ is the total time set to open GPS can not be less than Lyy.

3, parameters set by 199 for restart will not be lost, reset will not change until the reset.

4, only in the power-saving mode, the V520 can be set timer switch GPS in accordance with 199, the other two modes will not.

3.2.5 Single localization request instruction

Format: 666+ user password (4 figures)

eg: 6660000

Explanation: When v 520 tracker receives the instruction and confirms the user password correctly, reads the GPS information. No matter whether effective, the information with the replying base station which is the set of the original software will be sent to the sender.

Data format:

Lat: Latitude Direction (+/-) Latitude Value (Accuracy for 5 after the decimal point)

Long: Longitude Direction (+/-) Longitude Value (Accuracy for 5 after the decimal point)

Speed: Speed KM/H (Accuracy for 2 after the decimal point)

Direction: Direction (Accuracy for 2 after the decimal point)

Date: Date YYYY-MM-DD

Time: Time HH: MM: SS (GMT)

BS: Base Station information

Fix: Location state (A/V)

ID: IMEI

STATE: Message state

Effective data format:

Lat: +22.50500

Long: +114.01000

Speed: 0.00KM/H

Direction: 315.00

Date: 2008-04-25

Time: 16:39:45

BS: 25ee0dff

Fix: A

ID: 353686009002030

STATE: SMS

Invalid data format:

Lat: +22.50500

Long: +114.01000

Speed: 0.00KM/H

Direction: 315.00

Date: 2008-04-25

Time: 16:39:45

BS: 25ee0dff

Fix: V

ID: 353686009002030

STATE: SMS

If in the cold start and GPS no position, it will return to the void of information: "ERROR GPS GPRMC FRAME DATA BS: 27971054".

3.2.6 Change the user name

Format: #801#user password#new user name##

eg: #801#0000# username##

Explanation: When v 520 tracker receives the instruction and confirms the user password correctly, changes the user name to the new user name. After the success, it will send the confirmation messages to the sender. The content is "CHANGE USERNAME OK".

3.2.7 Change the service password

Format: #802#user password#new service password#old service password ##

eg: #802#0000#1111#0000##

Explanation: When v 520 tracker receives the instruction, confirms the user password and old service password correctly, changes the service password to the new service password. After the success, it will send the confirmation messages to the sender. The content is "CHANGE PASSWORD OK"

3.2.8 Set up the access point name of GPRS

Format 1: #803#user password#APN##

eg: #803#0000#CMNET##

Format 2: #803#user password#APN#APN user name#APN password ##

Explanation 1: Different GSM / GPRS service associations provide different APN, please according to local service providers to provide the APN to choose format 1 or 2 to use set.

Explanation 2: When v 520 tracker receives the instruction and confirms the user password correctly, updates the access point name to the new access point name. After the success, it will send the confirmation messages to the sender. If sent the format 1, the content is "SET GPRS APN OK"; if it is format 2, the content is "SET GPRS ACCOUNT OK".

3.2.9 Set up the TCP/IP server and IP's address and port number

Format: #804#user password#fixed IP address # port ##

eg: #804#0000#222.125.12.32#80##

Explanation: When v 520 tracker receives the instruction and confirms the user password correctly, updates the IP address and port number preserved in the module, After the success, it will send the confirmation messages to the sender. The content is "SET SERVER IP AND PORT OK"

3.2.10 Upload the location instruction at once

Format: #806#user password##

eg: #806#0000##

Explanation: When v 520 tracker receives the instruction and confirms the user password correctly, sends the confirmation messages to the sender. The content is "START GPRS UPLOAD". At the same time, send the data from the memory block to server.

Upload format:

#IMEI # user name #service password #condition

data quantity #the base station's information \$ GPRMC..... # the base station's information
\$ GPRMC..... ##

eg: #123456789000001#V 520#0000#SMS#3

#25ee0dff\$GPRMC,083945.180,A,2233.4249,N,11406.0046,E,0.00,315.00,251207,,,A*6
E

#25ee0dff\$GPRMC,083950.180,A,2233.4249,N,11406.0046,E,0.00,315.00,251207,,,A*6
E

#25ee0dff\$GPRMC,083955.180,A,2233.4249,N,11406.0046,E,0.00,315.00,251207,,,A*6E
##

3.2.11 uploads information timing automatically

Format: # 805 # user's password # T # sampling interval of data each time you upload a number of N # #

Example: # 805 # 0000 # 12 # 5 # #

Function Description: The sampling time T in seconds, defines the domain of 【10 , 59999】, each time the number of upload data is N, defines the domain for the 【1.50】. When the V520 receives the instruction to confirm the user password is correct, the sender will send confirmation short message: SET GPS SAMPLING TIME AND QUANTITY OK. Instructions specified the sampling interval is T, a continuous reading GPS NEMA data in the \$ GPRMC statement, and stored in memory. When the stored number reaches to the number of set, it began to connect GPRS server and send the data. If data is not sent to the server for reason of net or others, the data is automatically stored, when the network returned to normal it will send data to the server. Upload data formats such as 3.2.10 shows, the data in the state marked as "AUTO". When you set "Every time I upload the data of the number of N" is 0, then close the regular upload and send a confirmation to the sender SMS: GPRS TIMER STOP.

3.2.12 Phone uploading

When one of the stored numbers call in, and hang up after rings 2-5 times, it looks as 3.2.9 state(the state is CALL)

eg: #123456789000001#V-520 #0000#call#3

#25ee0dff\$GPRMC,083945.180,A,2233.4249,N,11406.0046,E,0.00,315.00,251207,,A*
6E

#25ee0dff\$GPRMC,083950.180,A,2233.4249,N,11406.0046,E,0.00,315.00,251207,,A*
6E

#25ee0dff\$GPRMC,083955.180,A,2233.4249,N,11406.0046,E,0.00,315.00,251207,,A*
6E ##

3.2.13 Monitor function

The product has active and passive monitoring function, a passive monitoring function is, when pre-existing user dial SIM card numbers and rings 6 sounds, it will change into monitoring state, calling client can monitor the surrounding background sound. Product proactive monitoring function, when in case of emergency, the user can press the SOS button 3 seconds, the product will take the initiative in turn to dial stored subscriber number, it can ask for help when connected.

Note: This feature is valid in both SMS and GPRS mode.

3.2.14 Upload the emergency case

Explanation: When press the SOS key more than 3 seconds; it will upload such data as show on 3.2.10.

3.2.15 Electronic fence function

Explanation: After setting this function, take the set coordinates as the center, the set radius parameter to determine the scope of electronic fences. When the current location of the tracker beyond the scope, the tracker will forwardly send the stored telephone numbers location information format as 3.1.5 to the presetting user number, the information state item automatically updates STATE: OS.

When the product re-entered the scope of the fence will be set up immediately to the 3 numbers send a 3.1.5 location information formats. Tips for the state information STATE: RS. At the same time, it will call the stored first phone number. If unsuccessful (or can not be switched off), then in turn call the second, third.

1. Set the scope of fence

According to the different format of input value, the user can choose the following format instruction operation.

Format 1: 003 + user password + E /wddmm.mmmmN/sddmm.mmmmRzzz.z

eg: 0030000E11406.0024N2233.4230R0.1

Description: E – East Longitude; W – West longitude; N - north latitude; S - South latitude. In this case, using E, N, please select the appropriate location according to the actual coordinates of the format settings. The meaning of the various parts of the example is as follows:

Exxxx.xxxx is degree longitude information (decimal point behind the four, followed by zero can not be omitted)

Nyyyy.yyyy is degrees latitude information (decimal point behind the four, followed by zero can not be omitted)

zzz.z is the radius of the domain as a 【999.9 - 000.1】 , units KM.

When the module receives the instruction and confirm the user password is correct, it will send short message to confirm: SET GEO-FENCE OK.

For example: through a single location (666 + user's password), the latitude and longitude, such as: Lat: +22.50500

Long: +114.01000

The format: Lat: + dd.ddddd Long: + ddd.ddddd , the instruction must converted to format 1t 1 (Lat: + ddmm.mmmm Long: + dddmm.mmmm) before being used. Where d is the degree and m is points.

Format 2: 004 + user password + E /wddd.ddddd N/sdd.ddddd Rzzz.z

eg: 0040000E114.10004 N22.55705 R999.9

Description: E – east longitude; W – West longitude; N - north latitude; S - South latitude. In this case, using E, N, please select the appropriate location according to the actual coordinates of the format settings. The meaning of the various parts of the example is as follows:

Exxx.xxxxx is degrees longitude information (decimal point behind the four, followed by zero can not be omitted)

Nyy.yyyyy is degrees latitude information (decimal point behind the four, followed by zero can not be omitted)

zzz.z is the radius of the domain as a 【999.9 - 000.1】 , units KM.

When the module receives the instruction and confirm the user password is correct, it will send short message to confirm: SET GEO-FENCE OK.

Note:

1. the fence can not exceed the radius of its domain.
2. If the caller status is off, it will not dial again and send text messages to pre-existing customers only.
3. The latitude and longitude of instruction format 2 can be a single location (666 + user's password) to be like: Lat: +22.50500 (Lat: + dd.ddddd) Long: +114.01000 (Long: + ddd.ddddd)

Instruction format 3: 005 + user's password Rzzz.z

For example: 0050000R0.1

Note: When the module receives the instruction and confirm the user's password is correct, and determine whether the GPS is open, if open, it will read the latest GPS data from the serial port to determine whether if valid (whether the second item is A). if valid, it will extract the current latitude and longitude as circle center of coordinates, and use R as radius, at the same time open the electronic fence, it will return confirmation message GEO-FENCE ON to sender after the success. If read the latest GPS data from the serial port is not valid, it will give up, and continue to receive the next one, if has not yet received valid data in 50 seconds, then return to the sender: ERROR GPS DATA, TRY AGAIN LATER. The GPS restore to the original state (On / Off / Adaptive).

3.2.16 historical data upload feature

it need to switch to GPRS mode to set IP, APN and so on in SMS mode, specific instructions and upload format may see the 3.2 based on GPRS operation.

1, historical data records set instruction

Format: # 807 # Password # X # #

Example: # 807 # 0000 # 30 # #

Note: X is a historical record of the sampling frequency, an integer number, the definition of domain **【0,999】**, the unit is seconds. When the V520 receives the instruction to confirm the user password is correct, set the historical record of the sampling frequency of X. If X = 0, then close the historical data records, if $X \neq 0$, then began to store GPS data as the X seconds time interval, after the success of return to the sender to confirm the information "SET SAMPLING OK".

Note: 1, record the data about the size of each 100B (BYTE).

2, used as a record of historical data storage space allocated size is 864KB (BYTE), data storage stack covered with an updated approach. Suppose X = 30, it can record about 3 days of data, if X = 300, it can record approximately 30 days of data. When the data is full 864KB, the new data received to automatically overwrite the earliest recorded data.

3, if open the power-saving feature, and V520 will keep a long time in a stationary state, then history will automatically shut down until the V520 has been awakened and opened the GPS.

2, historical data upload instructions

A, From a 24-hour history: I

Format: # 808 # user's password # 24 # #

For example: # 808 # 0000 # 24 # #

Note: When the V520 user password to confirm receipt of the directive is correct, return to sender confirmation message: "START UPLOAD 24H HISTORY RECORD". At the same time began to send the last 24 hours of historical data to server, format and GPRS mode, the same as 3.2.10 as shown in the information in the state prompted the STORAGE.

B, Read all the data records:

Format: # 808 # 0000 # #

Description: When the V520 receives the instruction to confirm the user password is correct, return to sender confirmation message: "START UPLOAD ALL HISTORY RECORD". At the same time sent historical data to sever, as shown in formats such as 3.2.10. Prompted the state information is STORAGE.

3.2.17 Low voltage upload

Explanation: When the v 520's working voltage lower than the set, it will upload data in such format as shown in 3.2.10.

4.1 Auxiliary functions

1, command reset * RESET # 0000 # #.

Description: This command resets all the configuration information after the restart to the factory configuration.

2, instructions to restart * RESTART # 0000 # #

Description: This directive is only restart the V520, do not reset the configuration information.

3. Command of Calling switch

Calling off format: 150 + User Password

For example: 150000

Calling open format: 151 + User Password

For example: 1510000

Function: When V520 receive calling off instructions and confirm the user password is correct, it will close the calling features (including the SOS, power failure alarm calling, alarm of the fence cross-border), then send confirmation message "SET VOICE CALL: OFF " after the success. When V520 receive open command and confirm the user password is correct, it will open calling features (including the SOS, loss of power (pressure) alarm calling, calling of fence cross-border), after the success of it will send confirmation message " SET VOICE CALL: ON ".

4. read the current configuration of the module

Format: * GTAS #

Description: When the module received instruction and return to save all the settings in module.

Data Format:

IMEI: Identity marking yards

MOD: Point to Point (SMS P2P 2) / SMS platform (SMS SC) / GPRS

GPS: normally open (ON) / normally closed (OFF) / power (AUTO)

HFR: hands-free Switch

MTPRF: listen (SILENT) / Normal (NORMAL)

BS: Returns information on the number of base stations,

GEO-FENCE = ON / OFF longitude values of the direction of longitude, latitude values of the direction of latitude (R radius value (minimum 0.1KM)

GEO-FENCE STATE: RS / OS

DEFENCE: ON / OFF power switch alarm

VOICE: ON / OFF switch calling

POWER: ON / OFF power switch off oil

RATE:

ST: request location information from time to time interval

TN: SMS mode, from time to time request number

GU: GPRS user name, password,

SRV: Server IP address, port number,

APN: GPRS access point, APN user name, APN user password

SAMP: From sampling interval, a Number of upload (uploading from time to time to go car track mode)

SAMP2: (stopping from time to time upload throttling mode)

HISTORY SAMP: History From sampling interval

5. Read all current numbers and passwords password

SMS command format: * GTAN #

Description: When the module, after receiving instructions to return the module in the deposit of all numbers and passwords, including service center number and password, your user name and password.

Data Format:

U1: Number one, the password

U2: Number 2, password

U3: No. 3, password

SC: Service Center number, service password

4.2 State marked

1, point to point model

666 single request	SMS
4XX timer sending	TIMER
monitoring	ANSWER
CALL for help	SOS
out of the fence	OS
enter into fence	RS
historical data upload	STORAGE
low power alarm	LP

2, GPRS model

666 one-time request	SMS
806 single-location sending	SMS
timing Upload	AUTO
Phone upload	CALL
monitoring	ANSWER
Emergency	SOS
out of the fence	OS
enter into fence	RS
historical data upload	STORAGE
low power alarm	LP

4.3 Reset the state list

configuration	state	configuration	state	configuration	state
Working mode	Point to point	Stored calls	Empty	password	0000
GPS	On	Timing send	Stop	Number of stations	1
power	on	e-fence	Off	ANP	CMNET
User name	V500	GPRS password	0000	IP address	0.0.0.0 0000
Timing upload	stop	Historical data sample	stop	Historical data upload	stop

4.4 Instruction Set

Instruction	Explanation
700+ user password	SMS Mode
710+ user password	GPRS Mode
222+ user password	Open GPS In two modes
333+ user password	Close GPS In two modes
4xx+ user password	Regularly upload in SMS mode
555+ user password	Quantity of return base-stations in two modes
666+ user password	Return Single localization to user number in two modes

777+new password + old password	Change user password in two modes
#801#user password # new user name##	Change the user name in GPRS mode
#802#user password # new service password # old service password ##	Change service password in GPRS mode
#803# user password #APN##	Set up access GPRS points in GPRS mode
#804#user password # fixed IP address # port ##	Set up TCP / IP server's IP address and port number in GPRS mode
#805#user password# sampling interval # the number of upload data each time ##	Upload data set in GPRS mode
#806# user password ##	Upload the current position immediately in GPRS mode