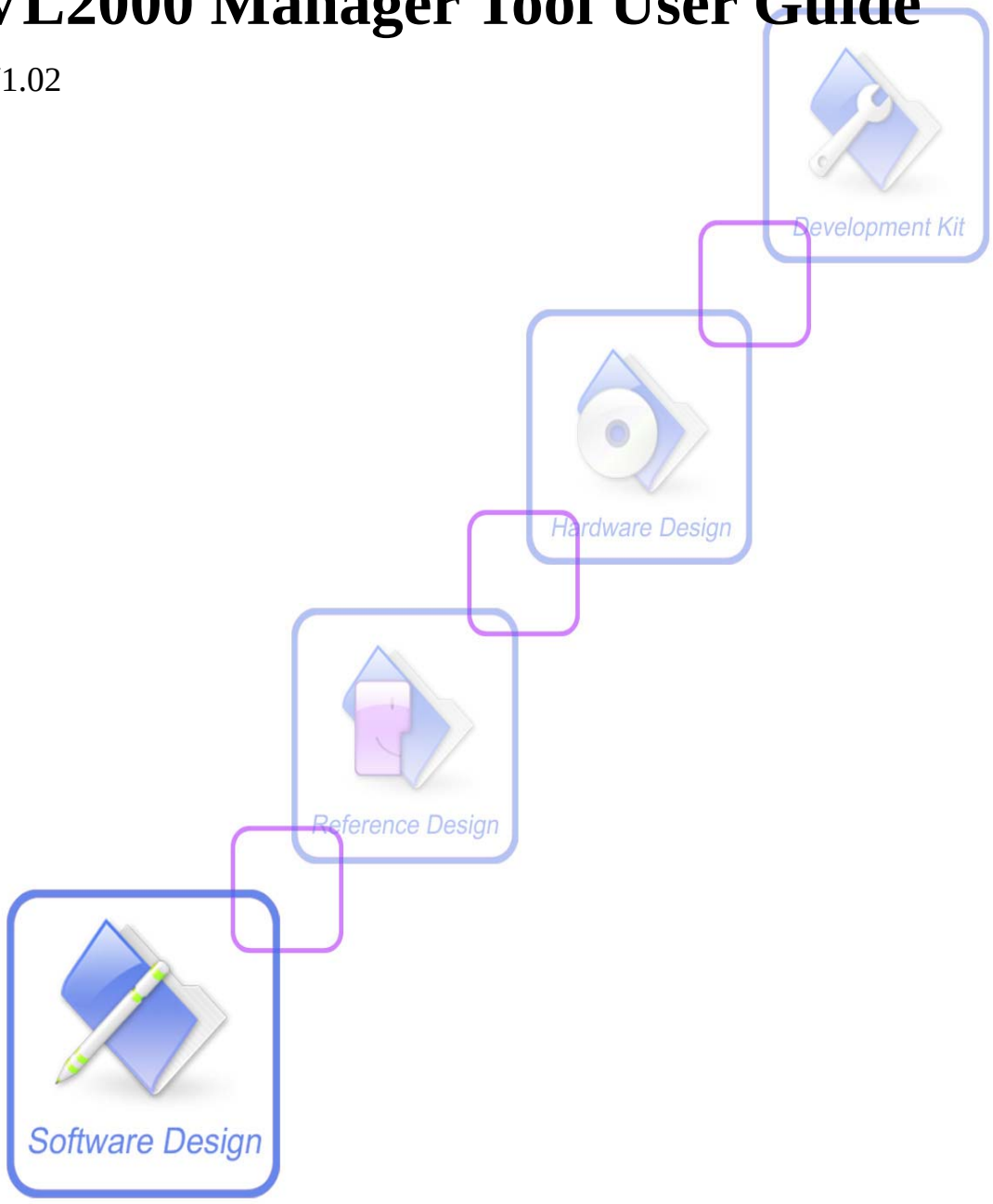
VL2000 Manager Tool User Guide

V1.02



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Revision history

Revision	Date	Description of change	Author
V1.01	2011-12-02	Origin	Yang.chen
V1.02	2012-02-17	Modified SOS key description in chapter 4.3	Yang.chen

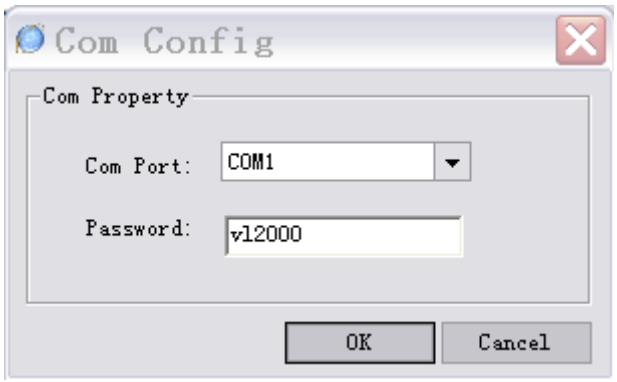
1. VL2000 Manager Guide

VL2000 manager tool is a PC software which can be used to configure VL2000 through "Data and Charge Cable" interface. It is easy for the backend server developers to configure VL2000 with the manager tool, which has user-friendly interface. The correct command messages sent to VL2000 will be displayed on the management tool. (These messages can also be sent by SMS or GPRS).

Follow the steps below to start:

1. Install the data cable driver "PL-2303 driver Installer.exe".
2. Power on VL2000.
3. Connect VL2000 to PC.
4. Run "VL2000 Manager.exe".

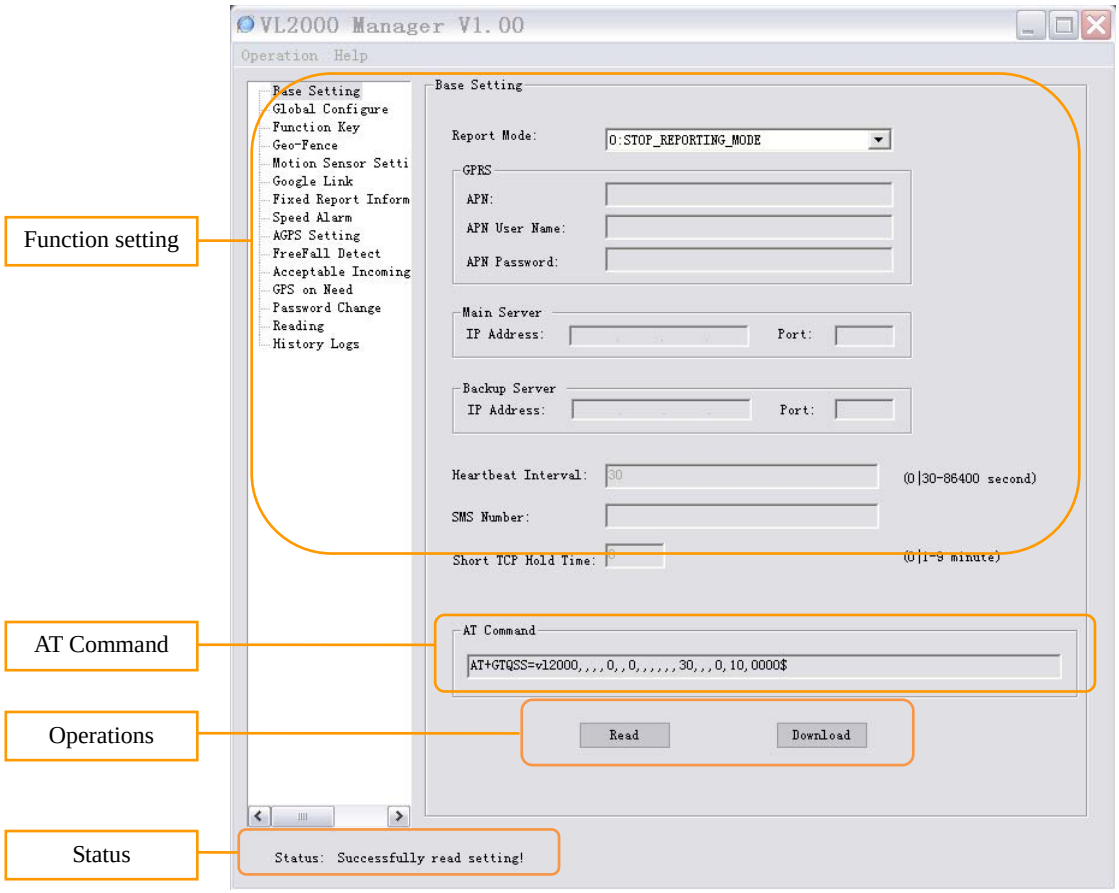
2. Main Setting



Select the correct com port from the port list, which is displayed in user PC's "Device Manager" and input the password, with the default value "vl2000".

If the password is incorrect, the parameter that users set will not be downloaded to the terminal.

3. The Main Window



➢ **Function setting**

The function setting zone is used to set and view the parameters of the function.

➢ **AT Command**

This column shows the command message which will be sent to the terminal. The command message can also be sent to the terminal through SMS or GPRS.

Note: The last parameter of "AT command" (the parameter before '$' character) is the sequence number for command. It will be invoked in the ACK message of the command.

➢ **Operations**

[Read]: Import the setting from the local configuration.

[Download]: Download the settings to the terminal via AT command.

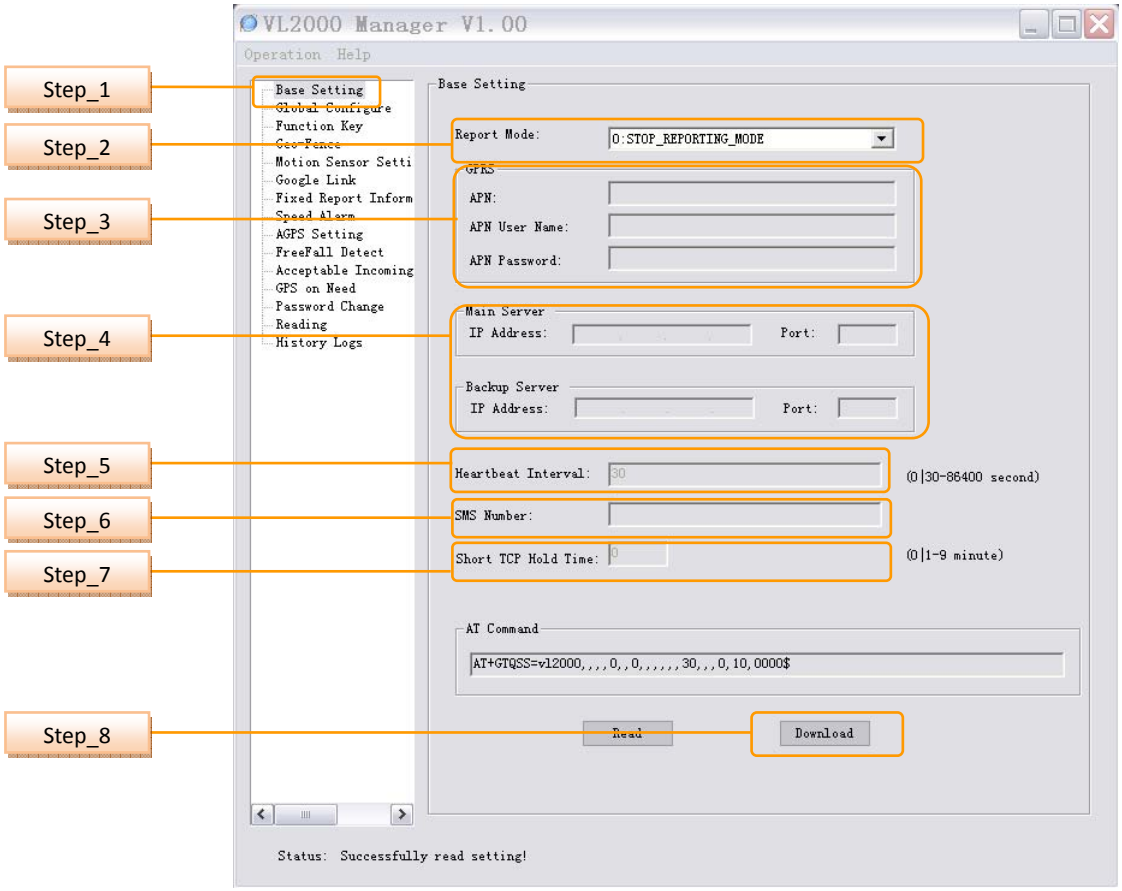
➢ **Status**

Display the status of operation, including the serial port status.

4. An Example to Configure VL2000

The manager tool is developed based on the VL2000 Air Interface Protocol. Refer to *"VL2000 Air Interface Protocol"* for detailed references.
Following is a general procedure to configure VL2000 with manager tool.

4.1 Set the Parameters of Base Setting



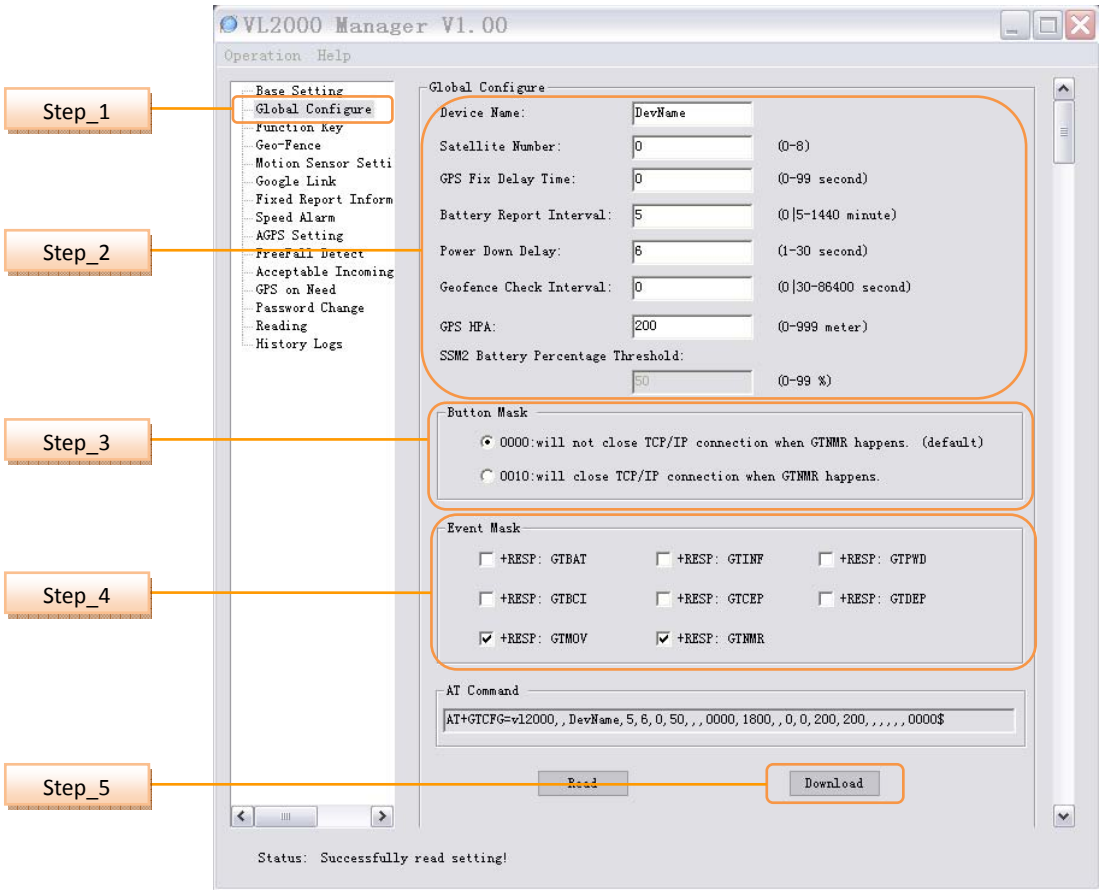
Step_1: Select *"Base Setting"* option.
Step_2: Select *"Report Mode"*.
There are six modes to be selected "0" - "6".
If the settings are *"1"*, *"2"*, *"3"*, *"4"*, *"5"*, then *"Main Server"* input is mandatory.
If the setting is *"1"*, *"3"*, *"6"*, then *"SMS Number"* input is mandatory.
Step_3: Get the *"APN"*, *"APN User Name"* and *"APN Password"* information from your telecom operator. Input them in the corresponding fields.
If "APN" is null, the module will use the last value.
Step_4: Input *"IP Address"* and *"Port"* of main server, backup server input is optional.
Step_5: Edit the *"Heartbeat Interval"*, Default value is 30 seconds.

Step_6: Input *"SMS Number"*. It is the number of mobile device to which SMS will be sent. The SMS contains AT response or event report.

Step_7: Set "Short TCP Hold Time". It can be set only when *"Report Mode"* is set to *"1"* or *"2"*.

Step_8: Download the base setting. The parameters of GTQSS are changed.

4.2 Set the Parameters of Global Configure



Step_1: Select *"Global Configure"* option.

Step_2: Set a group of parameters:

- ✧ Set *"Device Name"*. Set the device name, the length of string is 3-10 bytes. Null input means it is the current value without change.
- ✧ Set *"Satellite Number"*. Normally, 4 satellites are relatively reasonable value. Default value is 0.
- ✧ Set *"GPS Fix Delay Time"*.
  After successful fix, the position information is deemed valid only when the consecutive positioning seconds are not smaller than the set value. Default value is 0 second.
- ✧ Set *"Battery Report Interval"*. It is the time interval for periodically reporting battery level. Default value is 5 minutes.

- ✧ Set *"Power Down Delay"*. The terminal will send data to server after user presses power key for more than 3 seconds to power off the terminal. The power delay time is the maximum time to complete data transmission, after which the terminal will be shut down completely. Default value is 6 seconds.
- ✧ Set "*Geofence Check Interval*". Location interval for geofence evaluation, if any geofences are provisioned. Each geofence is evaluated against the location returned at this interval. 0 means no check.
- ✧ Set "*GPS HPA*". Horizontal Position Accuracy. After successful fix, the position information is valid only when it is not more than the set value. User could set that value according to its HPA requirement. For example, when the set value is 18 meters, the majority of drift could be controlled within 36 meters. While the value is too small, (like 10 meters), it might significantly increase the time to fix.
- ✧ Set *"SSM2 battery percentage threshold":* Under the premise of setting the "Super sleep mode" parameter to automobile mode (value 2), if the battery percentage is lower than this value, the terminal will enter super sleep mode unconditionally.
  Note: It is editable only when "Super sleep mode" parameter is set to 2.

Step_3: Set *"Button Mask"*.

0000: Not close TCP/IP connection when GTNMR happens. (default)
0010: Close TCP/IP connection when GTNMR happens.

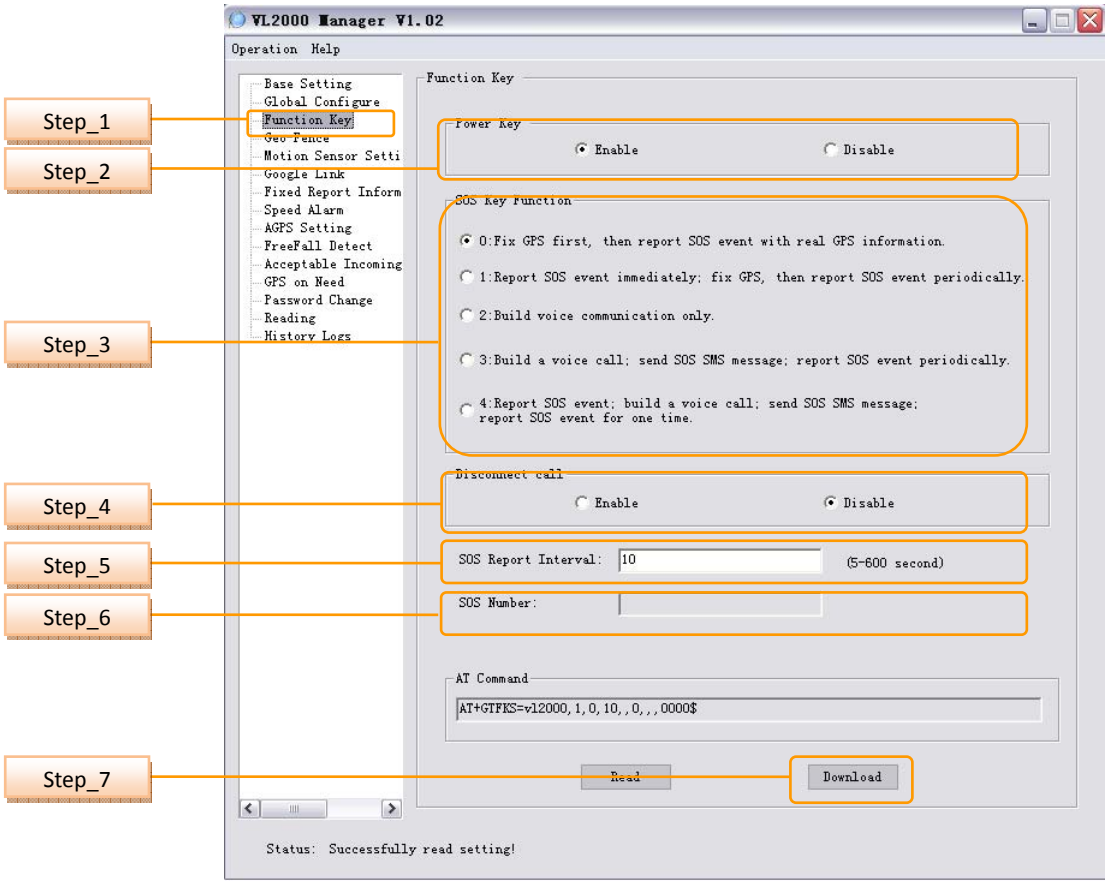
Step_4: Set *"Event Mask"*.

Totally nine events are listed. If the event is chosen, the corresponding report message can be sent to the backend server when that event happens. Otherwise, it will not send the report message to the backend server.

"+RESP:GTBAT"	Real time battery level report
"+RESP:GTINF"	Device information report. It is reported when the terminal is powered on.
"+RESP:GTPWD"	Device power down report. It is reported when the terminal is powered down.
"+RESP:GTBCI"	Report illegal incoming call if the incoming call number is not in the white list set in Google link function.
"+RESP:GTCEP"	Connect to external power supply report
"+RESP:GTDEP"	Disconnect from external power supply report
"+RESP:GTMOV"	Movement detected by motion sensor report
"+RESP:GTNMR"	Non movement detected by motion sensor report.

Step_5: Download global configuration. The parameters of GTCFG are changed.

4.3 Set the Parameters of Function Key



Step_1: Select *"Function Key"* option.

Step_2: Set *"Power Key"* function. Default value is "1".

Step_3: Set *"SOS Key Function"*. Default value is "0".

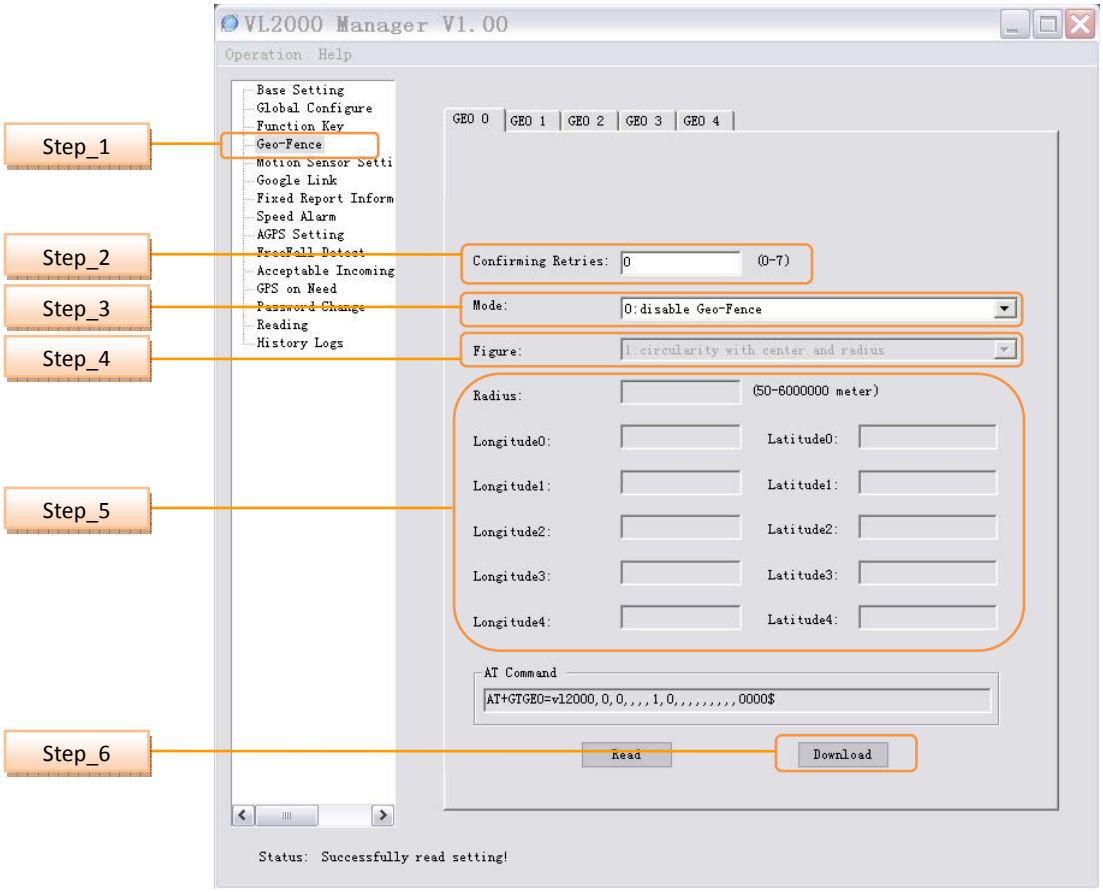
Step_4: Set *"Disconnect call"* function. Default value is "0".

Step_5: Set *"SOS Report Interval"*. It indicates the interval of GPS information report. Default value is 10 seconds.

Step_6: Set "*SOS Number*". It is the number to which voice communication connects.

Step_7: Download function key settings. The parameters of GTFKS are changed.

4.4 Set the Parameters of Geo-Fence



Step_1: Select *"Geo-Fence"* option.

Step_2: Set the parameter *"Confirming Retries"*. When a geofence violation is first detected, there shall be this many position retries which attempt to confirm that the position is consistently in violation. The retries shall occur 10 seconds apart. If any of the retries return a position that does not qualify, then the GTGEO report will not be sent. Failure to get some or all of the retry fixes shall not prevent the alarm. 0 means no retry.

Step_3: Select *"Mode"*.

0: disable the fence

1: report when it enters the Geo-Fence range.

2: report when it leaves the Geo-Fence range.

3: report when it enters or leaves the Geo-Fence range.

Step_4: Select *"Figure"*.

1: circularity with center and radius

2: circularity with center and one point on the circle

3: triangle

4: quadrangle

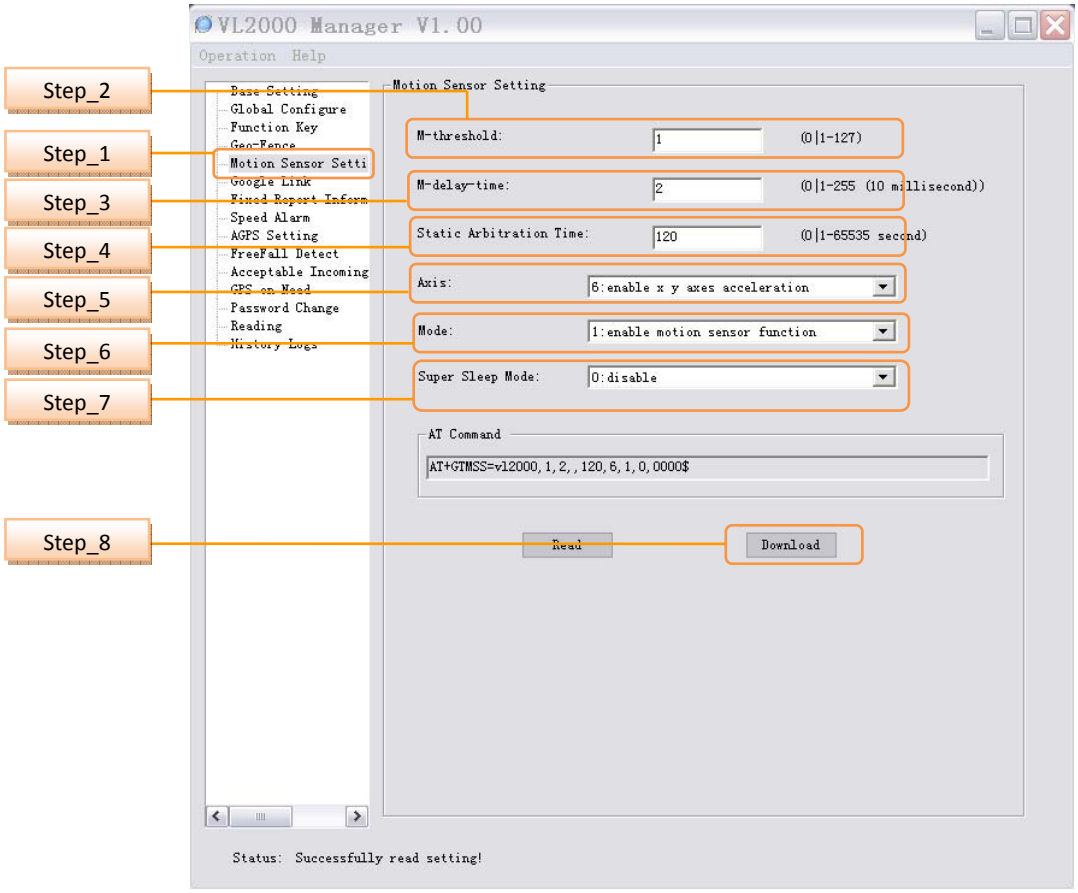
Note: It can be selected only when "Mode" is not 0.

Step_5: Set the graphic parameter.

Step_6: Download Geo fence setting. The parameters of GTGEO are changed.

Note: Maximum five fences can be set. After the fences settings are completed, the terminal will calculate and set the entire fence based on input parameters.

4.5 Set the Parameters of Motion Sensor Setting



Step_1: Select *"Motion Sensor Setting"* option.

Step_2: Set *"M-threshold"* parameter.

<M-threshold>: M-threshold is a parameter to decide the threshold of Movement Event Report. The movement is judged when terminal detects that its acceleration exceeds the preset acceleration threshold and movement time exceeds the preset movement cycle. Then it will report these events to GPS module. GPS module will process the request and follow the requirement whether to report the data to the server.

<M-threshold> = Acceleration value (g)/0.063

0 means use the default value1.

Step_3: Set *"M-delay-time"* parameter. It is the time that the terminal's acceleration maintains. The range is 0-255. The measure unit is 10 milliseconds.

0 means to use the default parameter 2 (*10 millisecond).

Step_4: Set *"Static arbitration time"* parameter. When terminal enters still from movement, the still status will be judged if the still time exceeds that parameter.

0 means to use the default parameter 120 seconds.

Step_5: Set *"Axis"* parameter.

2: only enable x axis acceleration

4: only enable y axis acceleration

6: enable both x and y axes acceleration

Step_6: Set "*Motion Sensor Enable"* parameter.

0: disable motion sensor function.

1: enable motion sensor function.

Step_7: Select *"Super Sleep Mode"* parameter.

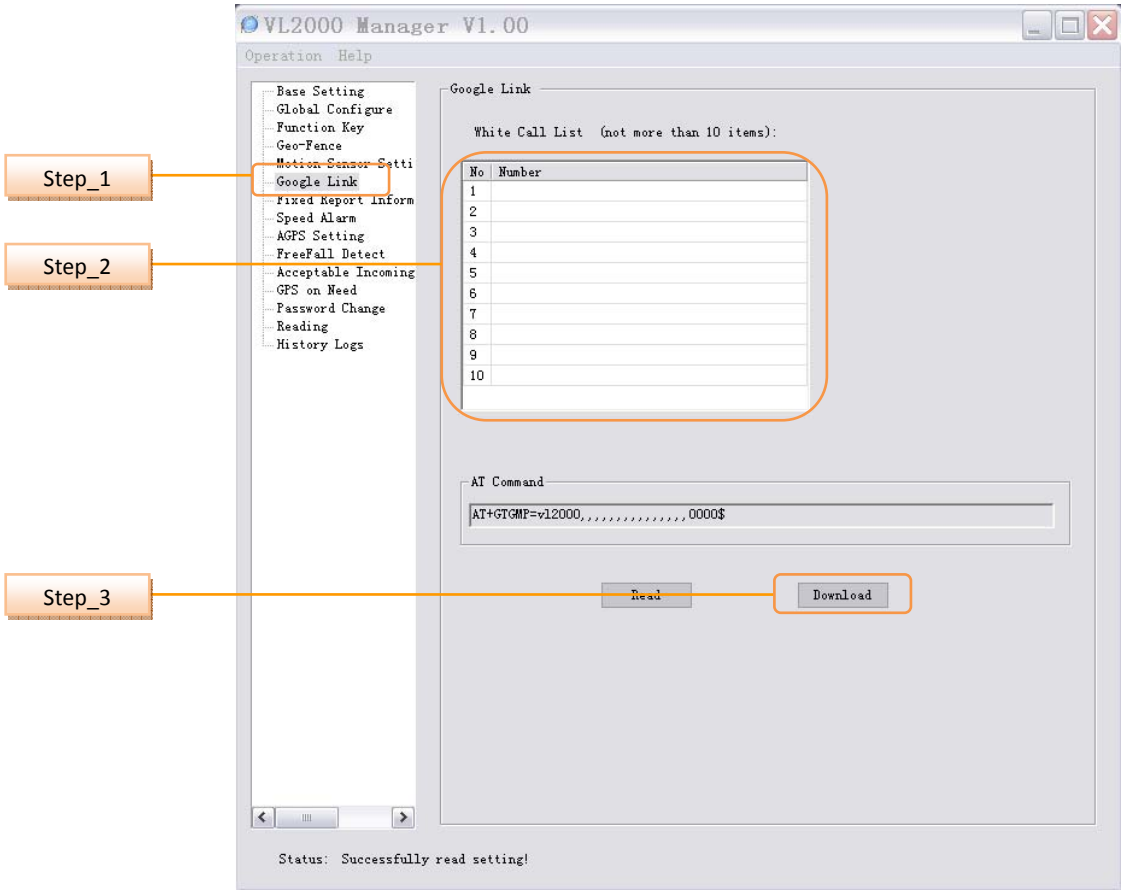
0: disable

1: normal mode

2: automobile mode

Step_8: Download motion sensor setting. The parameters of GTMSS are changed.

4.6 Set the Parameters of Google Link

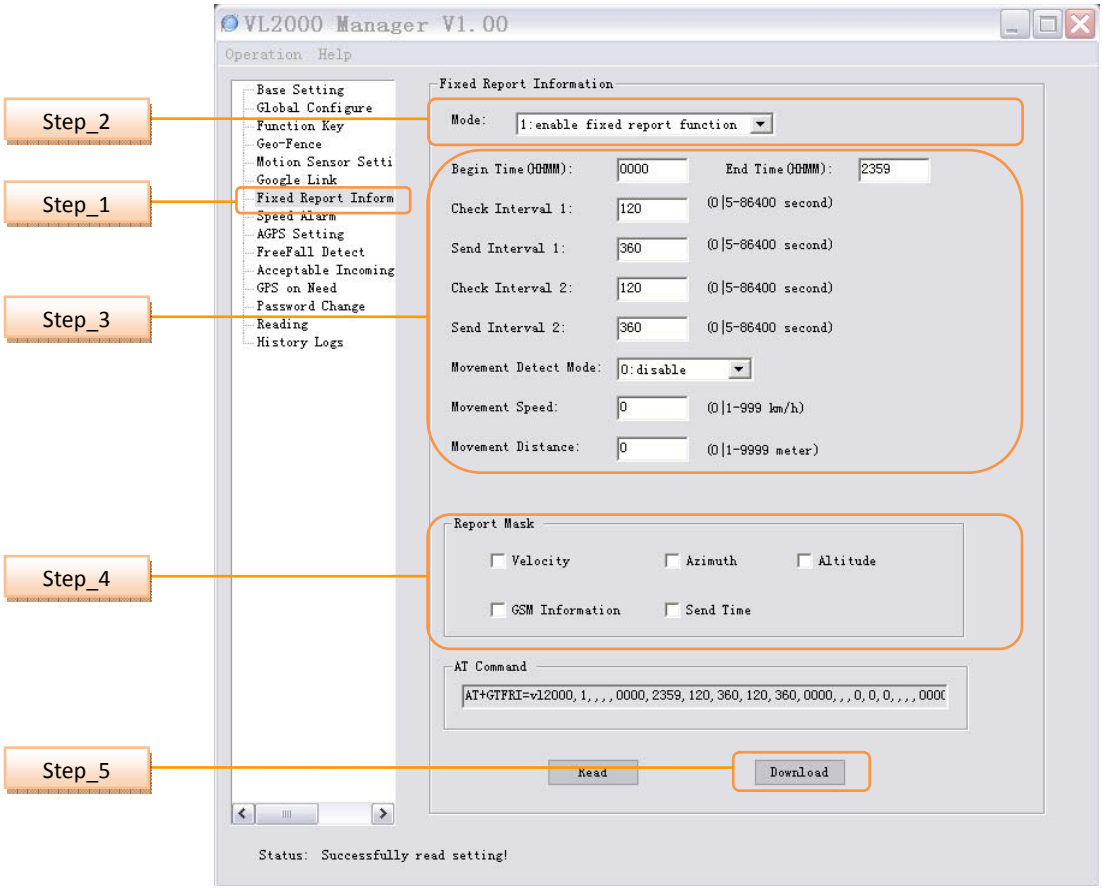


Step_1: Select *"Google Link"* option.

Step_2: Set the number in *"White Call List"*. Once incoming call is from white call list, terminal will terminate the call, and send a SMS to that number which contains a web link leads to current location of terminal. User can click the link to get the terminal's current location.

Step_3: Download Google Link setting. The parameters of GTGMP are changed.

4.7 Set the Parameters of Fixed Report Information



Step_1: Select *"Fixed Report Information"* option.

Step_2: Select *"Mode"*.

0: disable Fixed Report Function.

1: enable Fixed Report Function.

Step 3: Set a group of parameters:

- ✧ Set *"Begin Time"* and *"End Time"*. The start time and end time of scheduled fixed report. It is noticed to use UTC time here.
- ✧ Set *"Check Interval 1"*. The interval time to fix GPS when the terminal is in motion state. 0 means no check. Default value is 120 seconds.
- ✧ Set *"Send Interval 1"*. The period to send the position information when the terminal is in motion state. 0 means not to send. Default value is 360 seconds.
- ✧ Set *"Check Interval 2"*. The time interval to fix GPS when the terminal is in motionless state. 0 means no check. Default value is 120 seconds.
- ✧ Set *"Send Interval 2"*. The period to send the position information when the terminal is in motionless state. 0 means not to send. Default value is 360 seconds.
- ✧ Select *"Movement Detect Mode"*.

0: disable (default)

1: enable

- ✧ Set *"Movement Speed"*. The speed threshold of movement detection. 0 means not to detect speed.
- ✧ Set *"Movement Distance"*. The distance threshold of movement detection. 0 means not to detect distance.

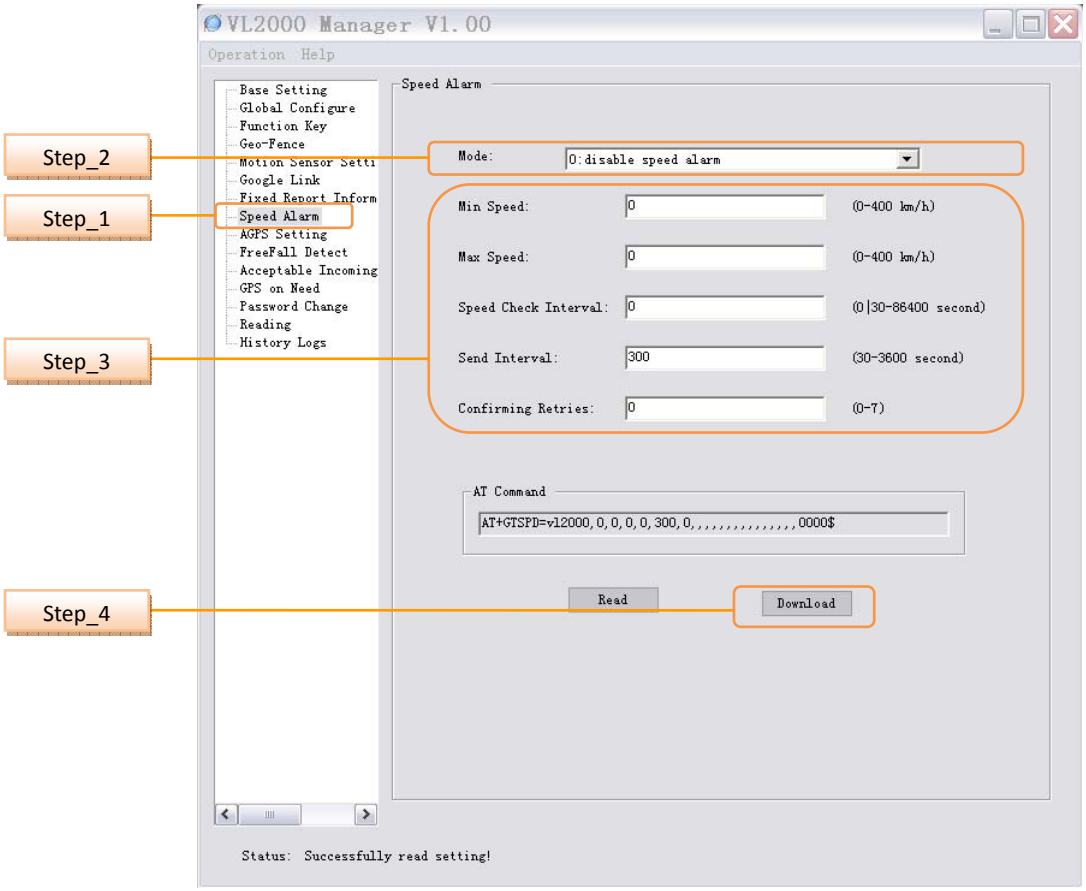
Step 4: Configure the composition of GPS position information for fixed report.

- ✧ Speed
- ✧ Azimuth
- ✧ Altitude
- ✧ GSM Information

  including: GSM LAI and CI, including <MCC>, <MNC>, <LAC>, <CELLID>.
- ✧ Send Time

Step 5: Download fixed report information setting. The parameters of GTFRI are changed.

4.8 Set the Parameters of Speed Alarm



Step_1: Select *"Speed Alarm"* option.

Step_2: Select the “Mode”

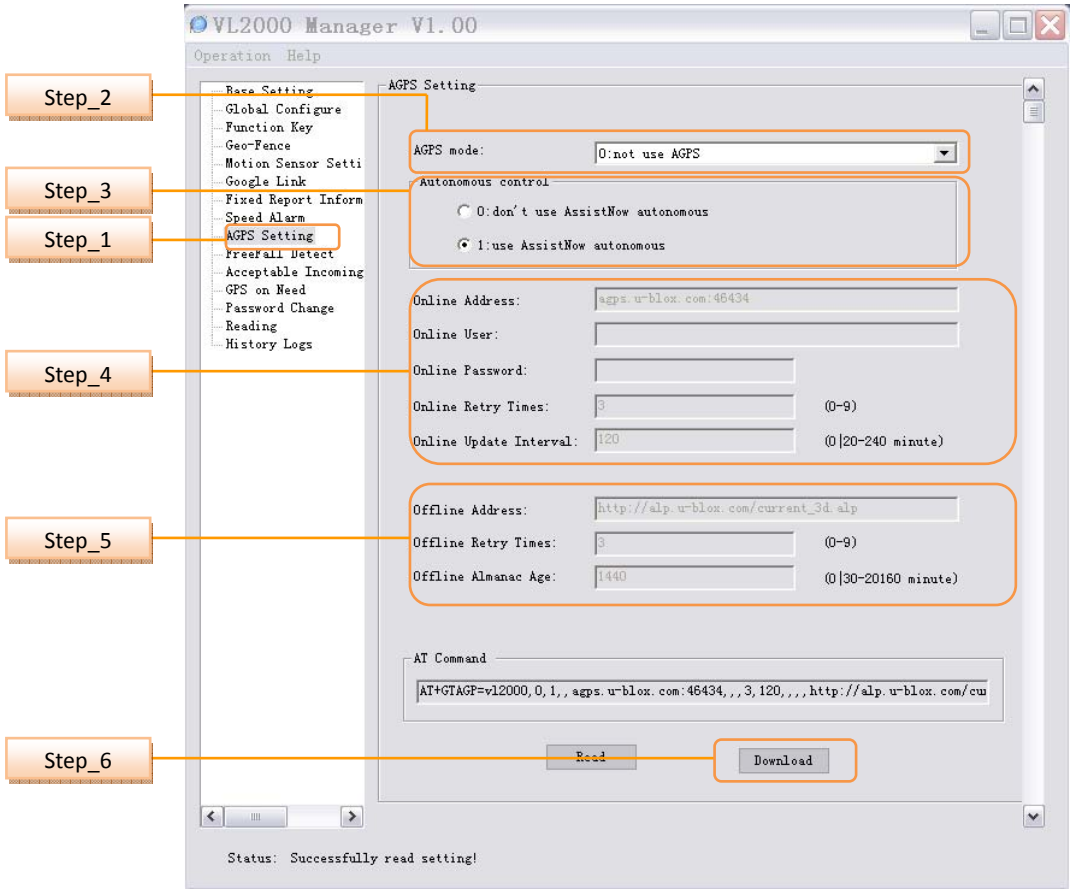
- ✧ 0: disable speed alarm
- ✧ 1: enable when current speed is in the range.
- ✧ 2: enable when current speed is out of the range.

Step_3: Set a group of parameters.

- ✧ Set *“Min Speed”* .The lower limit of the speed range.
- ✧ Set *“Max Speed”* .The upper limit of the speed range.
- ✧ Set *“Speed Check Interval”*. Location interval for speed check purpose. If motion sensor is enabled and no motion is detected then location interval is skipped. 0 means not to check.
- ✧ Set *“Send Interval”*. After the speed alarm is triggered, the GTSPD report is sent every time interval with the latest speed. Speed alarm reports shall not be sent more often than this interval.
- ✧ Set *“Confirming Retries”*. When the speed is first detected in the range for speed alarm, there shall be this many position retries attempt to confirm that the speed is consistently in the alarm range. The retries shall occur 10 seconds apart. If any of the retries returns a speed that does not qualify, then the GTSPD report will not be sent. Failure to get some or all of the retry fixes shall not prevent the alarm. 0 means no retry.

Step_4: Download the change of user password. The parameters of GTSPD are changed.

4.9 Set the Parameters of AGPS Setting



Step_1: Select *"AGPS Setting"* option.

Step_2: Select the *"AGPS Used"*

0: not to use AGPS

1: use AssistNow online AGPS

2: use AssistNow offline AGPS

3: use both AssistNow online and offline AGPS

Step_3: Select the *"Autonomous control"*

Step_4: Set a group of online parameters.

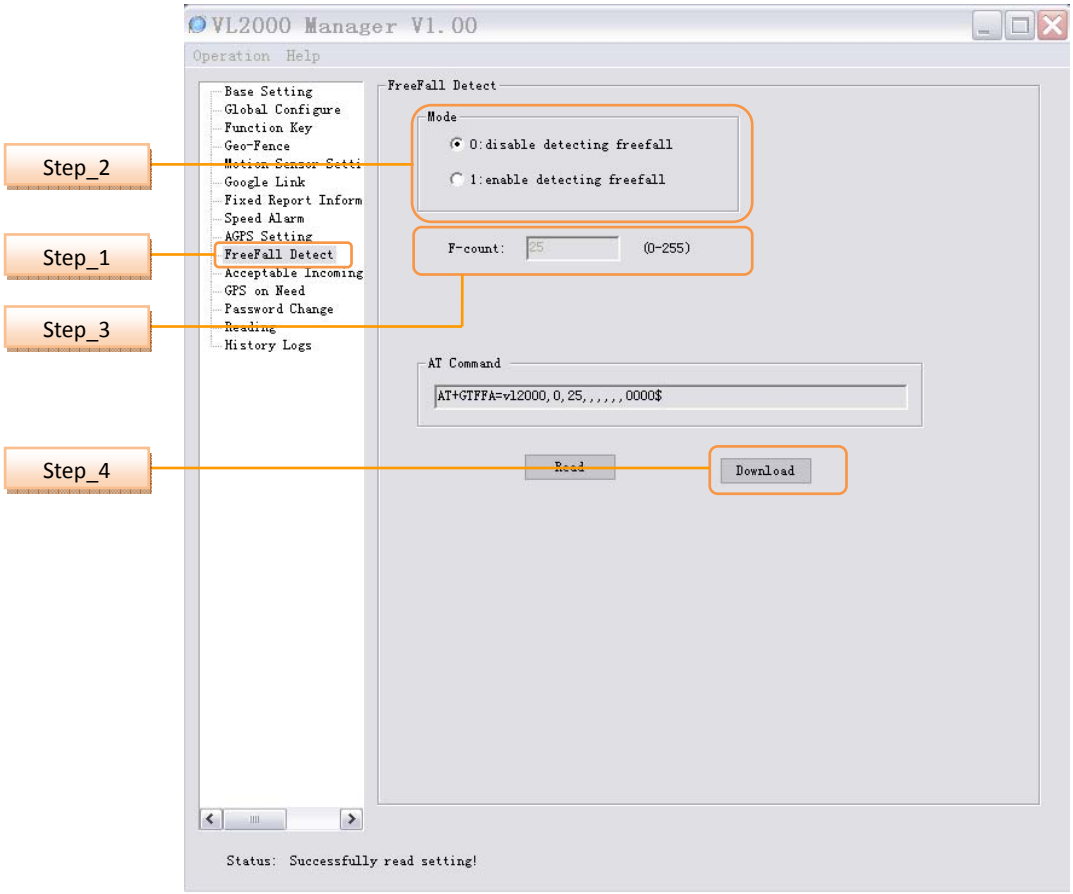
- ✧ Set *"Online Address"*. AssistNow online server Address
- ✧ Set *"Online User"*. AssistNow online server User Name
- ✧ Set *"Online Password"*. AssistNow online server password
- ✧ Set *"Online Retry Times"*. AssistNow online server connect retry times limit
- ✧ Set *"Online Update Interval"*. Update local online data from AssistNow online server time interval.

Step_5: Set a group of offline parameters.

- ✧ Set *"Offline Address"*. AssistNow offline server Address
- ✧ Set *"Offline Retry Times"*. AssistNow offline server connect retry times limit
- ✧ Set *"Offline Almanac Age"*. It indicates the period exceeds which the almanac will be invalid. It is recommended to set it to be more than 4 hours. 0 means no update.

Step_6: Download the change of AssistNow Online/Offline Server information. The parameters of GTAGP are changed.

4.10 Set the Parameters of Free Fall Detect



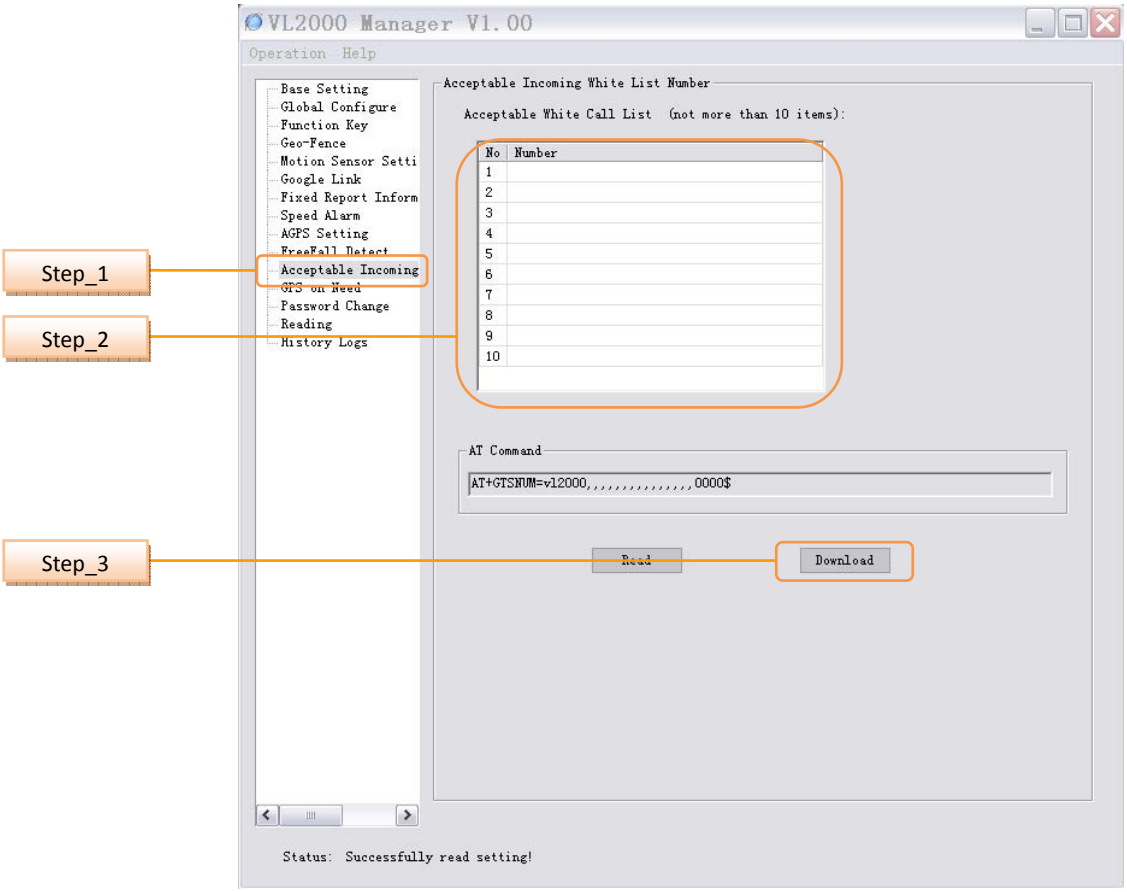
Step_1: Select *"FreeFall Detect"* option.

Step_2: Select *"Mode"* to disable/enable freefall detection.

Step_2: Set *"F-count"*, the time that the terminal's acceleration maintains.

Step_3: Download the change of freefall detection. The parameters of GTFFA are changed.

4.11 Set the Parameters of Acceptable Incoming White List Number

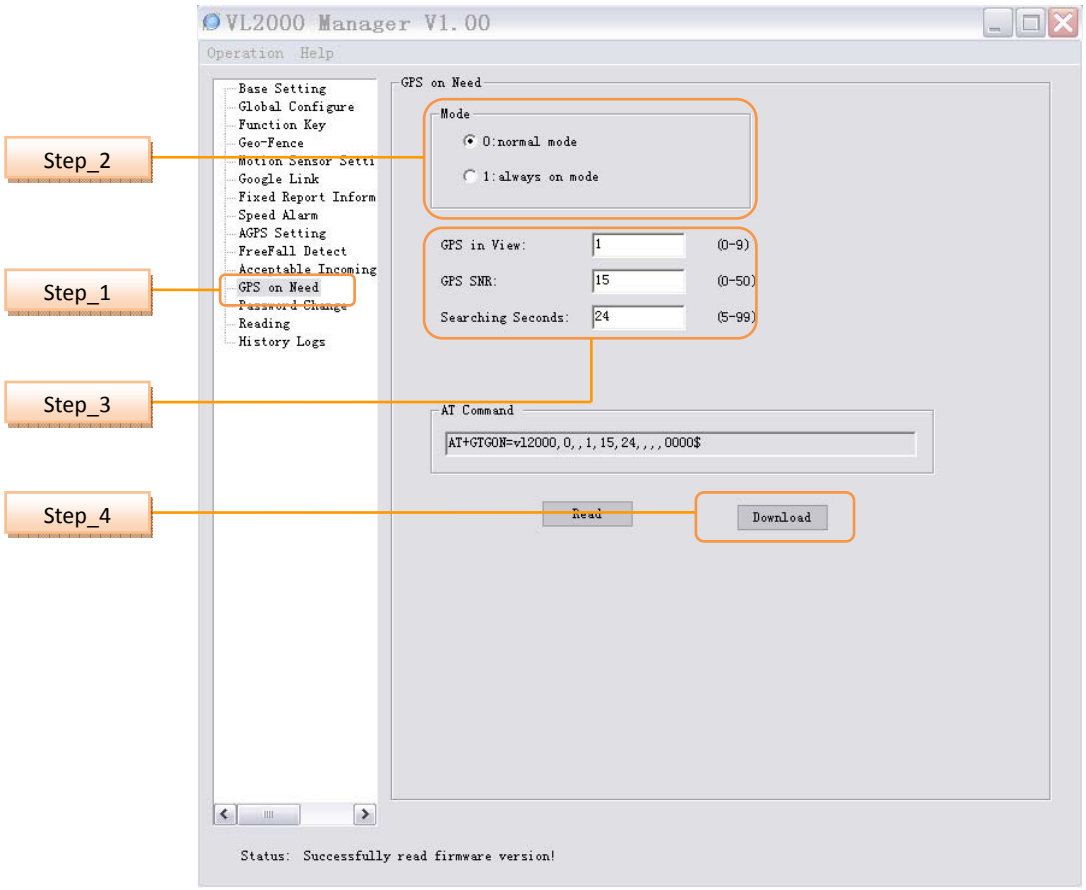


Step_1: Select *"Acceptable Incoming White List Number"* option.

Step_2: Set the number in *"Acceptable White Call List"* column. The two adjacent phone numbers are separated with a comma. Once there is an incoming call from this call list, the terminal will answer the call automatically.

Step_3: Download the setting. The parameters of GTSNUM are changed.

4.12 Set the Parameters of GPS on Need



Step_1: Select *"GPS on Need"* option.

Step_2: Select the mode.

0: normal mode

1: always on mode

Step_3: Set GPS parameters.

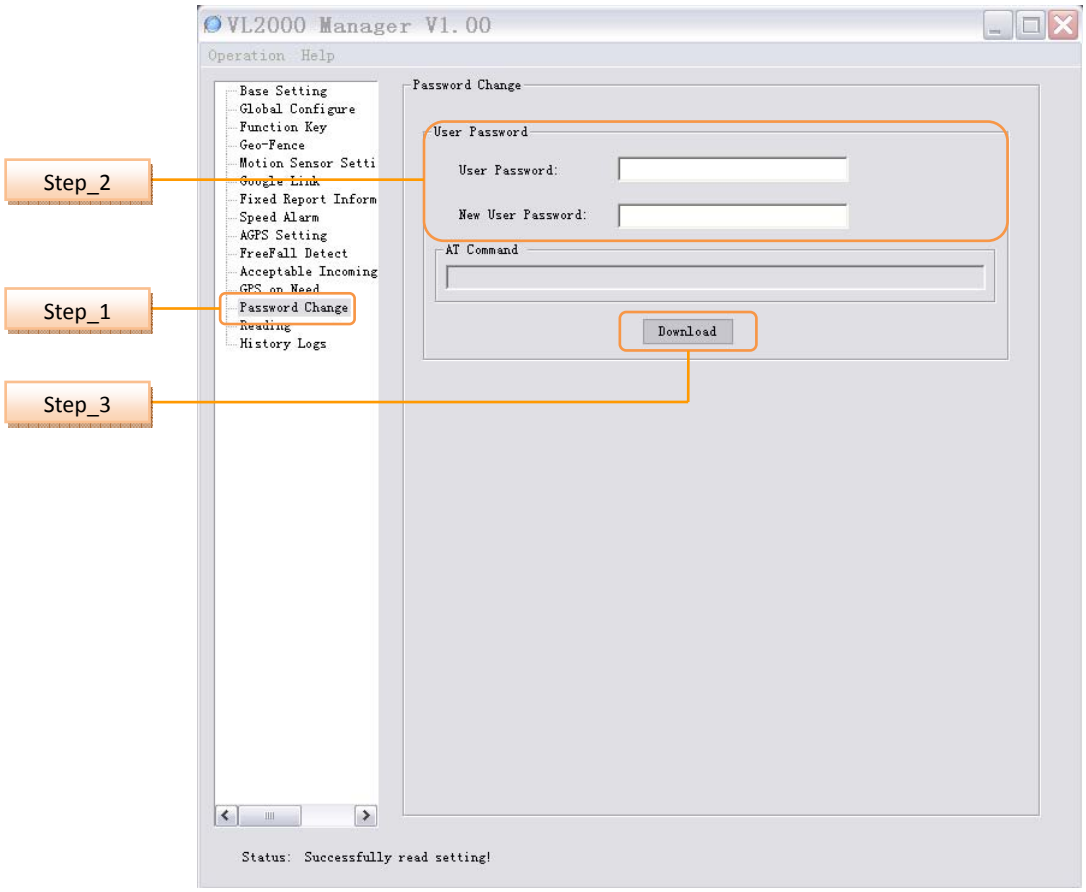
- ✧ *<GPS in view>:* minimum numbers of GPS in View that SNR is larger than 0
- ✧ *<GPS SNR>:* minimum sum limit of GPS Satellite's SNR
- ✧ *<Searching seconds>:*

  If <mode> equals to 0,

  After GPS have worked for <Searching seconds>, if the numbers of GPS is less than<GPS in view>, at the same time, GPS signal sum value is less than <GPS SNR>, GPS will be powered off for this round.

Step_4: Download the change of GPS power characteristics. The parameters of GTGON are changed.

4.13 Set the Parameters of Password Change



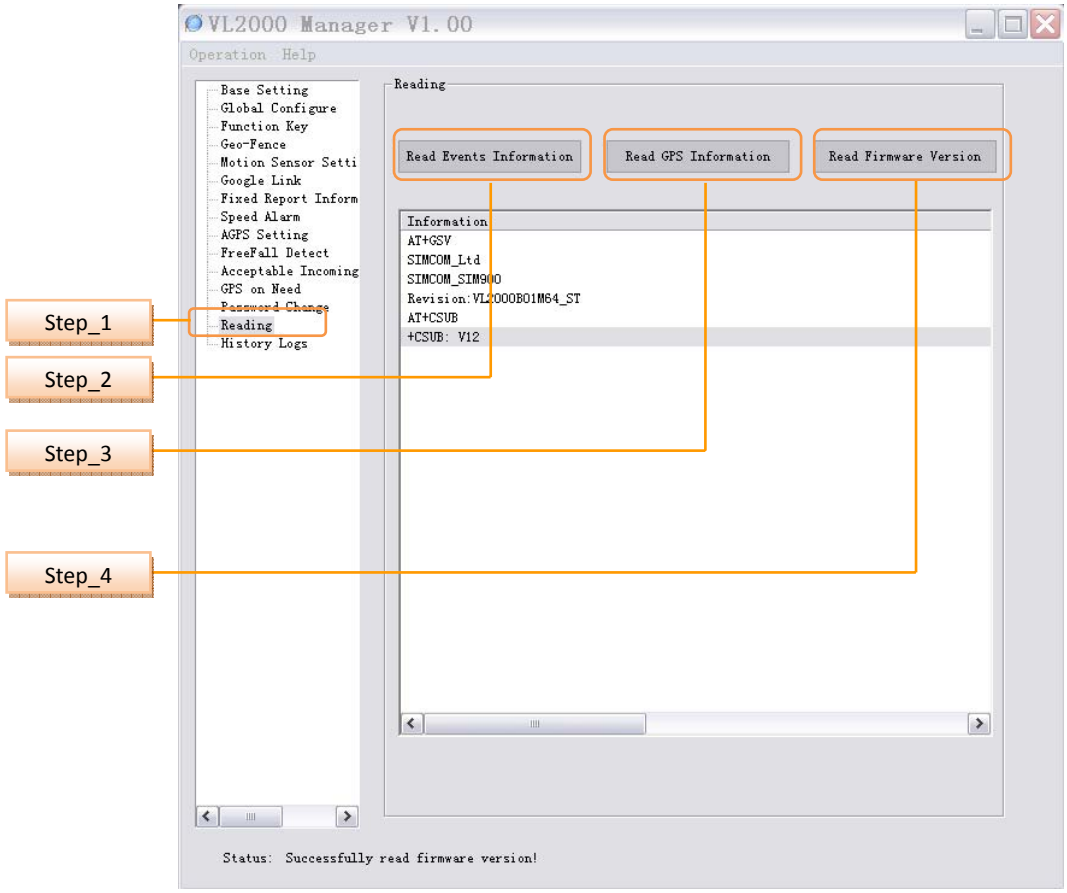
Step_1: Select *"Password Change"* option.

Step_2: Change the user password

- ✧ Enter current password in *"User Password"*.
- ✧ Enter new User password in *"New User Password"*.

Step_3: Download the change of user password. The parameters of GTCFG are changed.

4.14 Reading



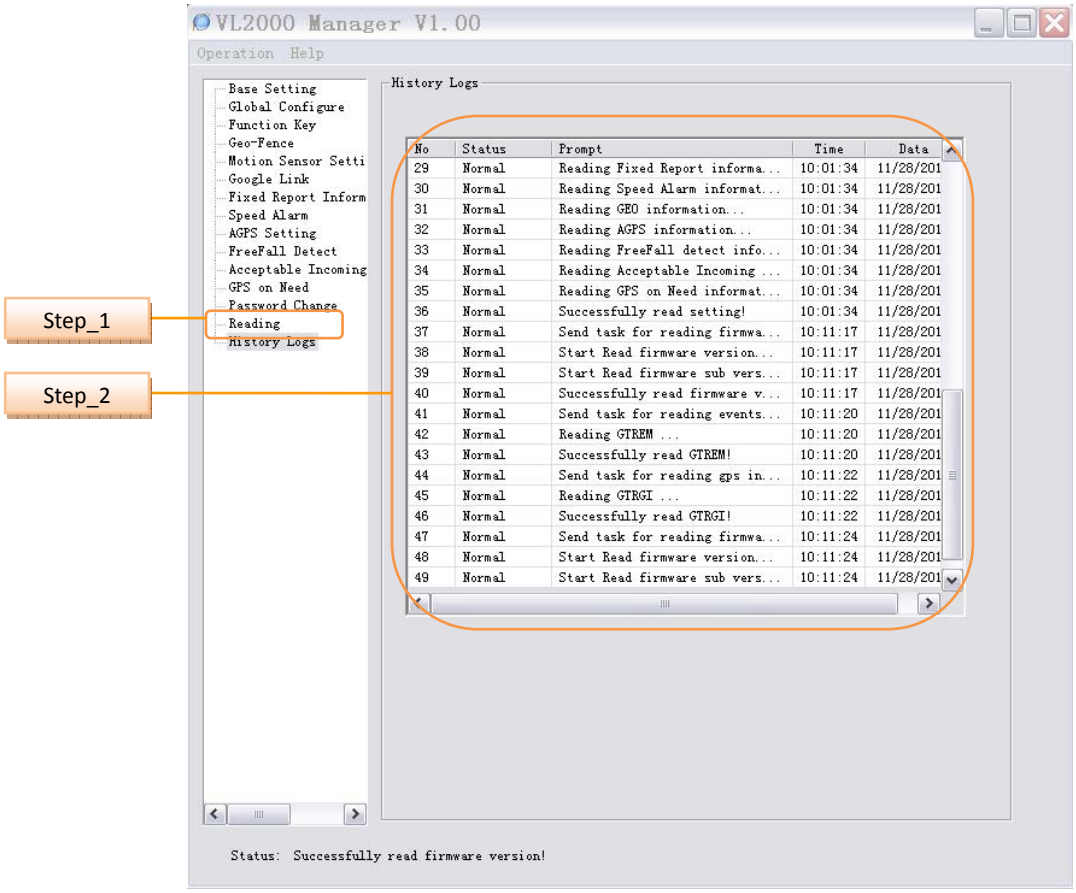
Step_1: Select *"Reading"* option.

Step_2: Click *"Read Events Information"*, the information will show below.

Step_3: Click *"Read GPS Information"*, the information will show below.

Step_4: Click *"Read Firmware Version"*, the information will show below.

4.15 History Logs

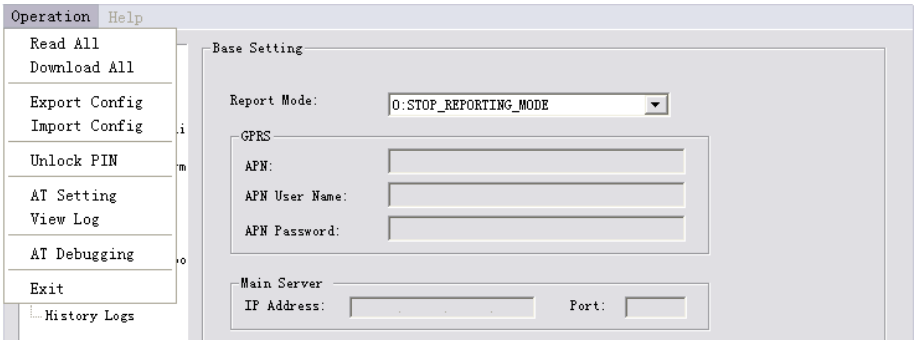


Step_1: Select *"History Logs"* option.

Step_2: The history logs will be shown.

5. Operation Menu

The operation menu supports “Read All”, “Download All”, “Export Config”, “Import Config”, “Unlock PIN”, “AT Setting”, “View Log”, “AT Debugging”, and “Exit” functions.



5.1 Read All

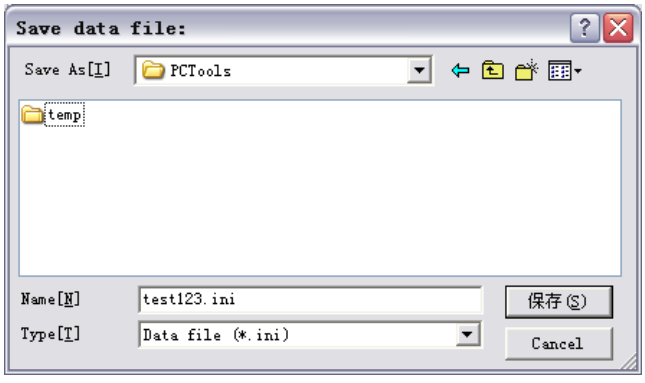
Read all parameters of VL2000 and list them in the corresponding fields.

5.2 Download All

Download all settings to VL2000.

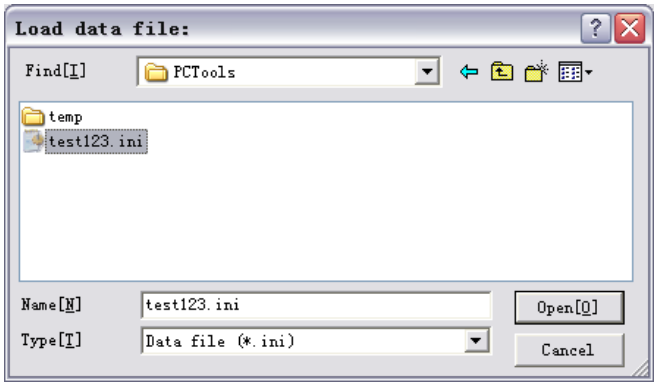
5.3 Export Config

“Export Config” exports the current configuration to a new “*.ini” file.



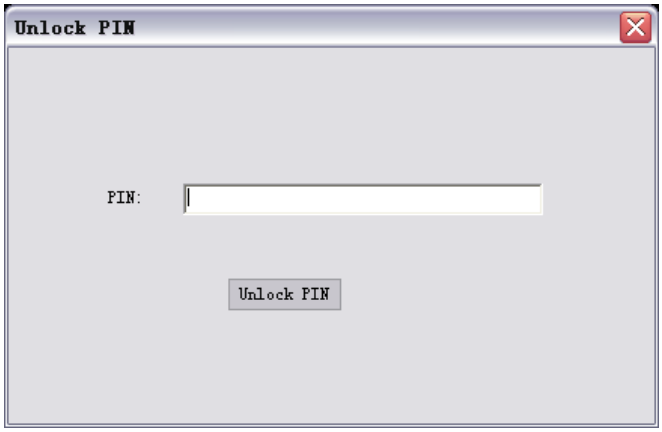
5.4 Import Config

“Import Config” imports a configuration file.

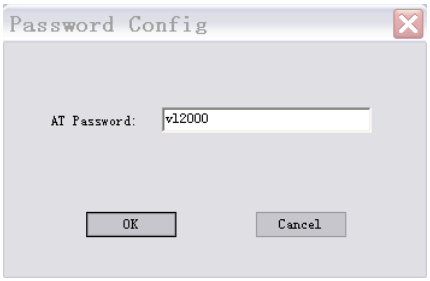


5.5 Unlock PIN

"Unlock PIN" unlocks the PIN of SIM card.



5.6 AT Setting

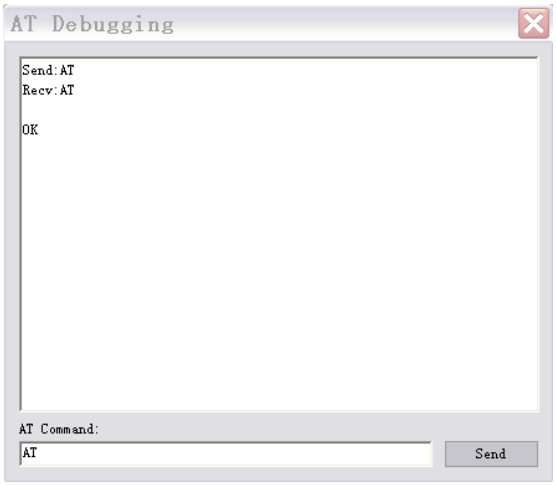


Set the password of AT command.

5.7 View Log

The document of AT log will pop up.

5.8 AT Debugging



User can test AT command through this window.

5.9 Exit

Exit the PC Tools.

6. Operation Attention

When accomplishing the operation with VL2000 by PC manager tools, exit the tools first then plug out the cable from VL2000. Otherwise the power saving algorithm cannot work.

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