AVL GPX-100

USER MANUAL

- Installation

- Operation

- Specification

1. Installation

1.1. Software Installation and Configuration

1.1.1. System Requirement

The minimum requirement to install the configuration application is

1. Operating System: Windows NT/2000/XP
2. Free Disk space: 5 Mbytes
3. One CD-ROM device
4. One DB-9 serial port connector

1.1.2. Software Installation

To install the configuration application,

1. Insert the installation CD to the CD-ROM device;
2. The installation will guild you to finish the setup; and
3. A QUEST, , icon will be created on your platform desktop screen.

1.1.3. Configuration

After the installation, you can click on the QUEST icon to configure your devices. To setup your device,

1. Connect DC adapter to your device as the power source.
2. Connect your device to PC with serial port cable;
3. Double click on QUEST icon, the *Home* tree will be shown as **Figure 1**
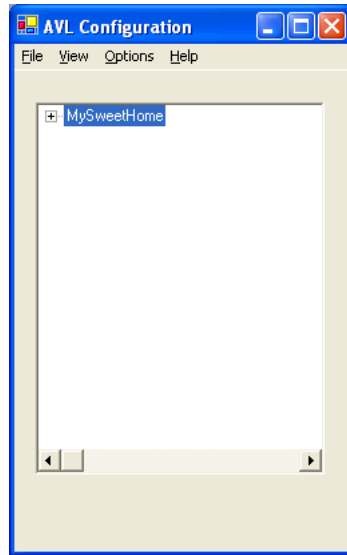
Figure 1: Home Tree

4. Expend the **Home** tree, an **AVLDevice** tree will be shown as **Figure 2**.
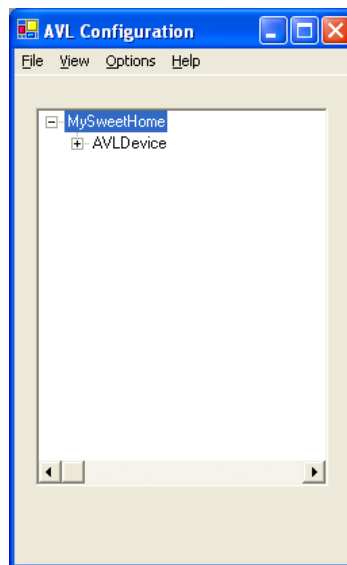
Figure 2: AVLDevice Tree

5. Expend the **AVLDevice** tree, there is a default device, **MyDefaultDevice**, has been created. (**Figure 3**)

Figure 3: Default Device

6. Double click on the '*MyDefaultDevice*' device.   You should be in the device configuration. (**Figure 4**)
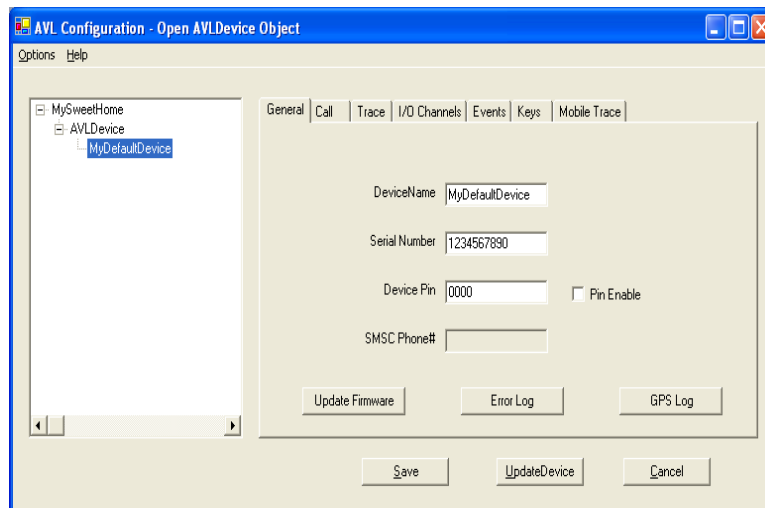
Figure4: Device Configuration

1.1.3.1.   Setup general information (*General Tab*)

From this interface, you can modify the device name, update device serial number (10 characters string from the back of the device), and device pin number.

1.1.3.2.   Setup phone call recipients (*Call Tab*)

The device is able to store 4 pre-set phone numbers for speed dial phone call. From this interface (Figure 5), you can setup the phone numbers to be your phone call recipients.

Figure 5: Call Recipient Setup

The device panel has 6 keys (**Figure 6**).

Figure 6: Device Panel

- To call 1st recipient, press **Call** key and wait 3 second, the call will be made.

- To call 2nd recipient, press **F1/0** key, then press **Call** key and wait for 3 second, the call will be made.

- To call 3rd recipient, press **F2/1** key, then press **Call** key and wait for 3 second, the call will be made.

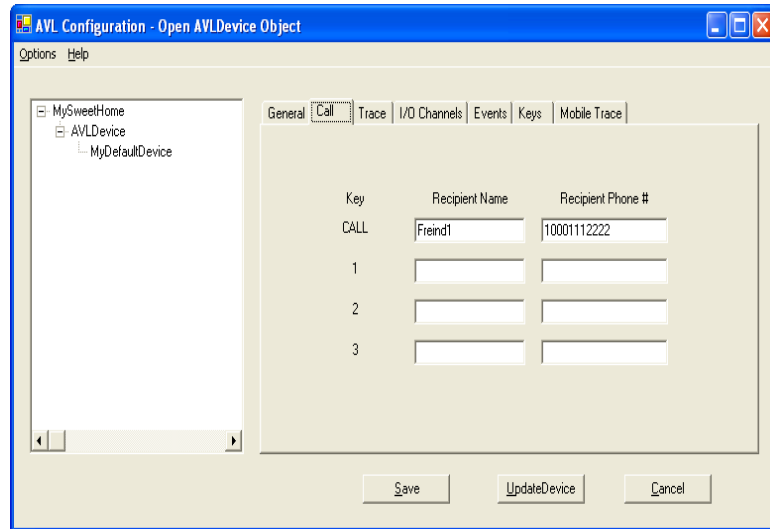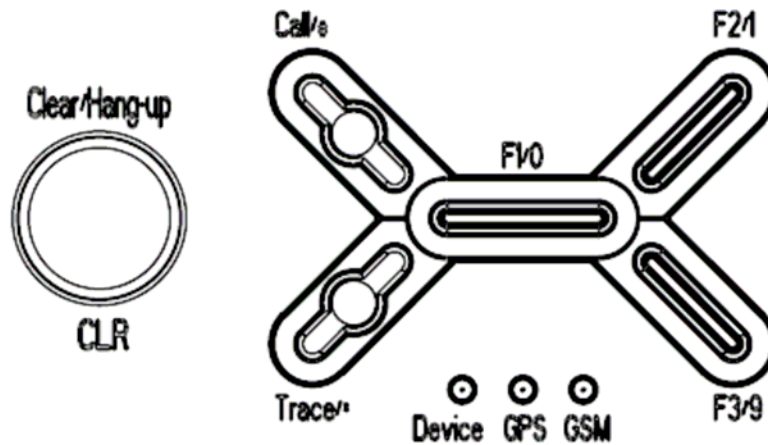- To call 4th recipient, press **F3/9** key, then press **Call** key and wait for 3 second, the call will be made.

- To make an emergency call 911, by pressing **F3/9**, **F2/1**, and **F2/1**, then waits for 3 second, the call will be made.

Note that the time interval between 2 key presses should be less than 3 second; otherwise it would be treated as 2 separated operations instead of a single action. Before the action being executed, press **Clear/Hangup** key will stop making the phone call.

To terminate a conversation, press **Clear/Hangup** key, the phone call will be ended.

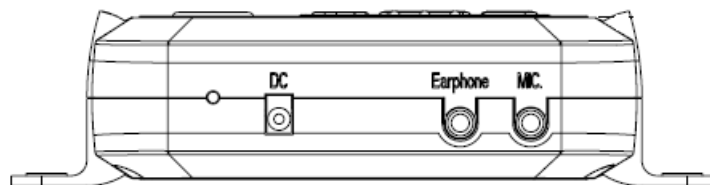Connect your headset to the device during the a phone call.

Figure 7: DC, Earphone, and MIC. panel

1.1.3.3. Setup Text Message recipients (*Trace Tab*)

The device is able to store 4 pre-set phone numbers for speed dial text message call. The text message includes system events and vehicle locations. From this interface (Figure 8), you can setup the phone numbers to be your text message recipients.
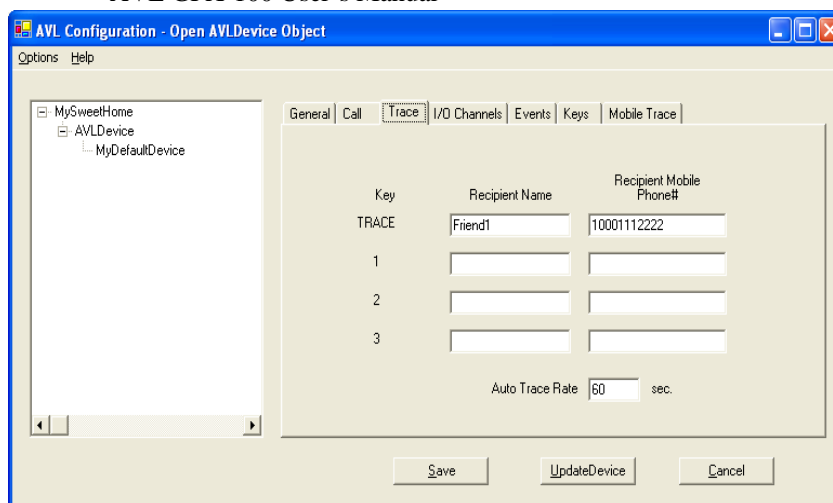
Figure 8: Text Message recipient

To send current vehicle location to 1st recipient, press Trace key and wait 3 second, the call will be made. This recipient is also the default recipient of system notifications (**2.1.3.5 Setup Alarm/Event notifications**).

- To send current vehicle location to 2nd recipient, press **F1** key, then press **Trace** key and wait for 3 second, the call will be made.

- To send current vehicle location to 3rd recipient, press **F2** key, then press **Trace** key and wait for 3 second, the call will be made.

- To send current vehicle location to 4th recipient, press **F3** key, then press **Trace** key and wait for 3 second, the call will be made.

Note that the time interval between 2 key presses should be less than 3 second; otherwise it would be treated as 2 separated operations instead of a single action. Before the action being

executed, press **Clear/Hangup** key will stop making the message call.

The `Auto Trace Rate` is the time interval of sending vehicle location, when the Auto Trace mode is ON.

1.1.3.4. Setup input and output points (`I/O Channel Tab`)

The device is able to connect 4 inputs and 4 outputs (**Figure 9**). From this interface (**Figure 10**), you can setup channel names and enable/disable individual channel.
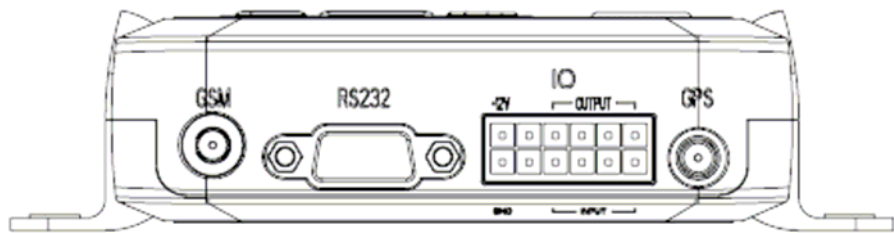
Figure 9: I/O channels
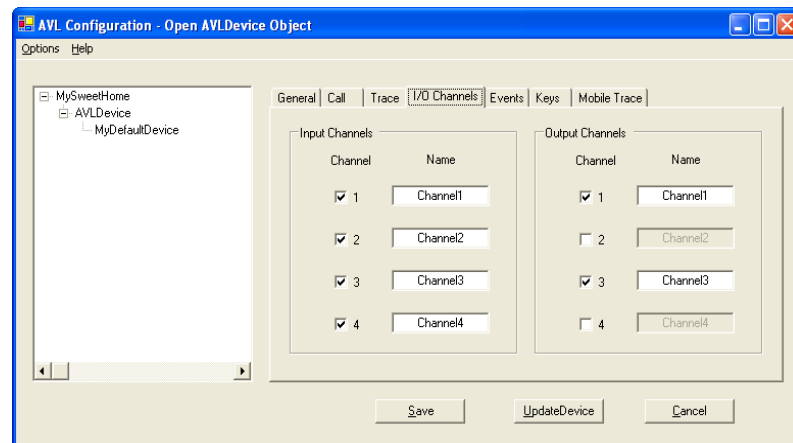
Figure 10: Input/Output setup

1.1.3.5. Setup Alarm/Event notifications (`Events Tab`)

The device will send text message to the default recipient for the events and trigger outputs for the alarms. The default recipient is the 1st text message recipient defined in the *Trace Tab*. From the

interface (**Figure 11**), you can setup event text message and enable/disable individual event and alarm.
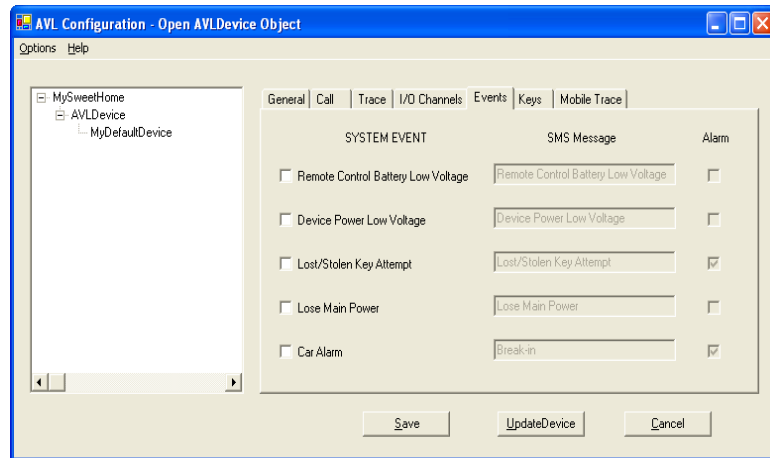
Figure 11: Event/Alarm setup

1.1.3.6. Setup remote controls (*Keys Tab*)

Every AVLDevice can learn up to 4 remote controls.   From this interface (**Figure 12**), you can have the device learns a new remote controller, read key information from the device, and setup status of the controls. The key number is read only, which is stored in the device.
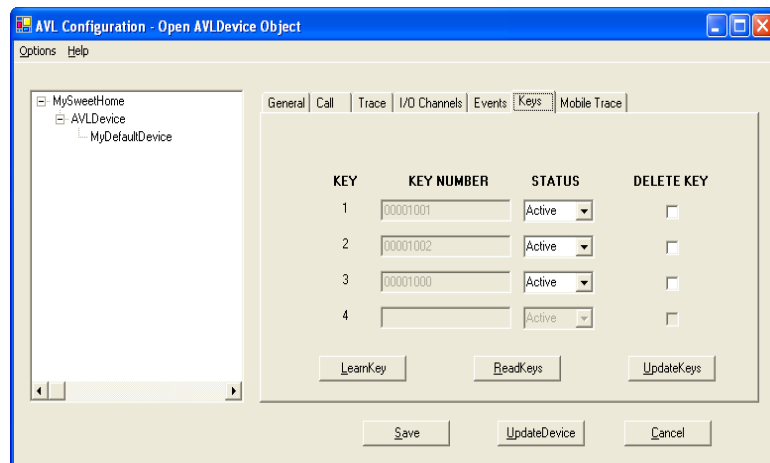
Figure 12: Remote Control setup

Learn a remote control:

- Press LearnKey button. The **F3** led will static on, which is waiting for remote control signals.

- Press any button of the remote control. If the device receives the signal, the **F3** led will become flashing for few seconds then turn off.

- A successful learning will return the key number of the remote control, which will be shown on this setup screen.

Note that **F3** led will be returned to off state either after a successfully learn a remote control or 15 second learning interval is passed.

1.1.3.7. Save and Download Configuration

After making any changes on the device, click on the Save button, data will be saved to local database; click on the *UpdateDevice* button, data will be saved to the local database and downloaded to the device.

1.2.   Hardware installation

Warning: In order to guarantee the device's proper functions and the vehicle's safety, a certified technician is required to install the device to the vehicle.

1.2.1.   Power Source

The power source can be either from the vehicle battery or from the cigarette lighter. In order to have normal functioning device, the power must be maintained between 9V to 15V.

1.2.2.   GPS Antenna

The GPS antenna is required to receive signal from the satellites. Without the GPS antenna, the vehicle location cannot be calculated.

1.2.3.   GSM Antenna

The GSM antenna is required to make phone calls, and send and receive text messages. Without the antenna, the phone call quality and data transfer ability may not be ensured.

1.2.4.   Input and Output

To enable the anti-theft function of the device, at least one of the input points must be connected to a sensor. The detailed input and output specifications please reference to the **4 Technical References**. You also need to reference **2.1.3.4 Setup Input and Output points** and **2.1.3.5. Setup Alarm/Event Notifications** to properly enable individual Input and output channels.

2. Operation

The keys on the device should match those on the remote controls.   For the simplicity, the key will be meant either remote control key or device panel key.

2.1.   Making a call

To make a phone call to a preset recipient, please reference to   **2.1.3.2 Setup phone call recipients**

2.2.   Receiving a call

To pick up an incoming phone call, press Call key to start the call. To hang up a phone call, press Clear/Hangup key to terminate the call.

2.3.   Sending current location

There are two modes of sending vehicle location

- **Manual mode**: As **2.1.3.3 Setup Text Message recipients** described, by pressing Trace, F1 then Trace, F2 then Trace, or F3 then Trace, the current vehicle location will be sent to the specific recipient.

- **Auto mode**: To enable the auto mode, by pressing the F2 key on the device and wait for the F2 LED being on, the device will enter the auto mode. The recipient is the last recipient of the manual mode; the interval is defined in the Auto Trace Rate (**Figure 7**). To disable the Auto Mode, by pressing the F2 key again and wait for the F2 LED being off, the device will return to the Manual Mode.

2.4.   Navigation

The device can output GPS data thru the RS232 port. Any notebook, PC, or palm device with a map application, as long as the map application is able to interpret the GPS data, the whole system becomes a real-time navigation system.

To enable this feature, by pressing **F1** key and wait for the **F1** LED being turn on, the device is in navigation mode. To disable this feature, by pressing the **F1** key again and wait for the **F1** LED being turn off, the device will end the navigation mode.

2.5. Arm/Disarm the device

If you have I/O channels are installed and enabled, press Cancel key of the remote control to arm/disarm the device.

Note that when you arm the device, you must make sure feature LED are all off. In order to make sure they are off, you can press Cancel key several time to turn off features and turn on the alarm system.

3. Technical Reference

Item	Quantity	Specification
MCU	1	Microchip pic18f6x2x 64pin 10MHz
Input	4	12VDC input
Output	4	12V@200mA output
GSM module	1	850/1900 MHz
SIM card	1	3V
GSM Antenna	1	Dual band 850/1900 MHz
GPS & Antenna	1	L1 1575.42 MHz; C/A code 1.023 MHz chip rate; 16 channels; -139dBm sensitivity
RF receiving Module	1	315 MHz for receiving remote control events.
EEPROM	4	256K bytes for GPS logging
RS232	1	9600 baud rate
Microphone	1	2V, 0.5mA; 2KOhms; -40~-50dB sensitivity, SNR > 50dB
Speaker	1	10mW; 32 ~150Ohms impedance; sensitivity 150 dB SPL
Function key	8	6 for external usage, 2 for internal usage
Main Power	1	Car 12V battery. Power range +9V ~ +15V
DC Adapter	1	12VDC for PC configuration only

4. Legal Statement

Users must follow User Manual in strict accordance during operations. If things which are not described in User Manual occur, don't handle them by yourself but contact us or the local agent immediately. **3G Quest** shall not be held responsible for the loss due to user's improper operations. The product's specifications are subject to change without notice.

Federal Communication Commission Interference Statement
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that
   to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

5. Appendix

5.1. Parts List

This package includes the following items:

- GPX-100 device
- 12VDC power adapter
- GPS antenna
- GSM antenna
- Remote control
- RS232 serial port cable
- Installation CD
- User's manual
- Power cord with I/O wires
- Cigarette power adapter
- 2-wire power cord
- Mounting screws
- Headset