

Snap-Link Mobile allows you to monitor and control lights, security, audio, temperatures and webcams on handheld mobile devices, such as Smartphones, PDAs or other devices running Windows® Mobile operating software.

Snap-Link Mobile is designed specifically for a mobile device with a Touchscreen, navigation key or scroll wheel. It tunnels directly into the HAI home control system through a secure AES encrypted connection. It does require an HAI Omni IIe, OmniPro II, Lumina or Lumina Pro home control system to be installed in the home.

Getting Started

Before running Snap-Link for the first time, there are a few things you should know:

- 1) What is your HAI controller's public network [IP address](#)?
- 2) What is your HAI controller's local network [port number](#)?
- 3) Have you port forwarded the HAI Controller [port number](#) on your router? See Appendix A for a discussion on [port forwarding](#).
- 4) What is your HAI controller's 128-bit [encryption key](#)?

Initial Setup

After Snap-Link Mobile has been installed on your device, select Snap-Link Mobile by using its icon or selection from the Start menu. On the bottom right, select the Menu button then select Accounts. On the bottom right of the Accounts page, select the File button then select New. Enter a name for this [Account](#), the [Network Address](#), [Port](#) and both parts of the encryption [Controller Key](#) of the HAI Controller (AES key).

There is an option titled [Require Code on Start](#). By selecting this option, when a person attempts to connect to the HAI Controller from Snap-Link Mobile, the user would have to enter a valid 4-digit Code in order to access the features of the controller. If this option is not selected, any person holding this phone can connect directly to the HAI Controller without having to enter any Code and can start making changes to your home's settings.

Select Save when all information is entered. The screen will go back to the Accounts page and Snap-Link Mobile will be ready to connect to the HAI Controller.

Connecting to the HAI Controller

While on the Accounts page of Snap-Link Mobile, select the account you just created. This will bring you back to the Snap-Link Mobile main page. A connection may now be attempted to the HAI Controller by simply selecting Menu then Connect. The mobile

device will then attempt to connect to the controller. Snap-Link Mobile will display **Connecting...** at the bottom of the display. When Snap-Link Mobile successfully connects with the HAI Controller, the list of pages will display on the screen. If an error is displayed, attempt the connection again, and then try the common troubleshooting steps.

General Operation

To command and control an item, highlight the item in the list and select it. Once selected, a page is displayed with the available commands for the specified item.

The Status Page

The Status page displays an overall summary of the system. This page displays information allowing you to observe the system time and date, security mode and the status or problems with the HAI Controller.

There are no command or control functions for this page.

The Control Page

The Control page displays a list of named units, outputs and flags along with the current state of each item. Items on this page are controllable and the control options are determined by the item type.

Controlling Units, Outputs and Flags

A unit's mode can be changed by selecting the Control button while the unit is highlighted. If the unit is a Room, you can also select it and it will bring up a page listing the units available for control in that room. Also, for Rooms, you can set a scene for the room. For a unit that is not a room, such as a light, output or flag, selecting the Control button while highlighting the unit will allow you to change the unit's state.

The Security Page

The Security Page displays a list of all security Areas of the HAI Controller and their current mode setting. The security mode of each Area can be individually set by selecting the Mode button while highlighting the Area on the main Security page.

Controlling Zones

You can also select an Area and Snap-Link Mobile will display the list of the Zones contained within that Area. Highlight the desired Area and select it. This will bring you to the Area's Zones page. Control of the Zone can be done by selecting the Options button. A Zone can be bypassed or restored or all zones can be restored at the selection of a button.

The Buttons Page

The Buttons page displays a list of user defined Buttons (macros). For buttons, the only command or control option is to execute the Button. Highlight the Button you wish to be run on the HAI Controller then select Run.

The Temperature Page

The Temperature page displays a list of all Thermostats, Temperature and Humidity sensors. The current temperature or humidity is displayed. If the item is a thermostat, the mode of the thermostat is also displayed. Devices on this page are controllable and control options are determined by the type of device.

Controlling Thermostats, Temperature and Humidity Sensors

Selecting a Thermostat, Temperature or Humidity sensor will bring up a page that is specific to the selected device. Typically, you can change the device-specific controls of the device by highlighting it and selecting Options. Options will allow you to send commands, change modes or set points for the device.

The Events Page

The Events page displays the event log for your HAI Controller. Events are displayed in chronological order with the most recent events at the top of the list. The list is updated continuously while the page is displayed. At the bottom of the page, the date/time of when the Event occurred is displayed.

There are no command or control functions for this page.

The Audio Page

The Audio page displays the Audio Zones for your HAI Controller. It also displays a status of each Audio Zone, respectively. By selecting the Audio button while on this page, you can make changes to the various features of the audio system. These

features include the Transport, Favorites, Volume, Mute and Power settings of the selected Audio Zone.

Transport will allow you to select Play, Stop, Pause, Previous and Next of the Audio Zone. Favorites will allow you to choose between 6 different favorite selections. Volume allows you to choose between the pre-selected settings of 25%, 50%, 75% or 100% output. Mute and Power allow you to turn On or Off the desired function, respectively.

Controlling Audio Zones

Selecting an Audio Zone will bring up a page that will list the Audio Sources available for the selected Audio Zone. To direct an Audio Source to the selected Audio Zone, highlight the desired source then press the Select button. The zone will change to use the source selected and return to the Audio Zone page.

The Video Page

The Video page displays the cameras controlled by your HAI Controller. When you highlight and select a camera, Snap-Link Mobile will attempt to connect to the camera and show its video feed on the device. Snap-Link Mobile currently supports cameras that can stream MJPEG, or have still frame JPG support.

You can also Add, Remove or Edit the cameras listed by selecting the Menu button.

Adding a Camera

To add a camera feed to the list, you will need the following information about it:

- 1) What is your camera's [Network Address](#)?
- 2) What is your camera's [Login](#) name?
- 3) What is your camera's login [Password](#)?

Select the Menu button then select Add to include a camera in the list. Enter an appropriate [Name](#) for the camera feed. Then enter the appropriate information for the [Network Address](#), [Login](#) name and [Password](#). If the camera is using a port other than port 80, then you will need to specify the port in the address, such as `http://mycameraaddress:portnumber`

Finally, select the [Camera Type](#) from which you are attempting to retrieve the feed. There are pre-selected types that work with Snap-Link Mobile and they are listed in the [Camera Type](#) list box. To ensure that your camera is supported by Snap-Link Mobile, please see the Supported Camera List.

If your camera is not in the supported camera list, but the manufacturer is listed in the [Camera Type](#) list box, then select that manufacturer and attempt to connect. If the

connection fails, or your manufacturer is not listed, then you can use the MJPEG selection. You will need to obtain from your camera manufacturer the URL of the camera's MJPEG feed, and manually enter it.

Appendix A – Terminology

Appendix A contains definitions and explanations for terms used throughout this documentation.

- [HAI Controller IP Address](#)
- [HAI Controller Port Number](#)
- [HAI Controller Encryption Key](#)
- [Internet IP Address](#)
- [Domain Name](#)
- [Static IP Address](#)
- [Dynamic IP Address](#)
- [Port Forwarding](#)
- [E-Mail Addresses](#)

HAI Controller IP Address

The controller's local network IP address is used to identify your HAI controller on the local network. The controller's IP address is a 32-bit numeric address written as four numbers separated by periods. An IP address has two components, the network address, and the host address. The first two numbers (e.g. 192.168) represent the Class B network address and must be the same as the first two numbers of your local network. The second two numbers (e.g. 0.101) identify a particular host on the local network and may be assigned at random as long as each device on the local network has a unique address.

The Controller IP Address can be found on an HAI console, under Setup->Miscellaneous.

See also: [Network Diagram](#)

HAI Controller Port Number

The controller's local network port number identifies the logical channel to the HAI controller. For example, port 80 is used for HTTP traffic; the controller's local network port number is used for Omni-Link traffic. In most installations, the default port number can remain the same. Port numbers range from 0 to 65535. Port numbers 0 to 1024 are reserved for designated services and should not be used. The default port number is 4369.

Snap-Link Mobile communicates using Transmission Control Protocol, or TCP. When enabling port forwarding in your router, be sure to select either TCP, or both TCP and UDP depending on what other products need to access the controller.

The Controller IP Address can be found on an HAI console, under Setup->Miscellaneous.

See also: [Network Diagram](#)

HAI Controller Encryption Key

Encryption and decryption of data between the HAI controller and Snap-Link Mobile is based on the Advanced Encryption Standard (AES) using a 128-bit cryptographic key. This key consists of 16 bytes (that is sixteen 2-digit values from 0-9 and/or the letters A-F). It is stored in the controller in two parts (PT 1 and PT 2) consisting of 8 bytes each.

The Controller Encryption Key can be found on an HAI console, under Setup->Miscellaneous.

Internet IP Address

Your Internet, or Public, IP address is used to locate and communicate with your HAI controller from remote locations over the Internet using Snap-Link Mobile.

To obtain your internet IP address, view the network status from your router's utility.

See also: [Network Diagram](#)

Domain Name

A domain name may be used in place of an Internet IP address. A domain name is a text name which links to a numeric Internet IP address (e.g. www.homeauto.com). To use a domain name, you must register the domain name with an accredited domain name registrar and pay a yearly fee.

See also: [Network Diagram](#)

Static IP Address

A Static IP address is a dedicated IP address assigned to your Internet account by your ISP (Internet Service Provider). This address will not change. You will use this IP address to access your HAI controller from remote locations over the Internet using Snap-Link Mobile.

See also: [Network Diagram](#)

Dynamic IP Address

A Dynamic IP address is an IP address that changes each time you connect to the Internet. If your Internet IP address is dynamic, to locate and communicate with your HAI controller from remote locations over the Internet using Snap-Link Mobile, you must subscribe to a Dynamic DNS (Domain Name Service). Dynamic DNS is a service that maps your dynamic (changing) IP address to a static (permanent) hostname, allowing you to access your HAI controller over the Internet using your static hostname.

A "client" program is used to automatically update your Dynamic DNS provider with your current IP address whenever it changes. Several router/switch manufacturers have embedded a Dynamic DNS client into their router firmware. These devices work with several of the Dynamic DNS providers, including both free and commercial services. These devices are especially beneficial because the router can be powered up all the time, so the dynamic update is always current and is handled by a single device (the router/switch) in the local network. This allows you to locate and connect to your HAI Controller without having a computer on the local network powered up and running.

See also: [Network Diagram](#)

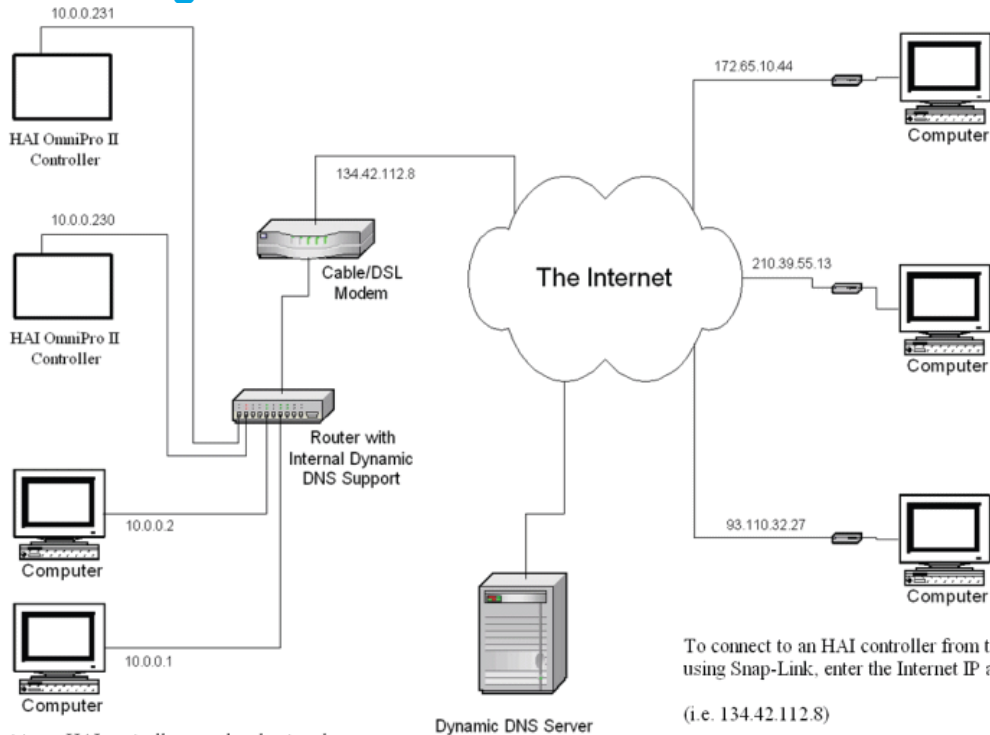
Port Forwarding

To access your HAI controller from remote locations over the Internet, port forwarding on your router must be configured. Port forwarding sets up public services on your network. The HAI controller listens for all IP/UDP/TCP communications addressed to it on the specified UDP/TCP port number. The router will need to forward all communications on the specified port to the HAI controller.

Using your router's utility, map the HAI controller's port number (generally 4369) to the HAI controller's IP address. When enabling port forwarding in your router, be sure to select either TCP, or both TCP and UDP depending on what other products need to access the controller.

See also: [Network Diagram](#)

Network Diagram



To connect to an HAI controller on a local network using Snap-Link, enter the controller's IP address:

(i.e. 10.0.0.230)

To connect to an HAI controller from the Internet using Snap-Link, enter the Internet IP address:

(i.e. 134.42.112.8)

Supported Cameras

The following model of IP Cameras have been tested by HAI and are compatible with Snap-Link Mobile.

Manufacturer	Model	MJPEG	JPEG
Panasonic			
	KX-HCM110A	YES	YES
	BL-C10	YES	YES
Axis	205	YES	

Troubleshooting

Error Message / Symptom	Action
When attempting to connect, Snap-Link Mobile displays: "Controller Session Terminated"	The encryption key you entered in setup is incorrect.
When attempting to connect, Snap-Link Mobile displays: "Connection Timed Out"	Snap-Link Mobile timed out waiting for a response from your controller. Check: <ul style="list-style-type: none"> • Network Address • Port • Ensure the correct port is being forwarded (TCP)
When attempting to connect, Snap-Link Mobile displays and error message not covered here.	Most likely Snap-Link Mobile is unable to access the internet. Try the following: <ul style="list-style-type: none"> • Check Network Address • Check Port • Check Port forwarding • Check Encryption Key • Restart the device
When using Snap-Link Mobile, it will revert back the home screen and display: "Retrying"	Snap-Link Mobile lost its connection with the controller, most likely due to issues with the cellular network.
When Attempting to connect to a camera, Snap-Link Mobile displays: "Invalid Credentials"	Snap-Link Mobile was denied access to your IP Camera. Check: <ul style="list-style-type: none"> • Correct Login and Password • Camera Setup to ensure MJPEG streaming or JPEG still frame images are allowed for that account.
When Attempting to connect to a camera, Snap-Link Mobile displays: "Not Found"	The provided URL for the Camera is invalid. Check it and try again.

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Snap-Link@HomeAuto.com

or visit the HAI web site at:
<http://www.HomeAuto.com>

or call the HAI Technical Support department at:
800-229-7256 or 504-736-9810

Release Notes